University of South Florida

Digital Commons @ University of South Florida

November 2018

Early Identification Of Students In Accelerated Curricula With Signs Of Academic And Emotional Risk: Working With Teachers To Identify At-Risk Students

Elizabeth D. Storey
University of South Florida, elizabethdstorey@gmail.com

Early Identification Of Students In Accelerated Curricula With Signs Of Academic And

Emotional Risk: Working With Teachers To Identify At-Risk Students

by

Elizabeth D. Storey

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in School Psychology
Department of Educational and Psychological Studies
College of Education
University of South Florida

Major Professor: Shannon Suldo
Linda Raffaele Mendez
Natalie Romer
John Ferron

Date of Approval:
November 2, 2018

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

As part of a comprehensive, multi-tiered system of support for students' emotional, academic, and behavioral success, effective universal screenings are essential to identify students who may benefit from early intervention and targeted prevention services (Strein, Kuhn-McKearin, & Finney, 2014). Although many screening procedures and methods have been developed and evaluated for general education populations, more research is needed on screening procedures designed for one traditionally underserved population in school-based mental health services— students in accelerated curricula (namely, students in Advanced Placement classes or in the International Baccalaureate program; AP/IB). When teachers are involved in universal screening procedures, regardless of student population served, training strategies to improve teacher accuracy in identifying students at-risk have resulted in gains in teacher *knowledge* of mental health disorders, but not improvements in *accuracy* (Deacon, 2015; Moor et al., 2007; Veira et al., 2014). This study examined prevalence of academic and emotional risk among 352 9th grade AP/IB students (enrolled in AP Human Geography or IB Inquiry Skills) in seven schools. Within a subgroup of 245 students (from five schools) who also participated in a teacher nomination procedure, this study also examined the accuracy of teachers ($N = 6$) in identifying the students who demonstrate signs of risk academically (defined by low grade in class or overall GPA) or emotionally (defined by high levels of perceived stress and low school satisfaction). Almost one in four students (24.17%) were designated as at-risk academically for either low course grades or GPA, and almost one in three students in the sample (28.88%) met at-risk criteria for emotional

risk for either low school satisfaction or high perceived stress. In terms of teacher accuracy,

teachers were found to have a high sensitivity and specificity identifying students with academic

risk (90% sensitivity and 90.32% specificity across all 6 teachers). Mirroring previous research,

teacher accuracy identifying students at-risk emotionally was lower (42.42% sensitivity and

76.14% specificity across all 6 teachers). The study also explored patterns in at-risk students

missed by teachers, based on student characteristics such as gender, race, socio-economic status,

risk severity, and risk type. Due to a low sample size of teachers, analyses were unable to detect

differences in the rate of students missed across different student variables. Finally, the study

advanced and evaluated the effects of a brief teacher training and feedback intervention intended

to increase accuracy in identifying students at-risk. Low sample sizes again precluded

identification of meaningful statistical differences. Although statistical findings were limited,

quantitative and qualitative acceptability measures indicated high participant acceptability and

feasibility for the new intervention. Conclusions from the study may be used within a

population-based framework of student mental health services, to best inform early identification

methods of students in accelerated curricula at-risk for diminished academic and emotional

success, and working with teachers in screening efforts. Further, future research points to

continued need to evaluate the brief teacher intervention with larger sample sizes to evaluate any

possible intervention effects.

CHAPTER ONE:

INTRODUCTION

Statement of the Problem

Students' needs exist on a multi-tiered, multi-faceted continuum (Doll, Cummings, & Chapla, 2014). To best serve these needs, whether in entire schools, classes, small groups or individually, multi-tiered systems of supports (MTSS) can provide academic, behavior, and social-emotional services. One essential component of MTSS for any student outcome, including those social-emotional in nature, includes providing supplemental supports to at-risk groups or for those students showing initial signs of distress, through prevention and early intervention services (Strein, Kuhn-McKearin, & Finney, 2014). Without evidence-based prevention and systematic identification of youth at-risk, schools can often find themselves into a business of "putting out fires," (p. 37) for individual students experiencing crises or exhibiting intense behaviors (Sinclair, Christenson, Lehr, & Reschly Anderson, 2003). With prevention services, more severe student problems can be either eradicated, or intervened upon early before developing into a blaze. Additionally, investing financial resources into prevention programs has been found to yield a large return on investment for youth outcomes (Cooney et al., 2010). In recent years schools have acknowledged the importance of proactive services for students.

School-based mental health providers, such as school psychologists, indicated in a large survey that they may be spending almost a third of their time focused on improving outcomes for all students and those students at-risk, which is a number that has increased from previous years

(Castillo, Curtis, & Gelley, 2012). To provide a framework for providing prevention and early intervention for students at-risk and those already experiencing risk, population-based school mental health services, including prevention, universal screening, and intervention services can occur together to ensure optimal outcomes for all students (Doll, Cummings, & Chapla, 2014). School-based mental health care is already a primary treatment avenue for youth who receive targeted services for emotional well-being. Only a quarter of youth receiving mental health services attend community or clinic-based settings to do so (Merikangas et al, 2010). School-based services are often a more accessible route for treatment, as youth have been found to be more likely to seek out mental health services at school-based settings compared to community settings (Slade, 2002).

To identify students for targeted prevention and early interventions, schools can utilize universal screenings, or structured assessment methods of all students to connect those in need to appropriate and matched supports (Albers & Kettler, 2014). Universal screenings are a "foundational" component (p. 149) of school-based mental health services within schools (Doll, Cummings, & Chapla, 2014). Research supporting universal screening reports making screening part of everyday school culture and practices may reduce stigma by connecting students to services before more severe symptoms develop (Fazel, Hoagwood, Stephan, & Ford, 2014). Universal screening forms vary from rating scales, referral methods, school records review, or educator nominations, or multiple-gating systems. Each method is associated with its own set of benefits and implications. One method in particular, teacher nomination, is easily implemented and cost-effective, and has been deemed a viable method for identifying students with externalizing symptoms (Dwyer, Nicholson, & Battistutta, 2006; Mollins & Clopton, 2002), but has not been found to be as accurate identifying students with internalizing concerns

(Cunningham & Suldo, 2014; Dadds, Spence, Holland, Barret, & Laurens, 1997; Gelley, 2014; Layne, Bernstein, & March, 2006; Moor et al., 2007; Ollendick, Oswald, & Francis, 1989).

To improve teacher accuracy identifying students with specific forms of risk- such as internalizing symptoms of mental health problems, teacher trainings have been developed to increase teacher knowledge and accuracy identifying students with emotional distress. Although teacher trainings have been found to increase teachers' knowledge and self-efficacy, they have not been found to be associated with increases in teacher accuracy (when accuracy is defined as converging opinion of the diagnostic status of youth per youth self-report of elevated anxiety, depression, or other psychopathology symptoms; Deacon, 2015; Moor et al., 2007; Veira et al., 2014). Teacher trainings in identification of mental health problems tend to include didactic instruction and practice with vignettes, but have not traditionally included individualized feedback on performance which seems an important element of professional development (Joyce & Showers, 2002; Rose & Church, 1998).

Specific Screening Needs of High School Students in Accelerated Courses

Models of school-based mental health services assert universal and other supports should be personalized towards populations with certain common risk factors or vulnerabilities (Christner, Mennuti, & Whitaker, 2009). One such population is high-achieving students in Advanced Placement or International Baccalaureate classes (AP/IB). Perhaps due to their traditionally high levels of academic achievement, research suggests that gifted youth and AP/IB students are underserved in school-based mental health services (Suldo, Gormley, DuPaul, & Anderson-Butcher, 2014) and beyond. Of a survey of 37 states in 2015, twelve states reported providing no funding to support gifted and talented education (NAGC, 2015). Youth in accelerated courses are prone to the same frequency of mental health problems that have been

3

observed in nationally representative studies of American youth, which estimate one in five youth suffer severe impairment from mental health disorders (Merikangas et al., 2010; Perou, 2013; Suldo, Shaunessy-Dedrick, Ferron, & Dedrick, 2018). Although many may assume AP/IB youth are not in need for extra supports, research has articulated this population has salient and unique risk factors in need of specialized services, such as high perceived stress levels (Suldo & Shaunessy-Dedrick, 2013) and the importance of school connectedness (Suldo, Shaunessy-Dedrick et al., 2018). Additionally, students in AP/IB courses and programs are a smaller proportion of a larger school culture. School-wide characteristics, such as preexisting databases and schoolwide initiatives such as Positive Behavior Interventions and Supports (PBIS) that are geared towards the needs of all students in a school, may interact or pose barriers to delivering services specific to the needs of AP/IB students.

Based on the wide array of evidence shedding light on AP/IB students' risk factors, an emerging area of research is focused on developing and validating universal and selective supports for AP/IB youth in 9th grade. The freshman year may be particularly important as research suggests this population is especially at-risk during the stressful transition to high school and accelerated classes (Suldo & Shaunessy-Dedrick, 2013b). Universal supports are important for ensuring all AP/IB students develop effective coping strategies and school connectedness. For students in need of additional supports, screenings can serve as an effective method to identify students for short-term selective interventions for AP/IB youth. Therefore, establishing screening procedures to optimally identify AP/IB 9th grade students at risk academically (e.g., due to achievement levels below benchmark) and emotionally (e.g., due to elevated levels of perceived stress or low levels of school connectedness) has become even more important in order to connect students to services relatively early in their high school career.

Purpose of the Study

The purpose of this study was to examine the accuracy of teachers (specifically, those who teach AP Human Geography or IB Inquiry Skills) to identify 9th grade students who are at-risk academically and/or emotionally, as part of a multi-informant screening procedure to identify students for eligibility in a short-term selective intervention. The study did not intend to evaluate AP/IB teachers' awareness of student risk academically and emotionally, but instead explored how accurate teachers are in identifying students at-risk in his or her classes. Additionally, the study examined demographic patterns in students missed by AP/IB teachers. Student demographic features (gender, race, SES, risk factor severity, and risk factor type) were explored. Finally, the study also evaluated the impact of a brief intervention on subsequent teacher accuracy in identifying 9th grade AP/IB students with academic and/or emotional risk.

The study hoped to add to the knowledge base not only on best practices in identifying AP/IB youth with signs of risk, but to research on school screening practices in general. As AP/IB youth have been considered an underserved population in school-based mental health research and services (Suldo, Gormley, DuPaul, & Anderson-Butcher, 2014), the utility of specialized screening practices for this population to identify students at-risk is especially pertinent, as AP/IB youth experience more perceived stress related to academic demands than students in general education (Suldo, Shaunessy, Thalji, Michalowski, & Shaffer, 2009). In particular, 9th grade is associated with sharp, sudden increases in AP/IB students' perceived stress (Suldo and Shaunessy-Dedrick, 2013b), leading the current study to focus on the freshman year for student screening and supplemental services.

Targeted screening practices for this population may also be important as universal screening research in general suggests students with high academic achievement (a common

hallmark of AP/IB youth) tend to be missed in both teacher nomination and referral procedures (Eklund & Dowdy, 2014). Detecting patterns across AP/IB students missed in teacher nomination procedures assists in the evaluation whether teacher nomination procedures are appropriate to identify signs of risk within this population of youth, as similar nomination procedures have been found to be more likely to miss and misidentify students with internalizing concerns (Lane & Menzies, 2005; Richardson et al., 2009; Soles, Bloom, Heath, & Karagiannakis, 2008).

Exploring ways to maximize teacher accuracy when identifying students at-risk (not necessarily yet experiencing major problems such as failing grades, mental illness, or complete disengagement at school) is especially pertinent, as prevention and early intervention is an integral part of a multi-tiered system of support for emotional and academic wellness. Current existing teacher training methods have not been found to be efficacious at producing promising returns on teacher accuracy (Deacon, 2015; Moor et al., 2007; Vieira et al., 2014). One procedure that included performance feedback and practice was associated with increases in undergraduate accuracy on a behavior screening tool, but did not include teacher participants or training in identifying students with mental health concerns (Kilgus, Kazmerski, Taylor, & von der Embse, 2017). This study advanced a feedback and practice intervention developed to improve the accuracy of teachers in identifying at-risk students; these and similar training methods could be employed in the identification of other student populations in screenings.

Definition of Key Terms

   Accelerated coursework. Accelerated coursework for high school students includes college-level coursework, such as Advanced Placement (AP) classes or the International Baccalaureate (IB) Diploma program. In particular, this study focuses on only 9th grade students

in their first year of taking AP classes (who are enrolled in the class AP Human Geography) or in the pre-IB program (who are enrolled in the class IB Inquiry Skills). For participation in AP classes, students typically voluntarily elect on their own to enroll in AP Human Geography and other AP classes as they choose. For participation in the IB program, students must apply during the end of middle school for the entire IB experience throughout high school. Next, students who apply for IB will be invited to participate in the program or not based off admissions criteria, such as grades in classes and standardized test scores.

Student success. Student success is increasingly defined as both academic and emotional wellness, and this definition of success has similarly been adopted in previous research of AP/IB youth (Suldo, Shaunessy-Dedrick, et al., 2018). In accordance with youth in accelerated programs, success for students, families, teachers, and administrator includes high academic success for potential college credits and for competitive admission into colleges, but also expands to students' emotional well-being. Emotional well-being (i.e., mental health) has been measured within this population with indicators such as psychopathology, life satisfaction, and school burnout (Suldo, Shaunessy-Dedrick, et al., 2018). The expansion of student success into interest in emotional and academic indicators is aligned with a more whole-student outlook on supporting students in accelerated curricula.

Correlates of AP/IB student success. Factors that predict academic and emotional indicators of student success include student motivation and engagement (cognitive, affect, and behavioral forms) and students' coping strategies (e.g., approach/problem-focused, avoidance, and withdrawal styles of coping with academic demands). Inadequate coping may contribute to greater *perceived stress*, as seen in research with IB students indicating associations between stress, coping styles (positive appraisal and anger, e.g., yelling) and mental health (life

satisfaction, and internalizing behaviors; Suldo, Shaunessy, & Hardesty, 2008). Affective engagement includes can be indexed by *school satisfaction*, described below.

At-risk. In the current study, at-risk for diminished success in AP/IB classes was defined as the presence of signs of factors that predict poor emotional or academic outcomes. Therefore, in the present study a student at-risk either demonstrated *academic risk* (defined by less than satisfactory grades in AP Human Geography or IB Biology, or subpar unweighted grade point averages) or *emotional risk* (defined by low school satisfaction or high perceived stress). Defining academic risk for students in accelerated coursework differs some from conceptualizing risk in general education courses, wherein grades of "C" are often deemed satisfactory (e.g., students with all C's are eligible for participation in school sports). Case in point, for students seeking an IB Diploma, requirements include no more than three "grade 3's," no more than two "grade 2's", and no "grade 1's" according to the IB scale of achievement awarded on the end of the year IB exams (International Baccalaureate Organization [IBO], 2014). An IB score of 3-4 is translated to a traditional school grade of C, an IB score of 2 is translated into a traditional school grade of D, and a score of 0-1 is commensurate with a traditional school grade of F (King, Lockhart, & Sirginnis, 2015). Accordingly, the current study viewed a C or below (D or F) in IB Biology as an indicator of academic risk.

Academic achievement. Academic achievement can be considered in a multitude of ways, but was conceptualized in this study as class grades in either AP Human Geography or IB Biology, dependent on a student's enrolled program, or high school grade point average (GPA) unweighted.

Perceived stress. Perceived stress is "experienced subjectively after one's set of resources to deal with a given challenge are taxed" (Lazarus & Folkman, 1984). Although

several models of stress exist, the aforementioned definition is consistent with conceptualizations of stressed used in prior research of AP/IB youth (Suldo, Shaunessy, & Hardesty, 2008).

School satisfaction. School satisfaction can be defined as a "student's subjective cognitive approach of the quality of his or her school experience" (Suldo, Bateman, & Gelley, 2014, p. 365). In the present study, school satisfaction was similarly considered defined as a domain of life satisfaction, in regards to school, and used as a proxy for affective engagement. Affective engagement, and other subtypes of engagement in general, is a term clouded by different, conflicting definitions and various measurement models (Appleton, Christenson, Kim, & Reschly, 2006). Skinner, Kinderman, and Furrer (2009) conceptualize satisfaction, pride, and interest as all parts of emotional/affective engagement, consistent with the study.

Teacher nominations. Teacher nominations are a universal screening method that consists of teachers systematically examining all of their students, and identifying ("nominating") the students who he or she considers is at-risk or is already experiencing distress. Teacher nominations can be used for many different types of student concerns, varying from academic, behavioral, or social-emotional. The procedure usually includes operational definitions or risk symptoms teachers can review before nominating eligible students.

Student self-report. Student self-report is a universal screening method in which students rate themselves on indicators of relevant constructs such as perceived stress or school connectedness, or related outcomes such as psychopathology or life satisfaction. Students typically complete standardized rating scales, but also can self-report indicators such as grade in class or grade point average.

School records. Already existing student data from students' permanent school records include indicators such as office disciplinary referrals (ODRs), course grades, grade point

average, and school attendance. These indicators can be systematically reviewed as a universal

screening procedure to identify students at-risk for academic challenges or low behavioral

engagement.

Accuracy. The validity of screening methods and procedures are frequently evaluated by

examining their conditional probability indices. Some common conditional probability indices

include sensitivity and specificity (Albers & Kettler, 2014). Other indices used include positive

predictive value (PPV) and negative predictive value (NPV; Albers & Kettler, 2014).

	Gold standard indicates presence of risk (e.g., student self-reported symptoms in the elevated range, or school records indicate academic challenges)	Gold standard indicates student is not at risk (e.g., student did not self-report symptoms in the elevated range, and school records indicate adequate academic progress)
Student Nominated by Teacher	True Positive	False Positive
Student Not Nominated by Teacher	False Negative	True Negative

Figure 1. Matrix of key terms used to describe a universal screening method's accuracy (adapted from Green & Zar, 1989)

Sensitivity. Sensitivity is defined as, "the proportion of examinees who need help who are

accurately identified" (Albers & Kettler, 2014, p. 123). The equation for sensitivity includes true

positives (students who self-report emotional risk, and/or have school records that indicate

academic risk <u>and</u> who are correctly identified by teacher nominations) divided over the sum of

true positives and false negatives (students who self-report emotional risk, and/or have school

records that indicate academic risk but who are incorrectly not identified by teachers). Sensitivity

is often the accuracy index most commonly used to evaluate whether a screening system is

appropriate for use, as it evaluates directly whether students in need are being identified for needed services.

   Specificity. Specificity is defined as, "the proportion of examinees who do not need help who are accurately not identified" (Albers & Kettler, 2014, p. 123). The equation for specificity includes true negatives (students who do not self-report emotional risk and have school records that indicate no risk and are correctly not identified as at-risk by teachers) divided by the sum of true negatives and false positives (students who do not self-report emotional risk and have school records that indicate no risk but who are incorrectly identified as at-risk by teachers).

   Positive predictive value. Positive predictive value is defined as, "the proportion of examinees who are identified who actually need help" (Albers & Kettler, 2014, p. 123). The equation for positive predictive value includes true positives (students who self-report emotional risk and/or have school records that indicate academic risk and who are correctly identified by teachers) divided by the sum of true positives and false positives (students who are identified as at-risk by teachers, but the student does not self-report emotional risk and the student's school records no not indicate academic risk).

   Negative predictive value. Negative predictive value is defined as, "the proportion of examinees who are not identified who actually do not need help" (Albers & Kettler, 2014, p. 123). The equation for negative predictive value includes true negatives (students who do not self-report emotional risk and whose school records do not academic indicate risk and are correctly not identified as at-risk by teachers) divided by the sum of true negatives and false negatives (students who are not identified as at-risk by teachers but the decision is incorrect as the student self-reports emotional risk and/or has school records that indicate academic risk).

Research Questions

This study sought to answer the following research questions:

Research Question One. What is the accuracy of teacher nominations to identify ninth grade students in accelerated coursework who are at *academic* risk (defined by grade in class and GPA) in regards to:

    a. Sensitivity

    b. Specificity

    c. Positive predictive value

    d. Negative predictive value?

Research Question Two. What is the accuracy of teacher nominations to identify ninth grade students in accelerated coursework who are at *emotional* risk (defined by elevated levels of stress and low school satisfaction) in regards to:

    a. Sensitivity

    b. Specificity

    c. Positive predictive value

    d. Negative predictive value?

Research Question Three. Assuming imperfect sensitivity, do teachers differ in their likelihood of missing students who meet *academic* risk criteria but are not nominated, depending on demographic characteristics of the students who are missed, such as:

    a. Gender

    b. Race (White/Asian and Hispanic/African American/Multi-racial/Other)

    c. SES (measured by parent educational attainment)

    d. Academic risk severity (measured by grade in class/GPA)?

Research Question Four. Assuming imperfect sensitivity, do teachers differ in their likelihood of missing students who meet *emotional* risk criteria but are not nominated, depending on demographic characteristics of the students who are missed, specifically:

a. Gender

b. Race (White/Asian and Hispanic/African American/Multi-racial/Other)

c. SES (measured by parent educational attainment))

d. Academic risk severity (measured by grade in class/GPA)

e. Emotional risk type (perceived stress or school satisfaction)?

Research Question Five. Can a brief intervention improve teacher nominations to identify ninth grade students in accelerated coursework who are at *academic* risk (defined by grade in class and GPA) in regards to:

a. Sensitivity

b. Specificity

c. Positive predictive value

d. Negative predictive value?

Research Question Six. Can a brief intervention improve teacher nominations to identify ninth grade students in accelerated coursework who are at *emotional* risk (defined by elevated levels of stress or low school satisfaction) in regards to:

a. Sensitivity

b. Specificity

c. Positive predictive value

d. Negative predictive value?

Contributions to the Literature

This study sought to address several gaps in the literature. First, a literature review revealed no specialized screening procedures to identify at-risk AP/IB students in particular, let alone any investigation of the how well teachers are able to identify AP/IB students at-risk academically or emotionally. As AP/IB enrollment for students continues to increase, therein comes increased need to create and evaluate methods for identifying students at-risk in part to help connect students to needed services (College Board, 2014; IBO, 2017). Additionally, generally targets of screening procedures include psychopathology such as anxiety, depression, and not factors that predict student success such as perceived stress and school satisfaction. Teacher accuracy to identify students at-risk using these indicators has not been investigated in samples of students, either in general education or rigorous coursework. In regards to patterns among AP/IB students missed in teacher nomination procedures, there has been no research exploring whether student characteristics such as gender, race, SES, symptom severity, and symptom type differentiate students missed in teacher nomination procedures. In terms of trainings aimed to increase teacher accuracy, no research was found on the topic of incorporating feedback into teacher trainings to increase teachers' accuracy of identifying AP/IB students at-risk academically or emotionally. Incorporating performance feedback in teacher trainings has been limited to training undergraduate psychology students on rating students' classroom behavior, and not yet for training teachers how to better detect indicators such as academic well-being, perceived stress, or school satisfaction (Kilgus, et al., 2017). Given that asking teachers to identify at-risk students is arguably less time intense or intrusive as collecting self-report data from all students, methods to improve the accuracy of the more efficient procedure are likely to be appreciated by AP/IB stakeholders.

CHAPTER TWO:

REVIEW OF THE LITERATURE

This chapter summarizes the relevant literature in order to support the need for and importance of the current study's objectives. The review first describes the importance of prevention and early intervention services in school-based mental health services; universal screenings are one component of an effective multi-tiered system of support for school-based mental health services. The review next conceptualizes definition of student success, then further explores one population of students that is a traditionally underserved group in school-based mental health services (high-achieving students in accelerated courses, specifically Advanced Placement [AP] and International Baccalaureate [IB] classes). Next the needs of students in AP/IB classes are detailed, including a recent pilot study of a screening tool to identify AP/IB students who were in academic or emotional risk. Different methods of universal screenings are then reviewed, including a critical review of the advantages and disadvantages of each method. One screening method, teacher nomination, is focused on in particular. Next, the review contains an exploration the characteristics of students that are commonly missed in teacher nomination procedures. The literature review then examines factors that affect teacher nomination accuracy, and whether teachers can be trained to become more accurate in screening procedures. Finally, the literature review identifies current gaps in the literature, including teacher accuracy identifying students in accelerated curricula in emotional or academic risk, patterns in the demographic characteristics of students in accelerated curricula who are missed in teacher

15

nomination procedures, and whether teacher nomination accuracy can be improved in identifying students in accelerated curricula who are at-risk for diminished emotional and academic success.

Prevention and Early Intervention in School-based Mental Health Services

Multi-tiered system of supports (MTSS) refers to organized service delivery systems within schools intended to promote positive outcomes for students, not only social-emotionally, but also academically and behaviorally. As part of a MTSS system for social-emotional success, schools must focus supports at both prevention and intervention efforts, including early intervention, to prevent more severe problems and intervene at the earliest signs of risk (Christner, Forrest, Morley, & Weinstein, 2007). Without prevention and early intervention, schools have been seen historically as a system that "waits for [student] failure" (Adelman & Taylor, 2008, p. 32) before directing attention to students in need. Prevention and early intervention services also are an integral piece of population-based school mental health services, which focus on promoting student well-being, attempting to buffer students at-risk for future difficulties, and intervening early on for students already experiencing difficulties (Doll, Cummings, & Chapla, 2008).

The field of school psychology in particular has increasingly focused on directing efforts toward prevention. A literature review of seven major school psychology journals, comparing three five-year time periods spanning from 1998 to 2012, indicated a small but steady growth in articles addressing prevention services, from 52 articles (7% of published articles), to 87 (8% of published articles), to 101 articles (9%; Strein, Kuhn-McKearin, Finney, 2014). The growth in professional attention on evidence-based early intervention and prevention is not surprising, given the many benefits to facilitating prevention and early intervention services. First, research on prevention services such as school dropout or youth substance use has indicated a large return

on investment, suggesting it is cost-effective to intervene before problems occur rather than waiting for youth to require expensive and intensive treatments (Cooney, Kratochwill, & Small, 2010). Additionally, the broader psychology field has always argued that there will never be enough direct mental health providers (in school and community settings) to serve every youth and adult individually (Albee, 1968). For example, for one school-based mental health discipline, school psychologists, the 2010 National Association of School Psychologists (NASP) National Member Survey stated the average school psychologist to student ratio was 1:1,383, much higher than the NASP-recommended standard ratio of 1:1,000 (Castillo, Curtis, & Gelley, 2012). Prevention and early intervention can reduce the number of individuals who need further treatment, and can be provided at classwide, small group, and individual formats.

The National Institute of Mental Health's Workgroup on Mental Health Disorders Prevention Research (1994) conceptualizes prevention services into various levels of intensity of service and specialization to particular populations. Universal prevention, or universal prevention services, selective prevention, or prevention services for specific populations who has specific risk factors, and indicated prevention, or prevention services for even more at-risk populations who already are experiencing distress (Institute of Medicine, 1994). The targets of prevention and early intervention efforts should not only focus on eliminating the presence of psychopathology, but eliminating the many barriers to learning many students face every day (Adelman & Taylor, 1998). In this study, screening efforts are focused on to connect an underserved population, students in accelerated curricula, to selective evidence-based prevention and early intervention services to promote student success.

Defining Student Success

Student success can be defined in a myriad of ways, and can include different indicators. First, academic success for students is a commonly conceptualized way of defining how successful a student is functioning, particularly when considering the large recent focus on evaluating school and teacher performance based off of student scores on high-stakes achievement testing. Additionally, unique to students in high schools, a certain grade point average often gains student access to privileges such as eligibility for sports teams, honors societies, or consideration for valedictorian.

A more recently accepted definition of student success includes not only academic indicators but also emotional health, taking a multi-dimensional view of student success, acknowledging students are more than numbers on a school transcript. The importance of considering both academic and emotional indicators when determining success or risk for AP/IB students also aligns with Roeser, Eccles, and Sameroff's (2000) model of adolescents' psychosocial functioning in school. Emotional health indicators can include deficit-based constructs such as psychopathology or stress, or strength-based constructs such as the presence of high life satisfaction or school connectedness. Defining student emotional health as only an absence of mental health symptoms is not congruent with the views of a positive psychology framework, which emphasizes a continuous process of building on high abilities, strengths, and healthy institutions (Seligman & Csikszentmihalyi, 2000).

Although schools are arguably well-equipped to identify and provide additional supports to students who struggle *academically* as evidence through subpar course grades and GPAs, the role of schools in early identification and treatment of youth mental health is less established. Although mental health disorders in American youth are not uncommon (Merikangas et al.,

2010), the proportion of youth receiving treatment for their mental health concerns indicate room for improvement. A twelve-month follow up of the National Comorbidity Survey (Merikangas et al., 2011) found that only 45% of youth with diagnosed mental health disorders received any services in the last year (Costello et al., 2014). For youth who do receive treatment for mental health concerns, many receive these services within schools. The National Comorbidity Study found 23.6% of youth with mental health disorders received school-based treatment (Costello et al., 2014). Schools was the most likely setting for students to receive services, with estimates that only one out of every four youth with mental health disorders received services outside of school (Merikangas et al., 2010).

There are many benefits of school-based mental health services, not only for youth and families, but for society as well. School mental health promotion is complementary to schools' traditional focus on academic success, as a review of 23 school mental health intervention studies found 91% were associated with increases in academic indicators (Vidair et al., 2014). In particular, schools are poised to provide early and widespread mental health interventions (including prevention and screening services) due to their universal access to youth (Doll, Cummings, & Chapla, 2014). As opposed to community-based settings, where youth often are required to exhibit significant struggles before being referred to and receiving services, schools have the opportunity to identify, refer, and intervene early to prevent more severe outcomes later on (Doll, Cummings, & Chapla, 2014). School-based mental health services also do not contain the same barriers for families receiving community-based services, such as structural constraints (i.e., making and meeting appointment times) and perceptions about seeking mental health services (Owens et al., 2002). School-based services are also more cost-effective than services provided in community settings (Center for Mental Health in Schools, 2005).

Appropriate school-based mental health services are important for all children and adolescents, regardless of age, risk factors, or intensity of need, but certain populations are particularly important to target for mental health promotion. In terms of developmental stages, adolescence is an important chapter for increased monitoring and early intervention, as the National Comorbidity Study found that the risk for mental health concerns increases during adolescence (Merikangas et al., 2010).

Within adolescents, there are specific groups of students who have been traditionally underserved. One such population are high-achieving students in accelerated curricula, such as students in Advanced Placement classes or International Baccalaureate programs (AP/IB; Suldo et al., 2014). Both social-emotional research and applied practice has largely ignored this population, perhaps assuming their high academic abilities and same or better psychological wellness exempts them benefitting from further skill development and promotion (Suldo & Shaunessy-Dedrick, 2013). Ignoring the needs of high achieving students may limit their potential for later high outcomes. Further, research has also indicated high-achieving youth, particularly ones in AP/IB classes, have particular and unique risks for diminished academic and emotional success (Suldo & Shaunessy-Dedrick, 2013a).

Students in Accelerated Curricula

Teenagers in accelerated curricula are generally high-achieving and include gifted and non-gifted students. In terms of gifted youth, although there are various definitions and frameworks of what giftedness is, the federal definition of gifted, located in the Elementary and Secondary Education Act (1965), is defined as, "students, children, or youth who give evidence of high achievement capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services and activities not ordinarily

20

provided by the school in order to fully develop those capabilities." The U.S. Department of

Education's Office of Civil Rights estimates that about six percent of public school students are

enrolled in gifted and talented programs across the country (2013). For gifted students in

younger grades, schools often provide special classes, programs, and accommodations, while in

the high school years many are enrolled in rigorous, accelerated academic programs such as

Advanced Placement classes (AP) or International Baccalaureate (IB) programs. AP or IB

classes typically serve as the main source of 'gifted' services in secondary settings (Hertberg-

Davis, Callahan, & Kyberg, 2006).

A growing number of high schools provide accelerated curricular options for both gifted

and non-gifted students. During the 2010-2011 school year, 69% of all public schools reported

either offering AP classes or IB Programs (Thomas, Marken, Gray, & Lewis, 2013). Not only are

more schools now offering AP classes or IB programs, but more high-achieving students are

participating in these curricular options than in previous years. For AP classes, from 2006 to

2016 the number of AP exams administered doubled, from 2.3 million in 2006 to 4.7 million in

2016 (College Board, 2017). Similar upward trends have been seen in IB programs, with the

number of IB programs offered worldwide increasing by 39.3% between 2012 and 2017

(International Baccalaureate Organization [IBO], 2017). The student population taking AP/IB

classes is also becoming more diverse, with its makeup representing more students of different

ethnicities, socioeconomic status, language backgrounds, and academic background (Handwerk,

Tognatta, & Gitomer, 2008; McKillip & Mackey, 2013).

Research has explored many academic and social-emotional benefits for enrollment and

high performance in college-level classes. One large statewide database of 90,044 students in

Advanced Placement courses revealed students who take and pass AP exams were more likely to

receive higher scores on the American College Test (ACT), even when controlling for academic, socioeconomic, and demographic variables (Warne, Larsen, Anderson & Odasso, 2015). Sole participation alone has been associated with a greater likelihood of college attendance, with students who took one, two or three, or four or more AP exams being 171% more likely to attend college compared to students who took no AP exams (Chajewski, Mattern, & Shaw, 2011). The relationship between participating in AP classes and college participation was present even after controlling for student demographic, academic skills, and high-school level predictors (Chajewski, Mattern, & Shaw, 2011). Research also suggests unique benefits for students who participate in accelerated classes early on in high school (Longer, Conger, & Iatarola, 2012). Participating in rigorous courses in the first two years of high school is associated with increases in high school math test scores, graduation rates, and college participation. The academic benefits of rigorous coursework was even higher for students who were Hispanic, African American, and from low-SES backgrounds (Longer, Conger, & Iatarola, 2012). In a sample of African American students, participation in AP classes was associated with higher SAT scores, later enrollment in college, and high self-perceived abilities (McKillip & Mackey, 2013). Across all students, participation in AP exams was associated with higher senior year SAT scores (McKillip & Rawls, 2013).

The positive effects of participating in accelerated classes are also evident in post-secondary outcomes. In a sample of 24,941 high school students across four years who were matched demographically and geographically, students who took AP classes outperformed the non-AP group in several academic outcomes, such as college GPA and number of credits taken per semester (Murphy & Dodd, 2009). During college, students may also save money on college tuition if they are able to earn course credits for their AP and IB exam performance (Dougherty,

Mellor, & Jian, 2006). Students who participate in accelerated classes are more likely to graduate college (Shah, Dean, & Chen, 2010). Although the original intent of accelerated classes such as AP are to provide students with a more rigorous high school curriculum and better preparation for later post-secondary education options, some research challenges that participation in AP classes alone accurately predicts early college grades and retention (Klopfenstein & Thomas, 2009).

Research also suggests some emotional benefits of participating in accelerated classes. In a sample of high-achieving students, those who took AP classes were found to have higher satisfaction with their high school experience compared to similarly intellectually gifted youth who did not participate in AP classes (Bleske-Rechek, Lubinski, & Benbow, 2004). A qualitative study of students in AP and IB programs that explored the social-emotional implications of participating in accelerated curricula revealed students perceived multiple benefits of participating in accelerated curricula such as strong relationships with others in their programs and classes, feeling proud of the hard work involved in taking accelerated courses, and a better class climate than general education classes (Foust, Hertberg-Davis, Callahan, 2009). But, students also reported stress due to the academic workload, and exhaustion from sacrificing sleep to complete coursework demands. Students in accelerated curricula also have reported feeling more prepared for college after their high school experiences (Taylor & Porath, 2006). The defining characteristics of two common curricular options for high-achieving students, Advanced Placement (AP) and International Baccalaureate (IB), are reviewed below.

Advanced Placement classes. Advanced Placement (AP) classes began to be offered to high-achieving students in 1956, in order to provide students with advanced academic skills a more rigorous college-level curriculum (Hertberg-Davis & Callahan, 2008). As of 2017, there

23

are 38 different AP classes and exams students can choose from, including classes such as AP Research, AP Human Geography, AP Physics 1 and 2, and AP Spanish Language and Culture (College Board, 2017). In 2016, there were more than two million student participating in AP classes and almost five million AP exams were taken (College Board, 2016). Most students in AP classes are not required to enroll or take a certain number or type of classes (as opposed to the IB Program), but are allowed to choose AP classes based on their high school's availability, sometimes referred to as a 'cafeteria-like' approach. At the end of each school year, students in AP classes may either be required to or may elect to take the AP exam for a specific course. Students are permitted to take AP end of the year exams, even if they did not enroll in the course. AP course exams are graded by groups of AP teachers and college faculty with expertise in the subject area(s) (Ewing, 2006). After exams are scored, many universities accept certain passing grades (typically a score of "3" or higher on a scale of 1 to 5) on AP exams for college credit. In 2016, 4,154 universities (both in the United States and internationally) accepted AP exam scores for credits (College Board, 2016).

International Baccalaureate program. The International Baccalaureate (IB) Diploma Programme (DP) was first offered to junior and senior high school students in the late 1960s. As of 2017, there were 6,068 IB programs offered across the globe, with 57% of IB programs in the Americas (IBO, 2017). The IB Diploma Programme program similarly emphasizes depth of knowledge, similar to the focus of AP, but also prioritizes metacognitive thinking, global understanding, interpersonal and communication skills, and community service (IBO, 2012a). Although students do not enter the IB Diploma Programme until their junior year, schools with an IB Diploma Programme can offer a pre-IB curriculum for 9th and 10th grades who later enter the program in 11th grade (Suldo et al., 2008), or participate in the Middle Years Programme.

The IB Diploma Programme includes more requirements all students must complete, rather than the AP 'cafeteria' type approach. Common elements of the IB Diploma Programme include the extended essay (an independent research project), Theory of Knowledge (an interdisciplinary course), required experiences outside of IB classes (called Creativity, Action, Service), and one class from each core subject area. Once students meet program requirements and pass end-of course exams, students can earn an IB Diploma upon graduation from high school (IBO, 2012b). Students who earn the IB Diploma may also be eligible to receive college credits for their participation in the IB program, depending on university policies.

Defining student success for high-achieving students. What makes a student 'successful' can be conceptualized in a variety of ways. Considering the academically-focused nature of accelerated classes, and due to one of the main missions of schools to foster students' academic knowledge and skills, success for AP/IB students is partly explained by academic outcomes, such as Grade Point Average (GPA) and end-of-course AP or IB exams. But, emerging definitions of student success in (and out) AP/IB classes and programs argues emotional variables such as quality of life indicators and symptoms of psychopathology should be considered when conceptualizing success (Suldo, Shaunessy-Dedrick, et al., 2018). The current study's conceptualization of AP/IB student success is consistent with Suldo, Shaunessy-Dedrick, and colleagues (2018) work, defining success as both academic (specifically, grade in class and GPA) and variables that evidenced relationships with emotional indicators in prior research, specifically, perceived stress (Suldo, Shaunessy, & Hardesty, 2008) and school satisfaction (Suldo, Shaunessy-Dedrick, et al., 2018).

Risk factors for high achieving students. Although some research indicates high achieving students have better adjustment than students in regular general education curricula

(Martin, Burns, & Schonlau, 2010), other research indicates this population has unique risk factors to target for early intervention and prevention (Neihart, Reis, Robinson, & Moon, 2002). In terms of mental health outcomes, meta-analyses have revealed gifted youth self-report less anxiety and depression compared to non-gifted peers (Martin, Burns, & Schonlau, 2010). Other literature reviews conclude high-achieving students do *not* experience more social-emotional problems than students in general education, but face unique stressors due to their academic demands (Neihart et al., 2002; Suldo, Shaunessy, & Hardesty, 2008; Suldo & Shaunessy-Dedrick, 2013a). Neihart et al. (2002) explains high-achieving youth face stressors such as those related to their high academic abilities, which puts students at risk for underachievement and maladaptive perfectionism, and uneven development compared to similarly aged peers. Additionally, students who are twice exceptional (students with gifted or high-achieving status coupled with another exceptionality) can experience added stressors. The following sections include a detailed review of several studies examining the emotional health and risk factors of students in accelerated curricula to provide a rationale for the creation of specialized screening systems for this student population, particularly focusing on perceived stress and school satisfaction as emotional risk indicators.

  Stress. Perhaps the highest risk factor faced by AP/IB students is the heightened overall perceived stress levels observed in this group compared to students in general education (Suldo, Shaunessy, & Hardesty, 2008; Suldo & Shaunessy-Dedrick, 2013). Heightened stress in adolescence is related to a host of negative outcomes, such as increased risk for using ineffective coping strategies when dealing with stressors. In turn, ineffective coping is associated with increased risk for psychopathology (Compas, Orosan, & Grant, 1993). Similar research has also demonstrated a relationship between stress and internalizing symptoms (Grant et al., 2004).

26

Feld and Shusterman (2015) explored the relationships among physical and psychological health and well-being, stress and attitudes towards school, and use of coping strategies when confronted with stress in a sample of 333 high-achieving youth in rigorous high school curriculum. Participants in competitive college preparatory high school programs filled out online surveys measuring general stress levels, life satisfaction, physical symptoms of stress, attitudes towards school (using the School Attitude Assessment Survey-Revised (SAAS-R; McCoach & Siegle, 2003), and coping strategies. Results showed students in the rigorous high school curricula reported many intense symptoms of stress, such as "constant fatigue, inability to being work and lack of concentration almost daily due to stress" (Feld & Shusterman, 2015, p. 40). About half of the sample also reported physiological symptoms resulting from high levels of stress, such as fatigue and other somatic concerns. Relationships among stress and other emotional health indicators revealed that as stress increased, life satisfaction decreased. Negative relationships were seen with stress, with increasing levels of stress related to lower academic self-perception, but higher goal valuation, motivation, and self-regulation. Stress was not related to academic indicators such as GPA (Feld & Shusterman, 2015). Similar research from a population of students in AP/IB programs found students with higher levels of perceived stress were also are more likely to have more school absences and lower grades (Suldo, Dedrick, Shaunessy-Dedrick, Roth, & Ferron, 2015).

When comparing levels of stress across general education and accelerated students, some research indicates the stress AP/IB students experience is higher than general education students. Early research of students by Suldo, Shaunessy, and Hardesty (2008) in one IB program explored the relationships among stress, coping strategies, and psychopathology. Student participants included 139 students in the IB program and 168 students from the general education curriculum

27

in the same high school in a southeastern state. Students reported perceived stress levels using the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983), coping behaviors using the Adolescent Coping Orientation for Problem Experiences (ACOPE; Patterson & McCubbin, 1987), psychopathology using the Youth Self-Report (YRS; Achenbach & Rescorla, 2001), life satisfaction using the Students' Life Satisfaction Scale (SLSS; Huebner, 1991), and self-efficacy using the Self-Efficacy Questionnaire for Children (SEQ-C; Muris, 2001). Cumulative grade point averages (GPA) were obtained from school records. IB students reported significantly more perceived stress compared to students in general education classes. However, IB students had higher GPAs than students in general education, showing that the higher levels of perceived stress in the IB sample was not coupled with negative academic outcomes. Nevertheless, as perceived stress increased in IB students, students tended to have worse mental health outcomes (e.g., $r = .$-.63 between perceived stress and life satisfaction). Coping strategies explained a sizable amount of the variance in mental health outcomes in IB students, but less of the variance in academic outcomes. Therefore, coping behaviors may be a pertinent target for intervention for high-achieving students, due to the strong relationship between coping and emotional well-being. Limitations of the study included the low generalizability of findings, as it employed a convenience sample from only one high school and examined a cross-section of students across all grade levels at the same time (Suldo, Shaunessy, & Hardesty, 2008).

To explore whether their early (2008) work extended to a larger sample size and students in both AP classes and IB programs, Suldo and Shaunessy-Dedrick (2013a) conducted a similar study in four high schools, with a cross-sectional sample of 480 high school students. Each participating high school offered the IB program, AP classes, and general education classes. Students completed measures related to personality styles, social support and conflict, school

28

climate, and emotional health, such as the PSS, the YSR, the Multidimensional Student Life

Satisfaction Scale (MSLSS; Huebner, 1994), and the Multidimensional Anxiety Scale for

Children (MASC; March et al., 1997). Results indicated students in accelerated classes reported

more perceived stress than students in general education, even after statistically controlling for

other potential influences on stress (e.g., family SES, personality characteristics). Even though

AP/IB students reported more perceived stress, those students' psychological functioning was

found to be the same or higher than their peers in general education (Suldo & Shaunessy, 2013a).

In regards to time periods in an AP/IB student's high school experience feature changes

in perceived stress levels, and therefore pose risk, the transition from middle school to high

school is often viewed as a challenging period in development (Roeser, Ecceles, & Freedman-

Doan, 1999). Suldo and Shaunessy-Dedrick (2013b) investigated whether IB students' higher

perceived levels of stress is present before starting the IB program (at the end of 8th grade), or

whether increases in stress are associated with participation in accelerated curricula. The sample

contained 134 students, either entering IB programs or general education classes, across three

public high schools (each high school contained an IB program, and were compared to a sample

of students in general education from one of the participating high schools). Students completed

the PSS, SLSS, YSR, and the MASC once during the summer before entering their ninth grade

year in high school, and once halfway through their first year of high school. When comparing

the stress levels of IB and general education students, students' stress levels in IB and general

education classes were similar in the summer before ninth grade. By the winter data collection,

IB students' perceived stress levels were higher than students in general education. Although IB

students' stress levels were higher than general education students, mean levels of life

satisfaction, psychopathology, and social anxiety during 9th grade not differ between groups of

students in accelerated and non-accelerated classes. Suldo and Shaunessy-Dedrick (2013b) concluded although entering the IB program as a ninth grader is associated with higher levels of perceived stress which can be seen in the first few months of high school, transitioning to accelerated curricula is not associated with decreases in emotional outcomes. However, due to the sharp and sudden changes in stress levels for AP/IB students compared to students in general education classes, ninth grade students in accelerated curricula may be considered an especially at-risk population to target in screening and intervention, and are therefore the population of interest in the current study. In addition, the perceived stress indicator may be a highly relevant tool for study and screening in this population, as other emotional indicators were not sensitive to differences across students in the IB program and in general education classes.

In addition to differences in mean levels of perceived stress observed among students in AP/IB programs, the types of stressors these students experience is different. Suldo, Shaunessy, Thalji, Michalowski, and Shaffer (2009) explored sources of stress across students in an IB program and students in general education. The sample contained 162 students in an IB program and 157 students in the general education curriculum. Data collection occurred at two time points, where at Time 1 students took part in focus groups surrounding the types of stressors the student experience. At Time 2, students filled out various measures of emotional health, including the YSR and the SLSS. Students at Time 2 also filled out the Sources of Stress Inventory (SOSI), created by project team members from the focus group data. When looking at the different sources of stress, students in the IB program reported the main source of their stress involved academic requirements. The comparison sample of students in the general education curriculum reported more frequent stressors related to parent-child relationship factors, academic struggles, conflict within family, peer relationships, role transitions, and societal problems.

30

Additionally, students in IB who reported higher levels of stress in the domains of academic requirements, parent-child relationships, stressful adolescent events, peer relations, problems within family, and academic struggles tended to also report more symptoms of psychopathology and worse academic outcomes (Suldo, et al., 2009).

In sum, although there is some evidence that AP/IB students perceive more stress than general education students and higher levels of perceived stress are linked to worse academic and emotional outcomes (Feld & Shusterman, 2015; Suldo, et al., 2015; Suldo, et al., 2009; Suldo, Shaunessy, & Hardesty, 2008), mean levels of outcomes are not worse for AP/IB students. In fact, comparisons of group averages indicate AP/IB students have the same or superior emotional health as peers in general education (Suldo & Shaunessy, 2013a).

Student engagement. Another factor associated with AP/IB student outcomes is student engagement. Student engagement can be defined in several ways, but is seen as a multidimensional concept, commonly considered to have at least three subtypes: behavioral (such as participating in extracurricular activities, school events, and on-task classroom behavior), affective (such as having positive emotions at school, and feeling like one belongs to school and teachers), and cognitive (such as setting goals, self-regulation, and problem-solving to meet goals; Reschly & Christenson, 2012). Although each type of engagement is associated with different behaviors and feelings, some types have been found to be related. For example, Voelkl (2012) suggests affective engagement (and not academic, social, or cognitive engagement) may help foster behavioral engagement at school. Although affective engagement is seen as somewhat related to motivation, it is different as it is conceptualized as a "driving force for a specific set of school-related behaviors and interacts with those behaviors throughout the school years" (Voelkl, 2012, p. 5).

31

Cognitive, behavioral, and affective engagement have been found to be related to AP/IB students' success, both in terms of academic and emotional outcomes. Suldo, Shaunessy-Dedrick, et al. (2018) conducted a study to identify factors and qualities related to AP/IB students' emotional and academic success. The sample consisted of 2379 students from 10 IB programs and 10 AP programs across a southeastern state. The student population was diverse in terms of student grade level (approximately 25% of students from grade 9, 27.5% from grade 10, 24.9% grade 11, and 22.6% grade 12), gender (37.8% male), socioeconomic status (27.7% free/reduced price lunch), and race/ethnicity (49.4% Caucasian; 13.5% Asian; 12.3% Hispanic; 11.8% African American; 13.0% multiracial). Students completed various measures related to cognitive, behavioral, and affective engagement, perceived support from school and peers, family factors, coping behaviors, stressors, eustress, and emotional wellness (such as global life satisfaction, psychopathology, and academic burnout). Student records were obtained to determine GPA and performance on end of the year AP/IB exams. Results examining the levels of emotional and academic health across the high-achieving population supported the notion that AP/IB students are a group with typical need for school-based mental health services, as almost a third of AP/IB students were found to have low emotional well-being (i.e., low life satisfaction, high psychopathology, or high academic burnout) or low academic well-being (i.e., < 3.0 GPA, less than passing scores on AP/IB end of the course exams). Student-level factors associated with AP/IB student success (emotionally and academically) included adaptive coping behaviors, eustress, motivation, and affective and cognitive forms of engagement (Suldo, Shaunessy-Dedrick, et al., 2018). Higher affective engagement, as measured through scales assessing students' belongingness and connections to their school, AP/IB program, and AP/IB teachers, predicted high levels of all mental health outcomes, such as higher life satisfaction, less

32

psychopathology, and less school burnout, but was not as strongly associated with academic outcomes such as GPA and AP/IB exam scores.

To explore relationships between satisfaction with aspects of the classroom environment (an aspect of affective engagement) and academic indicators, Rita and Martin-Dunlop (2011) conducted a study in one large public high school with 146 gifted and 115 non-gifted 10th grade biology students. Students completed the What Is Happening in this Class? (WIHIC; Fraser, Fisher, & McRobbie, 1996) scale, which measures concepts such as teacher support, involvement, task orientation, cooperation, equity, and student cohesiveness. Interviews were also conducted with eight randomly selected gifted students. When exploring the relationship between satisfaction in current learning settings and academic achievement, higher school placement satisfaction (e.g., being pleased to be in the student's current class or academic program) was found to be related to higher scores on a standardized biology test. In general, gifted high school students were also found to have a higher satisfaction with their current learning environment than non-gifted students (Rita & Martin-Dunlop, 2011). The current study focuses on affective engagement as one emotional risk factor for AP/IB students.

Mental health supports for high achieving students. Although AP/IB students are a population with unique risks, there are few specialized supports geared towards the specific risk factors of AP/IB youth. As AP/IB students exist within a larger schoolwide context, which usually includes more students not in accelerated courses than who are enrolled in AP/IB, larger schoolwide characteristics such as existing databases, early warning systems, school-wide screenings, or initiatives such as Social-Emotional Learning (SEL) or Positive Behavior Interventions and Supports (PBIS) are not typically specialized for this population. Larger schoolwide initiatives or programs may interact or create barriers for AP/IB students' emotional

and academic success. Overall, AP/IB youth are considered to be underserved in school-based mental health resources (Suldo et al., 2014), creating a need for mental health supports for this population to be developed and implemented. A literature review did not indicate any published, evidence-based mental health supports for high-achieving students. One emerging set of social-emotional supports under development is the universal Advancing Coping and Engagement for AP/IB Student Success intervention (ACE), coupled with the Motivation, Assessment, and Planning selective intervention (MAP; Suldo, 2015).

The ACE Program is a universal classwide intervention designed for freshman students in AP classes or in IB programs to promote adaptive coping behaviors, reduce ineffective coping behaviors, and promote school connectedness (Suldo et al., 2015). ACE is designed to be implemented for 9th grade students in their first semester of high school to build adaptive skills pertinent to coping and engagement in part to prevent future problems later in their accelerated curricula. The program includes ten core and two optional booster sessions (optimally to be implemented weekly during one high school class period), focusing on malleable, evidence-based factors associated with both emotional and academic success in AP/IB students (Suldo, 2015). Interventionists have included graduate research assistants and faculty members within the University of South Florida (USF) who completed training coordinated by the project Principal Investigator (PI: Suldo); classroom teachers also complete trainings and contribute to the student sessions as co-interventionists. The initial modules of the ACE Program cover an introduction to stress and the AP/IB experience (module 1) and coping and engagement factors associated with AP/IB student success (module 2). Next, the program turns to promoting school connectedness, with sessions covering school pride (module 3), positive connections with teachers, students, and school personnel (module 4), and involvement in extracurricular activities

(module 5). The next weeks of the ACE core modules cover adaptive coping strategies for dealing with academic demands, such as time and task management (modules 6 & 7), seeking support from home, school, and spiritual communities (module 8), positive thinking and relaxation (module 9), and limiting ineffective coping behaviors such as withdrawing and relying on self, skipping school, taking shortcuts, and using illicit drugs (module 10). Outside of the ten core modules, there are two supplemental booster modules related to promoting eustress (module 11) and identifying and developing students' strengths, values, and goals for the future (module 12). The ACE Program also contains a complementary 12-week teacher training program to prepare classroom educators to serve as co-interventionists as well as reinforce the content taught to students, and a two session program for parents of AP/IB students to provide information pertinent to ecological factors that affect AP/IB student success (Suldo, 2015).

For AP/IB students in need of further supports beyond the universal ACE program, the USF research team developed the Motivation, Assessment, and Planning (MAP) Intervention. The MAP intervention is intended for provision to at-risk 9th grade students, or students who self-refer and request additional help, during the second semester of their first year of high school. The MAP Intervention uses motivational interviewing techniques (Miller & Rollnick, 2012) to reveal ambivalence surrounding change and evoke positive change for students. Before meeting with a MAP Interventionist (trained research staff or school-based mental health providers), student participants complete an assessment of their current coping and engagement behaviors. Their data is then compared to a large, representative sample of 2379 AP/IB students used in previous research (Suldo, Shaunessy-Dedrick, et al., 2018). Students then meet with a MAP Interventionist for one or two sessions, each session designed to last approximately one class period each. During the first session, the student and coach first build rapport, identifying

and discussing the student's strengths, values, and goals for the future, and then review the students' assessment data and their strengths and areas for improvement in their coping and engagement practices. The student selects one or two targets to focus on for improvements, with the coach selectively attending to the students' reasons for change. Finally, the coach and student collaboratively create an action plan. If the student decides to meet for a second session with the MAP Interventionist, the student's original action plan is reviewed and either revised or set aside (to afford focus on a new target) for the students' continued success in AP/IB. Both the ACE and MAP Intervention programs are in early stages of development and piloting; a small-scale randomized control trial in underway (2017-18 school year) in 15 schools (8 in the treatment condition, 7 in a delayed-intervention control condition). Therefore, the efficacy of the ACE and MAP supports for AP/IB students has yet to be demonstrated, but will continue to be evaluated. Although impact on student outcomes are not yet established, the intervention is notable in that it is the first of its kind to be tailored to the specific factors associated with student success for youth in AP/IB classes. One focus of this line of research is how to efficiently and effectively identify students for the MAP intervention relatively early in high school (i.e., mid first year) rather than waiting for dire indicators of challenges, such as failing course grades, removal from participation in AP/IB courses, and/or the onset of significant stress and associated mental health problems. To that end, the next section reviews options for universal screening as a proactive way to identify at-risk students.

Universal Screenings

As part of any comprehensive school-based mental health delivery model, the President's New Freedom Commission on Mental Health (2003) proposed expansion of proactive screening of students experiencing mental health problems. Universal screenings, or the systematic

collection of data on student performance, "are designed to identify those students who are currently asymptomatic but who will experience difficulties at some time in the future" (Albers & Kettler, 2014, p. 121)". In sum, screenings are commonly used to identify students in need of further supports within schools, either because students are at-risk for experiencing later concerns (academically or behaviorally) or are already suffering from current impairments (Albers & Kettler, 2014). Screenings are seen as an essential school-wide practice to promote social-emotional success (Kern et al., 2017), and can connect students early on to needed interventions, which has been found to prevent worse outcomes and boost success (Lane & Menzies, 2003).

Kilgus and Eklund (2016) conceptualized the purpose of universal screenings to extend beyond a means of identifying individual students at-risk for needed supports, to also involve a data source of school-wide functioning, helping inform a school's "targets of multi-tiered systems of support," and "how school resources and educator time should be allocated to meet student needs efficiently and effectively" (p.1). Although the benefits of universal screening are well-established, only about 12% of schools implement behavioral screening in K-12 schools (Bruhn, Woods-Grovers, & Huggle, 2014). Forms of universal screening methods include: universal rating scales (rating forms given to relevant populations of interest, such as teachers and students); information from school records (e.g., office discipline referrals); referrals made by concerned parents, teachers, or students; structured nomination procedures from school-based mental health professionals; and teacher nomination methods. Teacher nominations are one screening procedure in which teachers review all of the students in his or her class and consider across all of their students who are at risk, nominating students who meet criteria for needed services. Multiple gating screening systems often include several of these screening methods in

combination. The following sections describe each of these methods in greater detail, after a note on procedures used to evaluate the accuracy of various screening methods.

Evaluating a universal screening methods' effectiveness. To evaluate different properties of universal screeners, conditional probability indices can be used to describe strengths and weaknesses of a given method (Albers & Kettler, 2014). The conditional probability indices of sensitivity and specificity are frequently reported in school-based research evaluating universal screenings (Albers & Kettler, 2014). Positive predictive value (PPV) and negative predictive value (NPV) are two more recently-reported indices in school-based screening research, but are frequently used in public health screening research.

Sensitivity is a conditional probability value calculated by taking the true positives (students who both self-report symptoms and are identified by screener) over the sum of true positives and false negatives (students who self-report symptoms but are not identified by screener; Green & Zar, 1989). Positive predictive value (PPV), a similar ratio, is calculated by taking the true positives over the sum of true positives and false positives (students who are identified by the screener but do not self-report symptoms). As opposed to sensitivity, which considers the number of true positives from the total sample of students with symptoms, PPV focuses on the number of true positives from the total sample of students who are nominated, and takes into account students who are inaccurately identified (Albers & Kettler, 2014).

Specificity is a conditional probability value calculated by taking the number of true negatives (students who both do not self-report symptoms and also are not identified by the screener) over the sum of true negatives and false positives (students who are identified by the screener for being at-risk, but not are not truly at-risk). Negative predictive value (NPV) is a complementary calculation to specificity. It is calculated by taking the true negatives over the

sum of true negatives and false negatives (students who are not identified by the screener, but in reality self-report symptoms of risk). Specificity considers the number of true negatives from the total sample of students who do not have risk, while NPV focuses on the number of true negatives from the total sample of students who are not identified as having risk (Green & Zar, 1989). The current study proposes to examine the conditional probability indices of sensitivity, specificity, PPV, and NPV to answer the research questions of interest on the accuracy of AP/IB teachers identifying ninth grade students at-risk emotionally and/or academically.

Universal rating scales. Universal rating scales require informants such as teachers or students to fill out a specified rating scale(s). Rating scales may vary from measuring psychopathology, to targets reflecting positive mental health indicators (e.g., life satisfaction) or factors that predict student outcomes (e.g., school belonging). Rating scales have been proposed to be a more preferred universal screening method for high school teachers to participate in compared to methods such as teacher referral, because rating scales are more systematic (Kamphaus, DiStefano, Dowdy, Eklund, & Dunn, 2010).

A major choice point in selection of rating scales in universal screening involves who is most logical and appropriate to serve as the informant/rater. Unfortunately, research suggests low correspondence between child, parent, and teacher report of mental health problems (Edelbrock, Costello, Dulcan, & Kala, 1986; Kolko & Kazdin, 1993). One study by Kolko and Kazdin (1993) included 98 non-clinical community youth and 64 clinical patients ranging in age from 6 to 13, their mothers, and teachers. Mothers completed the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983), teachers completed the Teacher Report Form (TRF; Achenbach & Edelbrock, 1983), and youth completed the YSR. When looking at relationships between informants, parent and teacher ratings were not significantly different, but other relationships

39

between students-parents and students-teachers were significantly different. Ratings across child, parent, and teacher report were higher for externalizing symptoms and for children that were community controls (students who did not have signs of mental health problems). In screening procedures in high schools, student self-report has been urged as the most logical informant due to several factors, such as more ability to accurately report internalizing symptoms and increased feasibility (Levitt et al., 2007).

Teacher universal rating scale data in the fall has also been found to predict later reading scores, office disciplinary referrals, and absences in the spring (Eklund et al., 2016). Potential drawbacks of rating scales include costs related to the use of copyrighted rating scales and time scoring, entering, and organizing data.

Compared to other screening methods incorporating data or influence from teachers (such as nomination, observations, and school records), teacher rating scales have been found to identify more students as having mental health risk. Miller and colleagues (2015) compared four screening methods: Direct Behavior Rating – Single Item Scales (DBR-SIS), Social Skills Improvement System- Performance Screening Guide (SSiS-PSG; Elliott & Gresham, 2007), office discipline referrals (ODRs), and teacher nomination methods, to an established criterion teacher rating scale, the Behavioral and Emotional Screening System- Teacher Form (BESS; Kamphaus & Reynolds, 2007). Of the screening methods compared, DBR-SIS, SSiS-PSG, and BESS are all considered rating scales. DBR-SIS is a screening tool that combines systematic direct observations and teacher ratings on a Likert-type scale, and consists of a teacher observing a target student for a predetermined amount of time, then rating a student on certain operational definitions such as *academic engagement* or *disruptive behavior* (Riley-Tillman, Chafouleas, Sassu, Chanese, & Glazer, 2008). The SSiS-PSG is a teacher-report rating scale of students'

academic, social, or behavior skills (Elliott & Gresham, 2007). Teacher participants were recruited from 20 different schools across three geographic sites, and taught either 1st, 2nd, 4th, 5th, 7th, or 8th grade. Ten students from every participating class were randomly selected for participation. Parents received notification of the screening and were allowed to opt their child out of screening upon request. Teachers completed the different screening systems on the sample of students in their class, at three time points across one school year: once each in fall, winter, and spring. In total, ratings were collected from 1974 students. Results indicated the three teacher rating scales (DBR-SIS, BESS, and SSiS) all identified more students compared to the less standardized methods (ODRs and nominations). Thus, screening procedures that do not ask teachers to rate students on predetermined symptom criteria, and are more up to teacher subjective interpretation, such as teacher nomination and ODRs, may catch fewer students. Rates of identification varied substantially per identification method—teacher nomination identified only 5% of students as at-risk, while DBR-SIS identified 36% to 39% of students as at-risk.

When comparing universal rating scales to traditional school referral methods, such as referring a child for consideration by a child study team, the student had already met eligibility for special education, or already had been referred for an intervention, rating scales were found to 'catch' more students at-risk (Eklund & Dowdy, 2014). One study compared referral methods (defined in the study as student had been referred to participate in a child study team, was receiving special education services, or participation in other intervention services) to students identified by teacher participants filling out the BESS-Teacher Form. School referrals apparently missed 54% of students identified by teachers on the BESS, indicating that far more students are likely in need of supplemental supports than are actually provided them. Patterns among students missed by traditional school referrals included higher school grades, suggesting that high-

41

achieving students may be particularly likely to fly under the radar when teachers are asked to refer potentially needy students for supplemental supports. Overall, Eklund and Dowdy (2014) suggested use of teacher rating scales as a screening mechanism may overcome biases existent in referral methods, such as halo biases rooted in students' high academic achievement.

Although most rating scales used in universal screenings typically measure levels of psychopathology exhibited by students, a complete mental health approach yields screenings to prioritize detecting levels of both psychopathology and wellness in students. One such indicator of complete mental health is school belonging. Moffa, Dowdy, and Furlong (2016) conducted a "complete mental health screening" (p. 16) in one California public high school at two time points with a sample of 1159 youth. At Time 1, the screening measure(s) completed by students included the Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS; Seligson, Huebner, & Valois, 2003), 10 selected items from the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997), and five items from the School Satisfaction subscale of the MSLSS (the 3 reverse-scored items from the complete 8-item School Satisfaction subscale were omitted). Cross-sectional analyses at Time 1 demonstrated school belonging differentiated groups of students with low and high global life satisfaction, but did not differentiate groups of students with high and low levels of psychopathology. One year later, at Time 2, students completed the Social Emotional Health Survey- Secondary (SEHS; Furlong, You, Renshaw, Smith & O'Malley, 2014) and a seven-item scale designed by study researchers targeted at measuring anxiety and depression symptoms. Life satisfaction and psychopathology explained 27% of social-emotional well-being one year later, but when school belonging was added, only an additional 2% of variability was explaining, summing to 29% of the total later variability. Although including school-belonging in the screening did add to later explanations of wellness,

Moffa, Dowdy, and Furlong (2016) concluded that it did not contribute statistically meaningful information during the screening/identification process.

Although students level of school belonging did not significantly aid in determining later risk among the aforementioned sample of students in general education, school connectedness or school satisfaction has been identified as a predictor of salient outcomes for high-achieving youth (Suldo et al., 2017), Therefore, school belonging or school satisfaction may be an important indicator to screen for in the AP/IB population, as a primary salient precursor to later functioning or as an alternative target to more controversial symptom-focused constructs (e.g., of psychopathology).

Review of school records. Systematic consideration of all students (screening) using school records makes use of already-collected data sources- such as grades, attendance, or discipline data to determine whether a student may be in need of further supports. Reviewing school records is one of the least invasive screening methods, and does not require students or teachers to spend time during the school day to fill out nomination forms or rating scales. Reviewing archival school record data is a particularly cost-effective screening method when compared to the price of rating scales and time involved in collecting, scoring, and analyzing data from novel sources (Kuo et al, 2009).

One particular data source commonly used by schools to screen for students exhibiting signs of mental health risk is office discipline referrals (ODRs; McIntosh, Campbell, Carter, & Zumbo, 2009). Office discipline referrals have been found to predict both later ODR's (Predy et al., 2014) and disruptive behavior (Pas, Bradshaw, & Mitchell, 2011), but have not been found to be a viable tool for identifying students with internalizing concerns and will 'miss' students showing signs of anxiety and depression (Severson et al., 2007). One review of 28 studies

43

studying the utility of ODRs in school-based screening found ODRs were three times more likely to identify externalizing behaviors than internalizing (Bruhn, Lane, & Hirsch, 2013).

Screening using school records can vary from using only one source of data or multiple pieces of data to create risk categories. Using data sources such as grades, attendance, suspensions, and student demographic information, Kuo, Stoep, Hertig, Grupp, and McCauley (2013) investigated whether using multiple sources of school data could predict students' depression symptoms as students reported on the Moods and Feelings Questionnaire (MFQ; Angold & Costello, 1987). Results from a logistic regression analysis found a positive predictive value of 71%, but a high miss rate of 50-75% and also a high false positive rate of 20%. Overall, Kuo et al., (2013) suggested using multiple sources of school data may be a better tool to inform later screening and assessment gates, and not to use alone to identify students at-risk for depression. Overall, school records may be informative in a multi-source, multi-method screening system, but the use of certain data sources along may lead to the underidentification of students with internalizing symptoms. Additionally, because students have to exhibit significant enough signs of emotional distress before being detected (by issuing a referral) and connected to services, prevention and early intervention services may be limited once students are identified.

Student, teacher, and parent referral. Relying on concerned students, teachers, and parents to refer at-risk students is a non-time intensive, commonly existing method for identifying at-risk students within schools. Referral screening methods make use of natural communication patterns between homes and schools, student peer groups, teachers and school-based mental health professionals, and relationships within the school building, but have not been found to be a particularly proactive or accurate screening method.

Regarding parents' ability to accurately refer his or her child for mental health services, parent and family stress and low parent-child communication may both detrimentally affect a parent's ability to refer (Kolko & Kazdin, 1993; Logan & King, 2001). Other barriers such as the stigma surrounding mental health symptoms may also cause other barriers for either students or parents to refer youth in need to mental health services (President's New Freedom Commission for Mental Health, 2001). Another factor important to consider when evaluating parent referral as an independent screening method is that many parents themselves may not see schools as a mental health provider, and be more likely to refer their child to their pediatrician or other community-based services (Shanley, Reid, & Evans, 2008). In one sample of parents who had referred their child for mental health services, 40% of parents referred their children to physicians first, and only 22% of parents referred their children to school-based mental health services first (Shanley, Reid, & Evans, 2008).

Student referral entails students referring themselves or peers to school-based mental health professionals, typically by submitting a counseling written request or by visiting mental health staff within the school building if a student is in crisis. Although student self-referral is easily implemented and sometimes naturally occurs within the school day, student referral as a screening method by itself faces many barriers. A review of 15 qualitative and 7 quantitative studies of help-seeking in youth revealed multiple barriers that prevent youth from referring themselves or others for mental health supports (Gulliver, Griffiths, & Christensen, 2010). Barriers included: mental health stigma, embarrassment, little knowledge of mental health symptoms, and a desire to rely on themselves. Adolescents were more likely to be willing to seek help if they had past successful experiences and social support urging the young person to seek help (Gulliver, Griffiths, & Christensen, 2010). Other studies corroborate these findings; many

45

youth are hesitant to refer themselves to appropriate personnel or psychologists (Dubow, Lovko, & Kausch, 1990; Raviv, Raviv, Vago-Gefen, & Fink, 2009).

The relative benefits and risks of relying on teachers to refer/identify students with mental health risk are similar to student and parent referral. As the adults with the most student contact compared to any other school personnel, the teacher role can easily lend itself to referring students in-need to mental health services. Teacher referral is also not as expensive as more systematic methods such as rating scales or multiple gating procedures. However, teacher referral has been found to be heavily affected by the type of student presenting concern. One study evaluating influences on teacher referral and teachers' previous referral behaviors found teachers were more likely to refer students with externalizing concerns compared to those with internalizing problems, even while acknowledging both externalizing and internalizing problems as equally important to address with treatment (Pearcy, Clopton, & Pope, 1993). Teachers are also more comfortable referring students with academic concerns rather than identifying emotional difficulties within students (Walker, Nishioka, Zeller, Severson, & Feil, 2000). Another concern with teacher referral as a primary screening method is that referral methods are not standardized, meaning teachers would be more likely to refer at different rates depending on their confidence working with students with mental health problems (Severson et al., 2007).

Across all referral mechanisms, regardless of informant, clinical levels of impairment often have to be visibly evident before a student is referred. This reality removes any opportunities to identify students at-risk before clinical levels of symptomology emerge for early intervention services (Eklund & Dowdy, 2014).

Teacher nomination. In teacher nomination procedures, teachers are asked to consider their entire class roster, and then nominate (identify) those students who he or she believes is at-

risk or is experiencing certain emotional or behavioral concerns. As teachers have unique insight

both into the lives of the students in their classroom and to what school-based mental health

services are available, teacher nomination is an easily conceptualized screening method (Eklund

et al., 2009). Teachers also spend the most time with students out of anyone else in a school

building, providing many opportunities to observe students' highs and lows. Even though

training in mental health disorders and treatment is not a prerequisite for teachers' job position,

teachers have been found to witness events that put students at-risk for mental health problems,

including peer victimization and bullying, violence, or sexual harassment (Williams et al., 2007).

Teacher nomination methods feature many benefits, as they are easily implemented, efficient,

relatively inexpensire, and take less time as compared to other screening methods such as rating

scale or multiple gating (Cunningham & Suldo, 2014; Dowdy, Doane, Eklund, & Dever, 2011;

Ollendick, Oswald, & Francis, 1989).

The utility of using teacher nominations alone as a screening method has been found to

differ, depending on the type of student mental health concern. In terms of identifying students

with externalizing disorders, research has found teacher nominations can accurately identify the

student who exhibit those types of concerns (Dwyer, Nicholson, & Battistutta, 2006; Mollins &

Clopton, 2002; Pearcy, Clopton, & Pope, 1993). In terms of internalizing disorders, research is

less supportive of teacher nomination accurately identifying high numbers of students

experiencing concerns such as anxiety and depression (Cunningham & Suldo, 2014; Gelley,

2014). One reason is that teachers are more likely to nominate more students exhibiting

externalizing concerns compared to students exhibiting internalizing concerns (Lane & Menzies,

2005; Richardson et al., 2009; Soles, Bloom, Heath, & Karagiannakis, 2008). van Luling's

(2015) dissertation research compared teacher nomination to data from a teacher rating scale,

specifically the Behavior Intervention Monitoring Assessment System (BIMAS; Meier, McDougal, & Bardos, 2011). van Luling found the BIMAS was more appropriate for identifying elementary school students with internalizing concerns. Additionally, van Luling found academic concerns were most associated with teacher nomination, suggesting a bias in nominations towards teacher nominating more students with academic risk rather than students with emotional risk.

When comparing teacher nomination to universal rating scales, teacher nomination methods have been found to yield fewer students as at-risk for mental health concerns (Dowdy, Doane, Eklund, & Dever, 2011). One study comparing the two screening methods contained a sample of 849 elementary and middle school students, whose teachers were randomly assigned to either fill out BESS for each student in his or her class or a teacher nomination form, asking teachers to identify students at-risk "behaviorally or emotionally" (Dowdy et al., 2011; p. 130). When comparing students identified by either method, the rating scales identified more students as at-risk compared to nomination, and more students identified by the rating scale had poorer reading assessment scores. Although the students identified between the two methods did not differ in number of ODRs, cooperation levels, and study habits, the students identified by the BESS had worse reading scores than students identified on the teacher nomination form, and worse reading performance is associated with at-risk mental health. Dowdy et al. (2011) described several benefits of universal rating scale screenings over teacher nomination, including a more systematic approach to identifying students at risk, and increased identification of students at-risk. Limitations of this study are that it did not incorporate student self-report outcome criterion and did not collect nomination data for externalizing and internalizing risk separately.

48

To further explore the accuracy of teachers in identifying students with internalizing concerns in schools, Gelley's (2014) dissertation examined teacher accuracy when attempting to identify middle school students with elevated levels of anxiety and depression. Participants included 233 7th and 8th grade students who completed the Children's Depression Inventory 2nd Edition (CDI 2; Kovacs, 2011) and the MASC 2nd Edition (MASC 2; March, 2013). All students completed the CDI 2 and MASC 2 at Time 1, and students who showed elevated symptomology at Time 1 completed those measures again a week later (Time 2) in order to permit examination of reliability of scores. At Time 1, teachers completed nomination forms which allowed them to nominate as many students as they felt met symptom criteria for anxiety and depression. In terms of accuracy identifying students with elevated levels of anxiety, teachers had 58% sensitivity on average, meaning they missed 42% of students experiencing anxiety. In terms of accuracy identifying students with elevated levels of depression, teachers had 37% sensitivity on average, meaning they missed 63% of students experiencing depression on. Overall, teachers were moderately accurate (i.e., better than chance) identifying students with anxiety, but somewhat less accurate (and less accurate than by chance alone) identifying students with depression (Gelley, 2014). One noticeable gap in the research regarding teacher nomination is teacher accuracy in identifying high-achieving students in AP/IB classes who report high levels of emotional risk or problematic levels of academic outcomes.

Multiple gating procedures. Multiple gating procedures include several combinations of or 'gates' of screening methods to funnel down the student population of interest to determine students most likely to be at-risk for or demonstrating mental health problems (Whitcomb & Merrell, 2013). Benefits of multiple gating procedures include increased accuracy identifying

49

and connecting students in need to services using multiple measurement instruments and criteria (Kilgus, Riley-Tillman, Chafouleas, Christ, & Welsh, 2014).

Multiple gating procedures often feature more conservative inclusion criteria during the first gate to minimize false positives, at a cost to potentially identifying more false negatives (Whitcomb & Merrell, 2013). The rationale behind the more conservative criteria is although there will be more students truly not at-risk in earlier gates, later screening gates will determine whether a student is truly at risk. If a student is missed in an early gate, they are automatically excluded from further assessment and intervention services (Whitcomb & Merrell, 2013).

The current "gold standard of systematic screening" (Kauffman, 2001) is a multiple-gating screening procedure, the Systematic Screening for Behavior Disorders (SSBD-2; Walker, Severson, & Feil, 2014). Bruhn, Woods-Groves, and Huggle (2014) reported 14% of schools conducting universal screenings utilize the SSBD. The second edition of the SSBD was published in 2014, and contains two different procedures for identifying PreK and kindergarten students and first through ninth grade students (Walker, Severson, & Feil, 2014). Within the first through ninth grade student procedure, there are two stages: Stage 1, wherein teachers nominate five students who he or she believes fits symptom criteria for externalizing and internalizing behaviors, then rank orders the nominated students, and Stage 2, wherein teachers complete full rating scales for the top three students at-risk for externalizing and internalizing symptoms. Behavior codes or a School Archival Records Search (SARS) can be used as an optional Stage 3 for further data collection (Walker, Severson. & Feil, 2014). The teacher nomination procedure used in Stage 1 of the SSBD-2 is similar to the teacher nomination used in the current study.

Research conducted on multiple gating screening procedures in elementary and middle school samples supports the benefits of using multiple gates and screening methods, including

teacher rating scales and nomination tools over solely teacher nomination procedures. Kilgus et al. (2016) evaluated a multiple gating procedure that involved teacher nomination at first gate and completion of the Social, Academic, Emotional, Behavior Risk Screener- Teacher Rating Scale (SAEBRS-TRS; Kilgus, Chafouleas, Riley-Tillman, & von der Embse, 2013) at second gate, among an elementary and middle school sample from two different studies. Participants included 868 students in Study 1 and 1534 in Study 2. Parent opt out procedures were used for screening participation, contributing to a 99.20% participation rate across both studies. At one time point, teachers completed a teacher nomination procedure, the SAEBRS-TRS, and the BESS). In the teacher nomination procedure, teachers nominated five students each for "social behavior problems," "academic behavior problems," and "emotional behavior problems." The BESS was used as the outcome criterion variable to determine accuracy of the teacher nomination procedure and the SAEBRS-TRS.

When looking at the utility of the teacher nomination procedures, the individual SAEBRS procedures wherein teachers nominated five students each who displayed challenges or deficits separately for social behavior, academic behavior, and emotional behavior was not supported in terms of adequate sensitivity, specificity, PPV, and NPV. One proposed explanation for the poor accuracy across individual nomination procedures involved the low number of nominations. For example, teachers nominated around zero to three students for social behavior risk. But, once nominations were combined across all the individual nomination procedures across all categories (social, academic, and emotional behavior problems), accuracy increased in part because teachers had more nominations across all procedures combined. This study found that when teachers were asked to nominate "5 or more students" instead of "up to 5 students" in Study 2, teacher sensitivity did not improve. Researchers concluded universal screening with SAEBRS-

TRS was more psychometrically supported compared to a multiple gating procedure with both teacher nomination and SAEBRS-TRS. Limitations of the studies included no high school level participants, nominations took place earlier in the year (accuracy may have been improved with screening taking place later in school year), and the lack of student self-report data for the criterion (Kilgus et al., 2016).

Although multiple gating procedures have been regarded as a gold standard for systematic screening, some research suggests the effort behind adding multiple informants and gates is not necessary to best identify students in need (Dowdy, Dever, Raines, & Moffa, 2016). A preliminary investigation into the added value of multiple gates and informants in universal screening for behavioral and emotional risk was conducted at one urban high school in California with 761 student participants. Parents were notified of the screening and had the opportunity to opt out their child from screening, which took place a month into the school year. As part of a first gate, all students eligible for screening completed the BASC-2 BESS Student Form. For a second gate, and to include multiple informants, students whose self-report on the BESS yielded a score in the elevated range in the first gate completed the BASC-2 Self-Report of Personality (BASC-2 SRP; Kamphaus & Reynolds, 2007) and teachers completed the BASC-2 Teacher Rating Scale (BASC-2 TRS; Kamphaus & Reynolds, 2007). To measure emotional wellness at the end of the year, students also completed the SEHS, and students' end of the year GPA was obtained from school records. Results indicated the results of the first gate accounted for 35% of the variance in later student self-report social/emotional well-being, but data obtained from students in the second gate only accounted for 17% of the variance in later student self-report social/emotional well-being. Regardless of rater at the second gate, whether student or teacher, information obtained from BASC-2 SRP and BASC-2 TRS did not significantly add to

prediction of later well-being on the SEHS over and beyond BESS ratings on the initial gate. In terms of predicting later academic outcomes, student self-report on the BASC-2 SRP did not explain later academic well-being, but teacher report on BASC-2 TRS did. Dowdy et al., (2016) concluded one gate of student self-report might be enough screening information to obtain at the high school level to identify students in emotional risk, but teachers may be the best informant to include in identifying students at academic risk.

Identifying high achieving students at-risk. Researchers have called for better practices for identifying students in accelerated curricula with higher levels of perceived stress to target for early intervention (Feld & Shusterman, 2015). However, there are no well-established procedures for identifying AP/IB students with emotional or academic risk. With regard to related populations of high-achieving or gifted youth, only one published study was found detailing a screening procedure identifying gifted and nongifted students in a multiple-gating procedure (Eklund, Tanner, Stoll, & Anway, 2015). Participants included 1206 gifted and nongifted students ($N = 168$ and 1038, respectively) across 20 elementary schools involved in a larger study evaluating the longitudinal effects of universal screening for emotional and behavioral risk. As part of a first gate, teachers and parents completed the BESS. As part of a second gate, the same raters completed the BASC-2. School records were also obtained for students, such as gender, age, ethnicity, gifted status, and academic achievement. When detecting patterns among gifted and nongifted students, there were some differences seen between gifted and nongifted students. Parents and teachers identified more boys and nongifted students as having emotional and behavioral risk. Eklund et al. (2015) suggested the higher academic achievement that characterized gifted students might serve as a protective factor for emotional and behavioral risk. For students identified by the screening procedure, parents reported gifted

students as having more internalizing symptoms. Overall, the researchers concluded a similar screening procedure could be used for both gifted and nongifted elementary school students, but there were different patterns among students identified. A limitation of the study was no collection or use of student self-report data for older elementary school students, and the involvement of a younger sample compared to the current study (Eklund et al., 2015).

To identify students in AP/IB programs with signs of emotionally or academic risk, Suldo, Storey, et al. (2018) developed and piloted a multimethod screening procedure that led to the screening procedure used in the current study. The purpose of the multimethod screening was to systematically examine all students who took part in a pilot of the ACE Program (Suldo, 2015) and identify those most appropriate to invite to take part in the MAP selective intervention. The sample included 319 9th grade students from two public high schools in one large school district in a large southeastern state. This sample comprised virtually all of the freshmen who took part in an implementation pilot of the ACE program during the 2016-17 school year, and the five teachers who were also all involved in the implementation pilot of the ACE program. Students were either enrolled in IB Inquiry Skills ($n = 163$) or AP Human Geography ($n = 193$), depending on whether they were enrolled in AP or IB. Fifty-three percent of the youth were females, and the student sample was racially diverse (23.0% self-identified Hispanic, 2.6% Black, 7.9% Asian). Teacher participants included five teachers, three who taught IB Inquiry Skills at an urban high school and two who taught AP Human Geography classes at a suburban high school. Three of the teachers were male, and two were female, and most of the teachers self-identified as Caucasian, with one teacher self-reporting Hispanic ethnicity.

The screening procedure took part in the middle of the school year (January 2017), after students took part in the ACE program throughout the fall 2016 semester. Before screening took place, as per school district procedure, notification of the upcoming screening procedure was sent out to parents and guardians. One week was given for parents to 'opt-out' of the screening if so desired. Of the total targeted sample, 13 students were excluded from the screening due parent opt out, and 2 students were unable to be screened due to persistent absences. In total, data was gathered from a sample of 304 students (95.9% of eligible students). Regarding student data collection, students completed a six-item version of the Perceived Stress Scale (PSS) and the eight-item School Satisfaction scale from the MSLSS. Both measures had good reliability in the sample (PSS, α = .85; SS, α = .86). Students also self-reported their fall semester unweighted GPA and their fall semester grade in either AP Human Geography or IB Biology, depending on the student's program. School administrators also provided the research team with students' unweighted fall semester GPA and grade earned in IB Biology or AP Human Geography as indicated by their school records.

While students filled out measures, teachers completed a nomination form. The nomination form included a list of example symptoms for academic or emotional risk, followed by a roster of names of students (only including students who were not opted-out of screening) for each class section. The teacher nomination form was created the month before use through four focus groups at the two participating school sites, with feedback from the assistant principal, school psychologist, and teachers at each school informing signs of academic and emotional risk included on the form. After a research team member explained the screening procedure to the teacher, teachers marked "yes" or "no" for whether they considered the student to be "at risk for

diminished success in AP/IB." Teachers were also allowed to indicate whether they did not know the student enough to accurately determine risk.

After collection of data from students and school records was completed, research team members entered and analyzed data to create cut scores. For perceived stress, 'at-risk' was designated as a PSS score as higher than 3.6 due to conceptual and analytic reasons. For the conceptual rationale of the cut score on the PSS, on its 1-5 range of response options, '3' is labeled as "*Sometimes*," and '4' is labeled as "*Fairly Often*," meaning that if a student reported a PSS average score of 3.6 the student perceived stress more frequently than *sometimes*. For school satisfaction, 'at-risk' was designated as a SS score lower than 3.4, again due to conceptual and analytic reasons. For the conceptual rationale, on its 1-6 range of response options, a response between the 1-3 range indicates dissatisfaction, where '1' is labeled as "*Strongly Disagree*," and '3' is labeled as "*Mildly Disagree*." A response of '4' is labeled as "*Mildly Agree*," meaning that if a student reported an SS average score of 3.4, the responses indicate dissatisfaction with school. For each emotional risk indicator, 15-16% of students self-reported risk on either perceived stress or school satisfaction, mirroring a *T* score one standard deviation above the mean, similar to other emotional/behavioral rating scales determination of whether an individual is at-risk emotionally. The cut score and risk status for academic risk was determined to be a grade of a C, D, or F (in AP Human Geography or IB Biology) or below a 3.0 unweighted fall semester GPA; students who earn multiple Cs are unable to achieve the IB Diploma later in high school. The cut score to determine risk status for academic risk was again determined to be conceptually similar to a *T* score of 60.

Of the 304 students with complete data during the screening, 117 of students were determined to be at-risk based on level of stress, school satisfaction, or academic indictors (GPA,

or grade in IB Biology/AP Human Geography). In terms of academic risk, 20.1% of students were deemed at-risk academically on either indicator (GPA or course grade). Regarding emotional risk, 16.12% of students were deemed at-risk due to their dissatisfaction at school, and 15.13% of students were deemed at-risk due to high levels of perceived stress. Most students (61%) were not found at risk in either domain. Of the remaining 117 students identified as at-risk (39% of sample), most ($n = 84$) only met at-risk criteria for one of the three risk factors (academic performance, perceived stress, school satisfaction). Twenty-seven of students in the at-risk group met criteria for two risk factors, and only 6 met criteria for all three risk factors.

Analyses were conducted to examine relationships between teacher nomination status and different student risk factors. For students with any risk factor, emotional or academic, teachers only nominated 46 of 117 students with any risk, yielding a sensitivity rate of 39.32%; teachers missed 60.68% of students with any form of risk. In terms of specificity, the rate at which teachers correctly did not identify students who did not report any risk, teachers accurately did not nominate 83.96% of students without risk; teachers misidentified 16.04% students as having risk whereas students did not self-report risk nor did their school records indicate risk.

Sensitivity rates were also calculated for each of the three individual risk factors: perceived stress, school satisfaction, and academic risk (which was a combined variable of unweighted fall semester GPA and course grade). Table 1 details sensitivity rates across all five teacher participants combined, as well as presents low and high rates by individual teacher to demonstrate the range in accuracy rates, for each risk factor.

Table 1

Teachers' Sensitivity in Pilot Screening (N = 304 students, 5 teachers)

Risk Factor	Sensitivity (across all 5 teachers)	Lowest Sensitivity (individual teacher)	Highest Sensitivity (individual teacher)
Any Risk Total	39.32	3.13	60.00
Stress Total	32.61	5.56	100.00
School Satisfaction Total	28.57	0.00	50.00
Academic Risk Total	60.66	7.14	100.00

Overall, AP/IB teachers in the pilot study correctly identified around one-third of students with emotional risk factors (school satisfaction or perceived stress) and around two-thirds of students with academic risk factor, suggesting teachers may perceive student risk to be defined by academic risk more than emotional risk factors. Additionally, there were significant differences between individual teachers' accuracy. Specifically, two teachers had a rate of sensitivity to any risk of 3.13% and 26.67%, respectively, where the other three teachers had a sensitivity to any risk ranging between 57.14% and 60.00%.

A second research aim of the pilot study was to examine accuracy of student self-report of academic indicators, to investigate if students could be relied upon to provide accurate academic data. Accessing student records is arguably a more time-intensive screening method as it requires staff time as well as access to the database. Student accuracy of academic progress was examined to explore whether this less time-intensive approach for screening might be sufficiently sensitive as to make the collection and review of data from school records unnecessary. Although there was a strong association between student self-report of course grades and actual course grade per school records ($r = .85$) and a strong association between student self-report of unweighted fall semester GPA and actual unweighted fall semester GPA

per school records ($r = .74$), only 47.83% of students whose school records indicated at-risk GPA also self-reported their GPA in that range, and only 63.64% of students whose school records indicated at-risk course grades also self-reported their class grade in that range. Therefore, the research team used school records as the indicator of academic risk, instead of school records and student self-report of grades.

In sum, the researchers concluded the screening procedures that included student self-report for emotional status and school records review for academic status were optimal strategies for identifying students most appropriate for MAP participation. Although the accuracy of teacher nominations was not overly promising, conclusions cannot be made about AP/IB teachers' accuracy in identifying students with emotional and academic risk separately, as nominations were combined across both categories. This study set out to replicate the screening procedure for identifying at-risk AP/IB students (based on student report of emotional status and school records for academic performance) in a larger sample of schools who are participating in ACE and MAP in the 2017-18 school year, and further explore the accuracy of teacher nominations when teachers are asked to separately nominate students for academic or emotional risk or both academic and emotional risk.

Student Missed in Teacher Nomination Procedures

Although various forms and procedures exist for universal screenings, many schools elect to utilize teacher nomination, whether in isolation or in conjunction with other procedures in a multiple-gating procedure, due to its cost-effective and easily implemented nature. Studies of the accuracy of teacher nomination procedures suggests nominations may be more susceptible to teacher biases, citing patterns in student characteristics between missed and identified students varying from gender, race, and risk factor severity as summarized in the following sections.

59

Gender. A student's gender may be associated with being missed or identified in teacher nomination procedures. In an evaluation of a multiple gating screening procedure including both gifted and nongifted elementary school students, Eklund et al. (2015) found parents and teachers were more likely to identify boys as at-risk. Cunningham and Suldo (2014) examined the accuracy of teacher nomination methods for identifying anxiety and depression in an elementary school sample. Participants included 26 elementary school classrooms across two schools, with 26 teacher participants and 238 student participants. Students completed the MASC and the CDI, and teachers completed a nomination form at one time point. The nomination form directed teachers to identify three students who showed signs of anxiety or depression. Results indicated boys with anxiety were nominated at higher rates compared to girls with anxiety, but there were no gender differences in nomination for students with depression.

Gender differences may also exist both in teacher completion of rating scales. Sargisson, Stanley, and Hayward (2016) investigated gender differences across multiple informants in New Zealand children. Participants included 38 female and 36 male students ranging in age from 10 to 11, their parents, and teachers from five different primary schools. Student, teachers, and parents all completed their corresponding form of the SDQ. Results indicated both teachers and parents indicated lower symptom levels compared to student self-report. When looking at gender differences across raters, teachers were more likely to report more mental health risk in boys than girls, whereas there were no gender differences in student or parent ratings. Overall, Sargisson, Stanley, and Hayward (2016) emphasized the importance of including student self-report in combination with other raters, given teachers may underreport girls' symptoms of mental health risk. Although some research suggests there are differences between identified and non-identified students in terms of gender (Cunningham & Suldo, 2014; Eklund et al., 2015; Roeser

60

& Midgley 1997, Sargisson, Stanley, & Hayward, 2016) other research is not commensurate with these findings, not indicating a relationship between accuracy and gender (Auger, 2004; Dadds et al., 1997; Gelley, 2014; Soles et al., 2008). In terms of whether gender may vary across teacher accuracy in identifying AP/IB students in their first year of high school, Suldo, Storey, and colleagues (2018) did not find any differences between sensitivity rates for identifying male and female students (Suldo, Storey, et al., 2018).

Race. Another demographic characteristic that may reflect patterns in students missed in teacher nomination procedures is race. Although research is mixed as to whether race differentiates teacher accuracy in nomination procedures (Gelley, 2014; Cunningham & Suldo, 2014), racial biases are clearly demonstrated in special education referrals and office disciplinary referrals. African American males are more likely referred for special education services, and particularly for Emotional and Behavioral Disabilities (EBD; Lane et al., 2010). For referrals for gifted identification, a review of gifted referrals across the state of Georgia indicated White and Asian students were referred at higher rates than Black or Hispanic students (McBee, 2006). In term of rates of ODRs, one type of screening procedure, African American males in middle school were 3.78 times more likely to be sent to the office compared to White students (Skiba et al., 2011). African American and Hispanic students, for the same behavior as White students, were also more likely to receive harsher punishments such as expulsion or out of school suspensions (Skiba et al., 2011).

In terms of racial differences in teacher nomination methods, Gelley (2014) did not find any significant differences between students incorrectly missed and those correctly identified depending on race, but noted a trend whereby teachers correctly identified 72% of Black students exhibiting at-risk levels of anxiety but only 36% of students with at-risk levels of anxiety from

other minority groups (namely Hispanic and multiracial). Cunningham and Suldo (2014) and Roeser and Midgley (1997) did not find any differences between the race of students accurately identified for services and those missed in teacher screening procedures.

Risk factor severity. Another student characteristic that may differentiate students missed in teacher nomination procedures is the severity of risk factors, or mental health symptoms. Several studies have found students with higher levels of psychopathology are more likely to be 'caught' by teachers. Teachers' reduced accuracy in identifying students with subclinical levels of psychopathology poses a challenge to prevention and early intervention, as students with these lower levels of problems can be more difficult to connect to needed services. For teacher identification of students with anxiety in particular, Layne, Bernstein, and March (2009) examined teacher accuracy identifying elementary school students with anxiety. Participants included 453 students in second through fifth grade across three different elementary schools. Students who received active parent consent for participation in screening completed the MASC. Teachers identified three students he or she believed exhibited signs of anxiety. Results indicated students identified by teachers had higher levels of general anxiety, physiological anxiety, social anxiety, and separation anxiety, but did not differ on student gender (Layne, Bernstein, & March, 2006).

Roeser and Midgley (1997) also evaluated teachers' attitudes towards supporting students with mental health needs in the classroom and accuracy in identifying fifth grade students who may benefit from mental health services across 20 elementary schools. Participants included 200 teachers and 880 fifth grade students. Teachers completed a one-page rating scale for each students on various aspects of the students' emotional wellbeing, and whether the student would benefit from seeing a psychologist. Students completed unspecified measures of their "academic

motivational beliefs and behavior, psychological well-being and distress, and perceptions of their classroom and school" (p. 121). Results indicated students who self-reported higher anxious symptoms and lower self-esteem were more likely to be also indicated by teachers as benefitting from mental health services. Although, in terms of depression symptoms, students with lower levels were more likely to identified by teachers. Overall, while most research suggests students with higher levels of psychopathology are more likely to be identified by teachers, some research, such as Cunningham and Suldo's (2014) study, contradicts these findings, with findings that in an elementary school sample students who were missed did not significantly differ than identified students based on anxiety or depression symptom severity.

Factors Affecting Teacher Nomination Accuracy

An emerging area of research has explored factors potentially related to teacher nomination accuracy, such as teacher gender, subject taught, self-efficacy, acceptability of teacher nomination method, and professional experience (Moor et al., 2007; Storey, 2016). One malleable factor, teacher education in the screening targets, topics, and procedures (referred to as teacher professional development or training), has been targeted in particular to explore whether teachers can acquire knowledge in topics such as mental health symptomology and prevalence rates, to improve their accuracy in identification of students at-risk for mental health problems.

Teacher education. Although teachers are often called upon to support building schools' capacity to address and intervene for students with mental health problems, teachers generally do not feel prepared to support students' mental health in the classroom (Reinke et al., 2011). Additionally, many teachers conceptualize mental health as an absence of psychopathology, and not the capacity for positive indicators of mental health (Graham, Phelps, Maddison, & Fitzgerald, 2011).

In response to the perceived gaps between teachers' background knowledge and desired abilities, several teacher training programs have been advanced to build teachers' capacity to identify and refer students in need to appropriate mental health services, such as Youth Mental Health First Aid (YMHFA; Youth Mental Health First Aid, 2013) and Question Persuade Refer (QPR; QPR Institute for Suicide Prevention, 2014). Although these programs have been found to increase educator knowledge and confidence supporting students with mental health concerns (Jorm et al., 2010; Reis & Cornell, 2008), fewer studies have evaluated whether teacher training programs result in changes in behavior or actual increased *accuracy* when it comes to identifying students with mental health problems. Other barriers to developing and evaluating teacher training materials includes the cost and time associated with training, and few existing studies showing the utility of trainings in a school setting (Jorm et al., 2010).

Moor and colleagues (2007) evaluated a psychoeducational intervention to improve the accuracy of teachers in identifying students with depression in Scotland. Participants included 151 teachers across eight high schools, and 2,262 students. In the teacher sample, 69 teachers were "guidance teachers…with special responsibility for pupil pastoral care" (p. 88), and 82 teachers were "class registration teachers, specialized subject teachers, and learning support teachers" (p. 88). As a pre-test, teachers completed a nomination procedure to identify students with depression and a measure of attitudes (i.e., self-efficacy and confidence that other teachers could identify students with depression). Students completed the MFQ, and those who reported elevated depression symptoms took part in a semi-structured clinical interview to evaluate whether the student met criteria for a depression diagnosis (i.e., the Schedule for Affective Disorders and Schizophrenia for school aged children- present and lifetime version; K-SADS-PL; Kaufman et al., 1997). Next, teachers were randomized to either a psychoeducational

intervention condition or a control condition (a neutral 'training' containing no psychoeducation). The psychoeducational intervention was created by Moor et al. (2000) and consisted of a two-hour intervention including didactic information on depression symptoms in adolescents, vignettes of students experiencing depression, and the role of teachers in identifying students with depression. Lastly, teachers completed the nomination form and attitudes questionnaire for a second time point immediately after training. When comparing teacher ratings between pre and post-training, in relation to students' self-reported ratings of depression symptoms and depression diagnostic status, teachers in the psychoeducational condition *decreased* the number of students they nominated, and also decreased in accuracy (defined by researchers as only sensitivity to identifying the students with depression diagnoses per the clinical interview). Regarding changes in attitudes over time, teachers in the intervention condition increased in self-efficacy and confidence in other teachers to identify students with depression. Given that changes in accuracy and behavior are more crucial that changes in attitudes, Moor et al. (2007) concluded that the psychoeducational training was not effective, and may have been detrimental, to teacher accuracy identifying high school students with clinical levels of depression.

In Brazil, Vieira, Gadelha, Moriyama, Bressan, and Bordin (2014) evaluated the effects of a mental health training program for public school teachers of middle and high school students. Participants included 32 teachers who taught grades 5-11. Before any training, teachers filled out demographic questionnaires and items assessing job satisfaction and how confident the teacher felt in his/her job skills. Teachers also completed a nomination form to identify any students is his or her classes they believed exhibited signs of mental health risk. Next, teachers read six researcher-created vignettes of student behavior. The vignettes detailed students

65

exhibiting signs of (in order): psychosis, depression, conduct disorder, hyperactivity, mania, and normal adolescent behavior. Teachers were asked whether the student needed a referral for mental health services, after-school non-specific help, other, or none. Next, teachers participated in two training sessions that were each two hours long. In the first session, teachers received didactic information on mental health problems, effects of mental health disorders, and the differences between typical and atypical adolescent behavior. In the second session, teachers reviewed the topics in the first meeting, but with added emphasis on how behaviors may change with emerging mental health symptomology, and completed the same vignette questionnaire again. Students with parent consent to participate completed the YSR.

When evaluating the effect of the psychoeducational training for teacher participants, results were mixed. Before training, 90% of teacher participants were designated by researchers as highly accurate in identifying students in the presented student vignettes who needed referrals for mental health services; results indicated training did not increase accuracy for this group. For teachers who had lower pre-training scores, 50% of the teachers after training accurately referred students for mental health services from the student vignettes, showing some benefits of the training. For example, for the five teachers who initially did not identify the student with mania symptoms as a student in need of mental health services, three of the five identified the student after the training. For the depression vignette, of the six teachers that did not initially identify the student with depression as in need of mental health services, three of the six correctly identified the student after the training. Similar trends were also seen for the student vignette for psychosis, conduct problems, and hyperactivity. There was also an improvement in teachers accurately identifying 80% of normal adolescent behavior (teacher accuracy was 66.7% for identifying normal adolescent behavior before the psychoeducational intervention). Teachers rated the

66

program as acceptable, but suggested making the program longer and showing real cases of students in his or her classes with mental health problems. Researchers also compared the YSR scores for the teacher nominated students before the psychoeducational intervention and the non-nominated students who had clinical/borderline symptomology or higher on the YSR. The rate of psychopathology was the same for nominated and non-nominated students, suggesting teachers were not highly accurate identifying students with mental health risk. For non-nominated students who should have been nominated, students were more likely to have internalizing symptoms (Vieira et al., 2014).

Deacon's (2015) dissertation research examined the effects of the teacher training program Training Teachers to Identify Children with Anxiety Problems (T-TICAP; Feeny-Kettler, Auster, & Kratochwill, 2005). Participants included 10 teachers in the United States who taught grades four through six. At the beginning of the study, all teachers, regardless of condition, completed an anxiety knowledge test. Next, teachers were randomly assigned to receive T-TICAP or control (teachers did not receive the training). T-TICAP training contains two targets: teacher knowledge of anxiety in children and teacher accuracy identifying children with anxiety. The training was one 50 minute session, and covered the etiology and risk factors for anxiety, what anxiety can look like in children (signs and symptoms), and what teachers can do to identify students with anxiety, such as referring a student to school mental health staff. After assignment to condition (intervention or control), teachers completed an anxiety nomination rubric and the anxiety knowledge questionnaire; participating teachers' students completed the MASC-2. Teachers who received T-TICAP increased in knowledge of anxiety symptoms, but it is unknown if this increase is attributable to the intervention. Teachers in the training and no-training conditions could not be compared in terms of changes in knowledge of

anxiety symptoms, as teachers in the control condition received the T-TICAP training after study completion, and only completed the anxiety knowledge questionnaire for the second time after receiving the training. Overall, increased knowledge of anxiety symptoms teachers experienced did not translate into changes in accuracy. Teachers at post-intervention, regardless of receiving the T-TICAP training or not, did not differ in accuracy (defined by sensitivity, meaning whether a teacher accurately identified a student with an elevated MASC-2 total score).

Effect of teacher feedback procedures. The studies evaluating largely didactic teacher training programs have not found promising support for improving the accuracy of teachers in their ability to identify students with emotional difficulties (Deacon, 2015; Moor et al., 2007; Vieira et al., 2014). However, the null results may be attributed to the training procedures tested so far. Trainings that include more hands-on practice and feedback on actual identification of students with emotional difficulties may prove more effective. General models of staff development have proposed effective professional training should include, "developing knowledge, through exploring theory to understand the concepts behind a skill or strategy; the demonstration or modeling of skill; the practice of skill and peer coaching" (Joyce & Showers, 2002, p. 1). Similarly, further research suggests feedback may be a particularly important component of teacher trainings to include. A review of 49 studies evaluating pre-service and inservice training of classroom teaching skills found trainings that included practice and performance feedback had the strongest positive impacts on teacher skills (Rose & Church, 1998). Practice with feedback varied in teacher trainings from notes, graphs, verbal feedback, self-evaluation, and reviewing audio or videotapes. Overall, Rose and Church (1998) concluded that feedback is a "necessary component" of any teacher training program.

One session of training and performance feedback may be sufficient to increase undergraduate students' ability to rate student behavior and determine a behavior's consequence, compared to other training conditions. Kilgus, Kazmerski, Taylor, and von der Embse (2017) evaluated the ability of a performance feedback procedure on the accuracy of Direct Behavior Rating Single Item Scale (DBR-SIS) direct behavior ratings and determinations of a behavior's function. Participants included 213 undergraduate students in an introductory psychology course, who were randomly assigned to one of four groups: Functional Behavioral Assessment (FBA) training with performance feedback (training-with-feedback), training with no performance feedback (training), pretest-posttest only, and posttest only. First, students in three of the groups (training with no performance feedback, pretest-posttest only, and posttest only groups) read a textbook chapter on an introduction to FBA. Next, students in training-with-feedback, training, and pretest-posttest only groups completed the pre-test, which involved watching simulations of student and classroom teacher behavior. While watching the video clips of students in classes, participants rated levels of disruptive behavior and the consequence that followed the target behavior (such as adult attention, peer attention, escape, and access to tangibles/activities). After pre-test, students in training-with-feedback and training groups completed a short training on FBAs, including a description of functions of behavior, FBA procedures, and the purpose of DBR-SIS specifically. The training also provided participants with an activity to practice rating behavior and its consequence, with a research assistant modeling rating behaviors and consequences. In the training-with-feedback group, participants also completed a 10-15 minute additional feedback component, in which they watched two additional videos, gave ratings, and then were given the 'true scores' of the student behaviors with a description of the behaviors. Finally, all groups completed the post-test using the student and teacher video clips. Results

showed participants who received training utilizing performance feedback outperformed students in training-only, pretest-posttest, and posttest-only groups. Although participants were not teachers or other school personnel who would be the ones most likely using DBR-SIS in schools, the effect of training plus performance feedback was promising to improve performance in one screening tool. Additionally, it is unclear whether increased accuracy using DBR-SIS in simulations of student behavior may translate to accuracy rating student behavior in natural classroom environments.

Conclusions. Students in Advanced Placement and International Baccalaureate (AP/IB) programs are an understudied and underserved population in school-based mental health research (Suldo, Gormley, DuPaul, Anderson-Butcher 2014). Additionally, this population has unique risk and promotive factors differentiating their needs from students in general education, in particular high perceived stress levels and particular salience of affective engagement (school satisfaction) to student outcomes. Therefore, a natural framework for providing appropriate and specialized services for this at-risk population comes with a multi-tiered system of support (MTSS) for academic and emotional success. One important part of an effective data-based MTSS is regularly conducting universal screenings for students at-risk risk and connecting those in need to needed supports. Many different methods of universal screenings exist for use in schools; but few specialized procedures exist to identify AP/IB youth with academic and/or emotional risk.

One universal screening method that is utilized both in isolation and within multiple gating procedures is teacher nomination. In samples of general education students, teacher nominations provide an effective way to identify students with externalizing students (Dwyer, Nicholson, & Battistutta, 2006; Mollins & Clopton, 2002), but less support exists with regard to

70

their utility in identifying students experiencing internalizing symptoms (Auger, 2004; Cunningham & Suldo, 2014; Gelley, 2014; Layne, Bernstein, & March, 2006; Moor et al., 2007). Although teacher nomination procedures have mixed support for high accuracy of multiple types of student concerns, nominations are often used as part of multiple-gating screening procedures (such as the SSBD-2) and are continued to be seen as a favorable screening method in schools. Teacher nomination screening methods can take up less time in the school day, as student rating scales may require a bigger time commitment to preserve class time for students to complete rating scales, entering large amounts of student data, and data analysis. Another perceived benefit of teacher nominations is the reduced costs (many forms are available free of charge or can be created by a school), while rating scales often are associated with a fee per each form used or scored.

Additionally, school districts may consider teacher nomination methods to be less invasive to student privacy, especially when contrasted with inquiries of student perceptions of their own emotional well-being. In regards to differences in consent or notification procedures required of teacher nomination versus student self-report, there is not a federal law directly addressing whether parent consent is required to ask students about emotional status. But, the Pupil Rights Amendment (PPRA, 2011) states if a school district requires students must participate in behavioral health assessment, active parent consent must be obtained as measures such as a screening of anxiety falls under the category of a "psychiatric or psychological examination or test" to reveal "mental psychological problems potentially embarrassing to the student or his or her family" (p. 3). According to this law, teacher nomination would *not* require active parent consent for youth participation, but a behavioral screening procedure that does not

71

allow students to opt out would require active parent consent, a process many schools attempt to avoid (PPRA, 2011).

One important age range to focus on for evaluating effective screening methods is high school aged youth. In schoolwide screenings, the gold standard for determining emotional status for high school students is student self-report of internalizing symptoms (Kamphaus et al., 2010). Teacher nominations have been considered to be more appropriate with younger students, such as the elementary school age group. Therefore, an evaluation of screening procedures including teacher nomination methods is most pertinent to a high school population, where an alternative method (student self-report) of identification is appropriate. When looking at patterns in students missed in teacher nomination procedures, student characteristics such as gender, race, and symptom severity may differentiate students who are correctly identified or not in nomination procedures (Cunningham & Suldo, 2014; Gelley, 2014; Layne, Bernstein, & March 2009; Roeser & Midgley, 1997; Sargisson, Stanley, & Hayward, 2016). Several teacher training programs have been created and evaluated in an attempt to increase teacher accuracy in identifying students with emotional risk. Such trainings have not found promising effects on accuracy (Deacon, 2015; Vieira et al., 2014), and one training even found detrimental effects (Moor et al., 2007). When looking at the components of existing trainings, many include features such as didactic teaching and reading case vignettes, and provide little opportunities for teachers to practice and receive feedback on skills. A test of various training conditions for providing instruction to undergraduates in how to rate student behavior found the best training condition to train undergraduate students on a screening measure featured feedback by research staff, which suggests training with feedback may be a promising avenue to teach teachers skills in identification of students at-risk (Kilgus et al., 2016).

The purpose of this study was to investigate the accuracy of teachers in identifying 9th grade AP/IB students in his or her classes with signs of emotional or academic risk. The study also explored patterns in characteristics of AP/IB students missed in a screening procedure; characteristics examined include student demographic features (gender, race), risk severity, and symptom type (perceived stress or school satisfaction). Finally, the study investigated the effect of a brief teacher feedback and training intervention on accuracy identifying 9th grade AP/IB students at emotional or academic risk.

CHAPTER THREE:

METHODS

The current study explored the accuracy of teachers in identifying 9th grade students in either Advanced Placement classes or International Baccalaureate programs (AP/IB) who were at emotional or academic risk, patterns of characteristics in AP/IB students missed by teachers (such as race, gender, SES, symptom severity, and symptom type), and investigated the effect of a brief teacher intervention on teachers' accuracy. The current study occurred within the context of a larger research project funded by the Institute for Education Science (IES) in a grant (R305A100911) awarded to Drs. Shannon Suldo and Elizabeth Shaunessy-Dedrick, Professors in the USF College of Education (Suldo, 2015). The grant's purpose was to develop and evaluate universal and selective interventions targeting effective coping practices and school engagement for 9th grade students in AP/IB classes and programs, and includes components for students, teachers, and parents. This study elaborated on one aim of the larger project; therefore some design features (e.g., participants, recruitment methods) were restricted to resources dictated by the larger project. This chapter details the study's research design, participants, recruitment procedures, data collection, and measures. Finally, the chapter contains a description of the data analysis procedures used to answer all research questions.

Research Design

The study was a one-group pretest-posttest design, but used a non-experimental descriptive research design to answer questions related to teacher accuracy identifying AP/IB students who have academic or emotional risk at one time point, or characteristics of students

commonly missed in a teacher screening procedure. A one-group pretest-posttest design was chosen because the study was part of a larger research project requiring all teacher participants to receive the 'treatment,' but a pretest-posttest design allows for some exploration of the effect of the intervention (Gall, Gall, & Borg, 2006).

Participants

Participants in the current study included teacher and students participating in a larger study evaluating universal and selective interventions for 9th grade AP/IB students, which included three school districts in a southeastern state (Suldo, 2015). District A was a large, urban school district serving approximately 215,435 students including through 27 high schools in the 2017-2018 school year. District B was a large, largely rural school district serving approximately 71,690 students including through 14 high schools in the 2017-2018 school year. District C was a large, urban school district serving approximately 103,242 students including through 18 high schools in the 2017-2018 school year. As part of the larger study, 15 accelerated programs (5 IB, 10 AP) in 14 high schools across the three districts agreed to participate (recruitment procedures are detailed below) and were randomly assigned to condition. Eight programs (4 in District A, 2 in District B, 2 in District C) were randomly assigned to receive the intervention condition, which includes a weekly classroom universal intervention, the screening procedure (the current study), and the follow-up selective intervention for students identified at-risk by the screening. The other seven were assigned to the delayed-intervention control condition. As part of the larger study data collection, student demographic data was collected from seven schools (eight AP/IB programs) from 352 students in Districts A, B, and C.

For the purposes of this study, only schools from District A and B participated in the parts of the study related to teacher nominations (for a total of six programs from five schools),

75

as District C elected to restrict screening procedures to use of student self-report on surveys and review of archival records (course grades) and did not approve the collection of nomination data from teachers. But, to determine the prevalence of student risk across each indicator, student self-report and school records data were utilized from the two participating schools in District C, combined with the student self-report and school records data from Districts A, B, and C. From the 352 students who completed demographic data collection in the fall, 19 students dropped from either AP Human Geography or the IB Program. Screening data was also not obtained from 2 students because their parent did not give active consent for participation in the screening (the requirement for participation in District C IRB research procedures), or their parent opted their child out of the screening process. Therefore, across the 7 participating schools in Districts A, B, and C, student self-report and school records data were obtained from 331 AP and IB students. To answer the current study's research questions, data were only used from participating schools in Districts A and B as these districts participated in the teacher nomination component of the screening procedure. Across 5 participating schools in Districts A and B, data from 245 AP and IB students (6 AP/IB programs) and 6 AP and IB teachers were collected. The Institutional Review Board (IRB) for human subject research at the University of South Florida (USF) approved the study's procedures and personnel, in addition to the research offices at each participating school district. Student age ranged from 13 to 15, with an average age of 13.98 (SD = 0.27) for the larger sample. For the smaller sample used for analyses, the average student age was also 14.00 ($SD = 0.25$). The demographics of participating teachers and students' demographics (of both the larger sample and the smaller sample used to answer the current study's research questions) are shown in Tables 2 and 4. For the racial composition of the sample, the data is presented in two ways: (a) students could designate the racial identity(s) with

which he or she self-identified, meaning students could identify with one or more races, and (b) race is collapsed into two groups, one with students who only self-reported White or Asian race, and one with students who indicated multi-racial, Black or African American, Hispanic, or other. The dichotomized race group was used for analysis purposes. White/Asian students were combined in one group and Hispanic/African American/Multi-racial/Other students were grouped together because White and Asian students tend to be over-represented in high-achieving groups, and Hispanic/African American/Multi-racial/Other students tend to be under-represented in high-achieving student groups (Ford, 2014).

Table 2

Student Demographic Characteristics

Variable	Larger Student Sample (*n*=352)		Student Sample Used for Nomination Analyses (*n*=245)	
	n	%	*n*	%
Gender				
Male	115	35.60	82	34.45
Female	204	63.16	154	64.71
Ethnicity				
Hispanic or Latino	89	27.55	78	32.77
Not Hispanic or Latino	234	72.45	160	67.23
Race				
American Indian or Alaska Native	6	1.86	8	2.52
Asian	46	14.24	38	15.97
Black or African American	50	15.48	43	18.07
Native Hawaiian/Pacific Islander	4	1.24	4	1.68
White, Non-Hispanic	214	66.25	142	59.66
Other	47	14.55	41	17.23
Race (Dichotomized into Two Groups)				
White or Asian	180	55.73	114	47.90
Hispanic, African American, Multiracial, or Other	143	44.27	124	52.10
Socio-Economic Status				
Low (Neither/One parent completed college degree)	163	51.91	126	54.78
High (Both parents completed college degree)	151	48.09	104	45.22

In the larger study with 15 academic programs, student participants ($N = 545$) were 9th grade students enrolled in either an IB program or AP Human Geography in the 2017-2018 school year. With respect to the six programs whose students were the focus of this study, the 245 student participants were enrolled in 4 AP programs ($n = 168$) and 2 IB programs ($n = 77$). Across participants from the six programs, 68.57% were enrolled in AP Human Geography and 31.43% were enrolled in the IB program. Table 3 provides a table on the number of students in each class section in each school.

Table 3

Student Participants by School and Academic Program

School (Program)	Student Participants in Class Section 1	Student Participants in Class Section 2	Total Number of Students Across 2 Class Sections
District A			
School 1 (IB)	20	24	44
School 1 (AP)	8	20	28
School 2 (AP)	24	34	58
School 3 (AP)	18	22	40
District B			
School 4 (IB)	12	22	34
School 5 (AP)	24	17	41
District C			
School 6 (IB)	25	27	52
School 7 (AP)	19	22	41

Teacher participants ($N = 6$) were teachers of either AP Human Geography ($n = 4$) or IB Inquiry Skills ($n = 2$) at each participating high school. Two teachers taught at the same high school (one in the IB program and one teaches AP classes). Most teacher participants were in District A (4 teachers) and 2 teachers participants were in District B. Four teachers were female, and two from District A were male (both teach AP). The mean teacher age was 39.17 years old ($SD = 9.56$; range: 25 to 50). The mean number of years teaching in career was 12.67 ($SD =$

8.07; range 3 to 27), the mean number of years teaching at current school was 6.50 (*SD* = 3.02;

range: 3 to 11), and the mean number of years teaching AP/IB courses was 6.83 (*SD* = 8.89;

range: 1 to 24). Other relevant teacher demographic data (ethnicity, gender, educational level) of

the teacher sample is reported in Table 4.

Table 4

Educator Demographic Participants

	Teachers (*n*=6)	
Variable	*n*	%
District		
District A	4	66.67
District B	2	33.33
Subject Taught/Program		
AP	4	66.67
IB	2	33.33
Sections of AP Human Geo/IB Inquiry Taught		
1-2	4	66.67
3-4	1	16.67
5-6	1	16.67
Gender		
Male	2	33.33
Female	4	66.67
Ethnicity		
Hispanic or Latino	1	16.67
Not Hispanic or Latino	5	83.33
Race		
Asian, Native Hawaiian, Pacific Islander	--	--
Black or African American	--	--
White, Non-Hispanic	6	100
Highest Education Level		
Bachelors/College Degree	3	50
Master's Degree	3	50
M.A. + 30 (or equivalent)	--	--

Measures

      Demographic information. Participating students completed a 1-page demographics form in August 2017 as part of the larger study to evaluate the efficacy of the ACE Program. On the demographic information form, students indicated their ethnic identity, gender, age, and parent educational level. The demographics form for teachers asked participants about age, gender, ethnicity, program taught in, number of sections taught of either AP Human Geography or IB Inquiry Skills, and number of years teaching. The demographic form for teachers is provided in Appendix A. The demographic form for students is provided in Appendix B.

      Intervention Rating Profile for Teachers (IRP-15; Martens, Witt, Elliot, & Darveaux, 1985). An adaptation of the IRP-15 was used in this study to measure teachers' acceptability of the intervention. The IRP-15 in its original form is a 15-item scale to measure acceptability of an intervention for both themselves, applicability to the school environment, and to other teachers. Teachers rate each item a 6-point Likert scale: (1) *Strongly Disagree,* (2) *Disagree,* (3) *Slightly Disagree,* (4) *Slightly Agree*, (5) *Agree*, and (6) *Strongly Agree.* A sample item of the IRP-15 is, "I would suggest the use of this intervention to other teachers." McCullough (2015) adapted the measure for a brief teacher intervention, and this researcher adapted the measure a step further by eliminating items not relevant to the short-term nature of the intervention, and also focusing items on any intervention effects on teachers' accuracy behaviors instead of any intervention effects on student behavior (which is the intent of the original IRP-15). Additionally, the current researcher also included several open-ended questions for qualitative feedback on any strengths or improvements on the intervention (see Appendix C). The original IRP-15 has been found to have adequate psychometric properties, with research finding high internal consistency, ranging from $\alpha = .91$ to $\alpha = .98$. The original IRP-15 has also been found to have discriminant validity

with dissimilar scales such as the Evaluative subscale of the Semantic Differential Scale, and construct validity with the Treatment Evaluation Inventory (Kazdin, 1980) and with other similar measures (Martens et al., 1985; Martens & Meller, 1989). The revised IRP-15 for this study is included in Appendix C.

Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983). The PSS is originally a 14 item measure of students' general perceived stress in the past month. For the current study, a 6 item version of the PSS was used that only contained items asking about students' perceived levels of stress, as items about coping with stress were removed in part because coping is measured by different scales in the larger study. Retained items are considered as "capturing overall feelings of general distress stemming from perceptions of overwhelming and uncontrollable life circumstances" (Lavoie & Douglas, 2012, p. 54). Students respond on a five-point Likert scale: (1) means *Never*, (2) *Almost Never*, (3) *Sometimes*, (4) *Fairly Often*, and (5) *Very Often*, how frequently in the last month they felt certain negative experiences associated with high perceived stress. A sample item from the PSS includes, "In the last month, how often have you felt nervous and "stressed"?" (Cohen, Kamarck, & Mermelstein, 1983).

The PSS is a well-used scale for measuring perceived stress, evidenced by its many existing versions for different languages and validation for use with many various populations, with 4-, 10-, and 14-item versions. A six-item version of the PSS scale has been used in several studies with AP/IB students, and has demonstrated to have good to excellent internal validity (α = .91; Suldo, Shaunessy & Hardesty, 2008). A pilot study of a version of this study's screening system using the PSS in two public high schools (Suldo, Storey, et al., 2018) also demonstrated good internal validity (α = .85). Construct validity has been demonstrated with the PSS yielding large associations with another self-report measure of environmental stressors for the AP/IB

population (Student Rating of Environmental Stressors Scale; StRESS; Suldo et al., 2015). The six item version of the PSS in previous research with AP/IB students yielded an average perceived stress score. Higher scores indicate higher levels of perceived stress in the past month. The six item version of the PSS used with AP/IB students has also demonstrated convergent validity with strong associations with different measures of students' mental health (Suldo, Shaunessy, & Hardesty, 2008). The PSS in its original form contains no score cut-offs, and is intended to be used as to compare participants' stress levels to other participants within samples (Cohen, Kamarck, & Mermelstein, 1983). The six item version of the PSS for this study is included in Appendix D, and the permission for its use for nonprofit academic research purposes is included in Appendix E.

School Satisfaction Subscale (SS; Huebner, 1994). The School Satisfaction composite is a subscale of the Multidimensional Student Life Satisfaction Scale (MSLSS; Huebner, 1994), which measures youth life satisfaction specific to various domains: family (7 items), friends (9 items), living environment (9 items), self (7 items) and school (8 items). Students respond on a six-point response metric: (1) means *Strongly Disagree*, (2) *Disagree*, (3) *Mildly Disagree*, (4) *Mildly Agree*, and (5) *Agree*, and (6) *Strongly Agree*. The School Satisfaction scale specifically measures life satisfaction in regards to the school setting. An example item is, "I look forward to going to school." The School Satisfaction scale contains three negatively-worded items (e.g., "I wish I didn't have to go to school."). After reverse-scoring those items, higher scores on each item represent higher school satisfaction.

In regards to the psychometric properties of the School Satisfaction scale, it is a frequently used measure of social-emotional wellness at school (Suldo, Bateman, & Gelley, 2014). Exploratory factor analyses of the subscale have discovered all of the items loaded onto

one factor, and were differentiated from school climate items (Zullig, Huebner, & Patton, 2011). The internal consistency of the SS subscale has been found to be good ($\alpha = .84$, Zullig et al., 2011, $\alpha = .88$, Huebner, Laughlin, Ash, & Gilman, 1998). The School Satisfaction scale has also been found to have a four-week test-retest reliability of .70 (Huebner, Laughlin, Ash, & Gilman, 1998), and a one year test-retest reliability of .60 (Elmore & Huebner, 2010). Concurrent validity of the School Satisfaction scale has been demonstrated with the Quality of School Life Scale (Epstein & McPartland, 1976; Huebner, 1994). The School Satisfaction scale had also been used previously with this study's population of interest; in a pilot study using the School Satisfaction scale as part of a screening system, the internal consistency of the scale was good ($\alpha = .84$, Suldo, Storey, et al., 2018). The eight-item version of the SS for this study is included in Appendix D, and the permission for its use for nonprofit academic research purposes is included in Appendix F.

School records. Specific data points from school records was obtained as part of the screening procedure to screen for academic risk. For students in AP Human Geography, the students' first semester class grade and their overall unweighted grade point average (GPA) from their fall 2017 semester were obtained. For students in IB Inquiry Skills, the students' first semester class grade in IB Biology and, similarly, their overall unweighted high school GPA was obtained. For IB students, IB Biology was chosen as an important indicator through consultation with IB teachers and administrators who described that course as having relatively high variability in student performance and a higher perceived association with ultimate success in the IB curriculum as compared to performance in IB Inquiry Skills. IB Inquiry Skills provides an introduction to academic skills needed for success in the IB Program, whereas IB Biology is a more standard academic subject, akin to AP Human Geography.

Recruitment Procedures

School. High schools were first selected for recruitment working alongside each district's administrator who had responsibility for oversight of magnet or accelerated curricula across the district. Eligibility for participation consisted of the high school containing an IB Program, AP classes, or both an IB and AP Program. Participating high schools were also chosen in mind to represent a diverse set of student populations, such as from different geographic areas or student demographic characteristics (such as Title 1 designation, rural area, etc.). Next, faculty representatives from the study (such as the grant's principal investigators and post-doctoral fellow) met with school administration, such as the Assistant Principal for Curriculum to introduce the larger study's rationale and what participation would entail. If school administration agreed to participate, each school co-created with the USF research team a School Partnership Plan detailing participation requirements. For intervention schools, these requirements included a mid-year screening of student academic and emotional risk.

Teacher. Teachers were selected for recruitment if he or she taught AP Human Geography or IB Inquiry Skills in a high school that was randomly selected to take part in the intervention being evaluated in the larger study. Teachers who met participation criteria also had consented previously to the larger study described earlier in this document. As the larger study (including a mid-year screening) was adopted by school administrators as part of daily school practices in Districts A and B (but not C), all teachers in Districts A and B were anticipated to participate in the screening including by completing a nomination form. However, additional

consent was sought for participation in the brief teacher intervention (Appendix G for District A, Appendix H for District B).

To recruit teachers, the current researcher met with each teacher individually to discuss the purpose of the larger study and explain what participation would look like for teachers who decided to take part in this study (evaluation of brief intervention). All six teachers consented for participation in the intervention, with none electing not to participate. Teachers were offered a $50 gift card for their participation in the intervention.

Student participants. Students were recruited for participation in the larger study if the student was in 9th grade and enrolled in the sections of AP Human Geography or IB Inquiry Skills assigned to the intervention condition. For Districts A and B, their classroom teachers read a specific recruitment script to students the first week of school to explain participation in the larger study and distributed consent forms for their parents or guardians. Students who returned forms with parent/guardian participation for the larger study (evaluation of the ACE intervention; see Appendix I for District A and Appendix J for District B) AND whose parents do not opt out of the screening (see sample notification letter from a partner school in District A in Appendix K) were eligible for participation in the current study. Although demographic information was obtained from 545 students, only students in intervention schools (n = 349) were eligible for taking part of the screening. Of the 349 total students eligible to participate, 12 students from Districts A and B, and 6 from schools in District C withdrew from their academic programs or schools and screening data were unable to be collected, leading to 331 students being eligible for data collection. Of the 331 students enrolled and consented for participation in the larger study, 329 took part in the student self-report part of the screening, as one student in District A's parent opted the student out of screening participation, and two students in District A were absent for

86

student self-report data collection. For the two absent students, school records were still able to be obtained. In total, student self-report data of emotional risk was obtained from 329 students. The participation rate for Districts A and B (did not require active parent consent to take part in the screening) was 98.85%, and the participation rate in District C was similar, 98.82%.

Data Collection Procedures

  Pilot study. To gain feedback about a preliminary version of the intervention protocol, and provide information to improve the protocol, two pilot interviews were conducted with the cooperation of two teachers familiar with the ACE Program and MAP screening protocol. The teacher participants were recruited by the current researcher, and demographics of the teacher pilot participants are described in Table 6. Two adults, one a current IB Inquiry Skills teacher and the other a former AP Human Geography teacher, were both familiar with the ACE program and had participated in the MAP screening process last year (2016-17 school year; Suldo, Storey, et al., 2018) were recruited to participate in the pilot of the intervention. The consent form signed by participants in the pilot interview is included in Appendix L. The questions verbally asked at the end of each pilot study interview are included in Appendix M. This researcher shared a summary of participants' perspectives on the interview protocol and session materials with her doctoral committee chair. In consultation with her committee, this researcher adjusted the intervention protocol in line with their feedback.

  The first participant was a previous AP Human Geography teacher and had experience with the current researcher as a co-interventionist of the ACE Program in her classes during the fall 2016 implementation pilot. The intervention session took 57 minutes in total, with the intervention protocol lasting 41 minutes, with the feedback in response to the questions lasting an additional 16 minutes. Although the first pilot participant reported enjoying the intervention

(rating 'Strongly Agree' on every item on the Teacher Intervention Rating Profile-15, the highest possible acceptability option), she provided helpful feedback which led to several changes on the intervention protocol for the next pilot interview and subsequent teacher interviews. The changes made to the intervention protocol after the first pilot interview are described below in Table 5.

Table 5

Changes to Intervention Protocol (Feedback Session) from Pilot 1

Feedback from Teacher Pilot 1	Corresponding Changes to Intervention Protocol
Recognition of the previous professional relationship between current researcher and Teacher Pilot Participant 1 aiding in teacher comfort during meeting	• Increased emphasis in protocol on affirming teacher's efforts in supporting students academically and emotionally • Mentioning high praises and compliments other research team members the teacher knows have shared with current researcher to aid in relationship and rapport building
Unfamiliarity with what 'risk' is defined as, and confusion as how many students were identified as at-risk academically and emotionally during the screening	• Creation of Student Risk Prevalence Chart (Appendix N) to visually designate what percentage of students meet criteria for risk (academically or emotionally) • Information in protocol about a student's individual level of risk may vary from student to student • Clarifying purpose of MAP Intervention is to support students showing early or signs of risk
Curiosity regarding which students were *misidentified* by the teacher	• Creation of MAP Screening Report for Interventionist (Appendix Q with identifiable student information, Appendix R de-identified), with supplemental information regarding misidentified students if teacher is curious or expresses interest during session about which students s/he nominated who did not meet other risk criteria
Concern with sharing student names with teacher, fear that teacher will change how he/she will interact with the student	• Added sentence taking the burden off of the teacher to 'fix' any students identified • Reassure teacher MAP Coaches will do their best to assist identified students towards their success • Added emphasis to keep student risk status confidential
Expressed interest in adding visual graphs to the MAP Screening Score report to aid in understanding the average teacher's and the focal teacher's hit and miss rates	• Added visual and colorful bar graphs to MAP Screening Score report

After applying the changes to the intervention protocol and materials, the second pilot intervention was conducted with an IB Inquiry Skills teacher who had also participated in the 2016-2017 pilot study of ACE and the MAP Screening. The interview was 33 minutes long, including feedback to the session. The teacher reported satisfaction with the intervention materials, flow, and clarity of the session. He reported that there would be no difficulties with the current researcher working with teachers she did not know because he saw the interventionist as coming from a "position of help." He also reported feeling very comfortable with the intervention because "teachers are always being evaluated." He stated that he understood all language used in the intervention, and had no concerns with teachers maintaining confidentiality of student risk status. The teacher also reported liking the discussion the intervention questions facilitated, and the awareness he now had on how he needs to increase his awareness of students' emotional health in his classroom. He also had no concerns that IB teachers identify students as academic risk due to low course grade in IB Biology not IB Inquiry Skills, the class that the teachers will have the student in, "because teachers see the behavioral habits of students that help students get better grades, and the IB teachers work together and discuss students who are having academic concerns." No changes were made to the intervention following this second pilot.

Table 6

Pilot Study: Educator Demographic Participants

Variable	Teachers in Pilot (*n*=2)	
	Pilot 1	Pilot 2
Subject Taught/Program	AP	IB
Sections of AP Human Geog/IB Inquiry Taught	4	2
Grades Taught	9-12	9-11
Number of Years Teaching in Career	12	20
Number of Years Teaching at Current School	8	14
Number of Years Teaching AP/IB Courses	8	17
Gender	Female	Male
Ethnicity	Not Hispanic	Not Hispanic
Race	White	White
Highest Education Level	Master's	Bachelor's

Student self-report to determine emotional status. Student data collection occurred at a single time point, at the same time as round 1 teacher nomination procedures (described below). In January 2018, around two weeks after winter break (i.e., two weeks into the second semester), a research team member visited the participants' classroom and administered the screening measures (PSS; SS scale of the MSLSS) presented on a single page. Only students whose parents did not opt them out of the screening were able to complete the rating scales. Students not eligible to participate in the screening were asked to complete other classwork. USF Research team members read the same script when describing the measure instructions and screening guidelines (Appendix O). A formal student assent process to participate in the screening assessments was not used; instead, student completion of rating scales was taken as an indication of their assent to participate. This passive student assent process is in line with partnering districts' current screening protocol, in that if parents/guardians permit their student to

participate in the screening, students are expected to complete the screening procedure unless the student overtly refuses. While students completed the rating scales, a research team member was available in the classroom to answer questions as needed. When students indicated they had completed the rating scales, a research team member scanned the paper for skipped or double-marked items to minimize missing data as possible.

Review of school records to determine academic risk. To obtain school records, the project coordinator of the larger grant obtained from the Assistant Principal at each high school each student's first semester (fall 2017) unweighted grade point average, the fall 2017 course grade in AP Human Geography for AP Students or IB Biology for IB students, and the attendance for the first semester, excused and unexcused. The Assistant Principal provided the student participants' data in a confidential manner, and the academic outcomes were added to the larger spreadsheet housed at USF that contained student self-report and teacher nomination data.

Teacher nominations. For teachers who participated in the mid year screening, data collection using a nomination form and partial class rosters occurred at two time points. The nomination form (Appendix P) was modeled after the one developed by Suldo, Storey, and colleagues (2018) and included descriptions and example symptoms of students in academic or emotional risk. As described in Chapter 2, the symptoms were generated through a collaboration between the research team and AP/IB teachers, school psychologists, counselors, and administrators. Different from the version administered by Suldo, Storey, et al. (2018), the nomination form also included information about the expected prevalence of students at-risk in the 9th grade sample of AP/IB students, to give teachers guidance on a minimum number of students they should nominate.

Round one nomination process. The first data collection time point occurred at the same time that data was collected from student surveys. A research team member visited each participating class to collect self-report data from students (described above). While students completed the short rating scales, the research team member provided teachers with the teacher nomination form. The nomination form included a list of half of the names of students in the class who were eligible to take part in the screening. Participating students were randomly assigned to be part of the first or second nomination data collection point. Teachers were asked to individually consider if each student on the list demonstrates academic risk, emotional risk, no risk, or whether the teacher does not know the student well enough to make any determination. Teachers could nominate a student for both academic and emotional risk, and as many (or as few) students at they may wish. If the teacher requested, the teacher was permitted to reference his/her academic gradebook to nominate students for academic risk. The procedure was repeated for the participating teacher's second class section. During and after teachers completed the nomination form, a research team member scanned the forms to ensure correct completion.

Data entry and preliminary analysis. The research team immediately entered data from students, school records, and teachers (first round of nomination). All data were double-checked for accuracy, with a data entry error rate was 0.14%, with an accuracy rate of 99.86%. Cut points for what was considered 'at-risk' were predetermined based off previous research with AP/IB students in a prior use of the described screening system (Suldo, Storey, et al., 2018). The cut points for considering a student 'at-risk' academically were: (a) fall semester GPA unweighted was less than 3.0, and/or (b) fall course grade in IB Biology or AP Human Geography was a C, D, or F. The cut points for considering a student 'at-risk emotionally' were: (a) score on the PSS above 3.6, and/or (b) score on the SS was lower than 3.4. As described in a previous chapter, cut

points were chosen for conceptual and analytic reasons so that the percentage of students identified at-risk on a given indicator corresponded approximately to a T score of 60 (Suldo, Storey, et al., 2018).

A 'nomination' was defined as if a teacher indicated on the nomination form that a student was at-risk emotionally or academically.

Within a week of collection of data from student self-report, school records, and round 1 of teacher nominations, this researcher created a report (Appendix Q) for each teacher that included:

- Prevalence rates for students at academic risk, emotional risk, and students with academic *and* emotional risk across the larger sample of 8 AP/IB programs that participated in the student self-report screening, and among AP/IB participants in the study who were included on the teacher's round 1 nomination list

- Percentage of students in the teacher's round 1 nomination list with academic and/or emotional risk who were correctly "caught" by the teacher in the nomination process (sensitivity)

- Percentage of students in the teacher's round 1 nomination list with academic and/or emotional risk that were missed by the teacher

- Students in the teacher's round 1 nomination list misidentified by teacher for academic and/or emotional risk

The report also reported risk prevalence rates across all classes/programs in the study, as well as included average sensitivity rates, and percentage of students missed across all teacher participants in the study. There were two versions of the report created: one that was reviewed during the intervention which included names of students who were at-risk (Appendix Q), and

one that teachers could retain after the intervention session and reference during the second round of teacher nominations (Appendix R). The second report was de-identified, such that names of students at-risk were not included. After the intervention, the first report with identifiable student information was retained by the current researcher and destroyed after the session.

Intervention (feedback session). Approximately 1 week after completion of the round one nomination form, this researcher met with each teacher individually for the intervention (i.e., feedback session), held during a teacher's planning period or another time most convenient for teacher participants. The current researcher followed a session guide/manual (Appendix S M) during all meetings with teachers. Sessions were audio recorded. All six sessions were reviewed by this researcher and coded with a Fidelity Form (Appendix T), aiming for 80% fidelity to protocol. Three of the six sessions (50%) were also coded by another member of the research team to determine inter-observer agreement.

The intervention lasted 30-40 minutes, designed to fit within one class period. The session goals were to share: (a) the importance of including teachers in screening, (b) the prevalence rates of AP/IB students at-risk academically and emotionally both in their classes and across all AP/IB high schools participating in the larger study in the current school year, (c) provide teachers feedback on their accuracy identifying 9th grade students at-risk in their classes, (d) offer an opportunity to ask questions about the screening process, and (e) to allow teachers time in session to complete the second round of nomination forms for the remaining half students in their classes who had permission to take part in the screening. The session manual is included in Appendix S. Each part of the intervention structure is briefly reviewed below:

- **Part A (Introduction):** In Part A, the interventionist first introduced herself, then reviewed the purpose of the meeting, using an agenda.

- **Part B (Purpose of Meeting/Prevalence Rates):** In Part B, the interventionist explained why teachers are included in the screening process, and shared prevalence rates for students with academic and emotional risk for AP/IB students in general (numbers drawn from all students in eight high school programs participating in the larger research study) and then within half of the students in the teacher's own classes. As part of explaining the spectrum of student risk, the interventionist used the Student Risk Prevalence Chart (Appendix N).

- **Part C (Strengths and Areas for Focus in Screening Agreement):** In Part C, the interventionist reviewed the teacher's strengths (sensitivity rate) and areas for focus (missed students; misidentified students) as determined in the first round of the screening process. For academic and emotional risk separately, the interventionist shared the teacher's number of at-risk students, and sensitivity rates, as well as the average sensitivity and miss rate for AP/IB teachers in general (numbers drawn from the combined sample of six teachers in the sample). When reviewing teachers' rate of students missed and misidentified during the round 1 nomination process, these were framed as 'Areas for Focus' as opposed to "weaknesses" or "problems." The interventionist reviewed the rate of missed students in the teacher's classes, the number of students missed, the names of students the teacher missed that emerged as at-risk academically or emotionally based on other data in the screening, and the names of the students who the teacher misidentified as at-risk academically or emotionally. The manualized intervention was developed with the goal of minimizing the likelihood that a

teacher might feel evaluated and 'graded', and maximizing the likelihood a teacher would feel supported. As specified in the manual, the interventionist posed several open-ended questions to prompt teacher reflection on his/her strengths and potential areas for improvement in the screening, and to prompt the teacher to identify any patterns in students correctly identified, missed, or misidentified. To maximize rapport and convey support, the interventionist aimed to affirm each teachers' individual strengths and commended their already existing efforts to support students' academic and emotional success (e.g., offering the ACE program through their classroom).

- **Part D (Review Nomination Process/Time for Questions):** During Part D, the interventionist briefly re-introduced the educator nomination forms and process, offering an opportunity for teachers to ask questions.

- **Part E (Complete Screening Phase II and Feedback Forms):** During Part E, teachers were given time to complete the second phase of identifications, detailed further below. Teacher participants were also asked for their quantitative and qualitative feedback on the intervention, completing the IRP-15 and open-ended questions (Appendix C).

On a separate document shared with the teacher during the intervention but not left with him or her (Appendix Q), the names of the students correctly identified as at-risk, those missed who reported risk, and those misidentified were listed. Students' raw data (score on the PSS, SS, or exact GPA) were not presented, instead only the categorical results of risk status (i.e., elevated [or not] in academic or emotional domains). Teachers were able to keep a document with prevalence rates, but without identifiable student information (Appendix R). Teachers were reminded to keep student names and risk status confidential. Of note, categorical results (e.g., green, yellow, or red status within the BESS-3 or BIMAS) for students within a school are

96

routinely reviewed by school teams in typical practical in order to (a) examine for convergence across data sources, and (b) identify students in need of additional supports or further monitoring (e.g., Amador, Cohen, Pearrow, & Sheppard, 2014; Freeman, 2017). Similar to data-based decision making for students exhibiting academic or emotional concern, students are often given a color status and a label, such as 'High Risk, Some Risk, Low Risk, Concern, or Typical', to guide systematic intervention matched to student need and intensity (Freeman, 2017). The interventionist conveyed that teachers were not being asked to be solely responsible for 'fixing' or treating students who emerged as at-risk per self-report or school records, and were reminded that interventionists from the larger research project planned to offer those students support through the MAP intervention.

Round two nomination process. Immediately after the intervention (feedback session) was complete, this researcher asked the teacher to complete the final round of screening by considering the list of students representing the second half of eligible students in the teachers' classes. While the teacher completed the nomination form for these remaining students, the interventionist remained available to answer any questions, and scanned the screening forms to make sure they are completed correctly and completely. However, for two teachers, errors in round 2 nomination forms were detected later. For one teacher, names of seven students (three of whom emerged as at-risk based on student survey or academic data) were accidentally not included on the Round 2 list; these 7 students could thus not be considered by the teacher for identification, and instead she only had 12 students correctly listed on the Round 2 roster. For the second teacher, she left two students' identification status blank, thus a determination of whether the teacher considered them at-risk could not be made.

Although fidelity to protocol was high across all six sessions (as reported in Chapter 4), two of six intervention sessions deviated somewhat from the protocol due to unanticipated results in the screening. For one teacher, random assignment of students to either Round 1 or Round 2 nomination form placed only one student who had academic risk on the first roster, and zero students with emotional risk on the first roster. The intervention was adapted to clarify that although the prevalence of student emotional risk in the teacher's Round 1 roster was 0% and the prevalence of student academic risk on Round 1 was also very low, on the Round 2 identification form at least one student self-reported emotional risk and/or had academic risk per school records (no other teachers received explicit information regarding the frequency of risk among students on their round 2 rosters). For another teacher, the intervention had to be adapted because the teacher had 100% accuracy in identifying students with emotional and/or academic risk, and therefore had a 0% miss rate. The researcher focused the session on why the teacher felt she had identified so many students at-risk correctly, and how to continue that success into the Round 2 identification form.

Data Analyses

Descriptive statistics. Descriptive statistics were conducted to summarize various aspects of data collected from students and teachers. Descriptive statistics (such as means, standard deviations, ranges, skewness, kurtosis) were calculated for students' GPA, course grades, perceived stress levels on the PSS, school satisfaction levels on the SS, teacher accuracy levels (sensitivity, specificity, PPV, NPV) at pre-test, and post-test. Descriptive statistics were also calculated for student and teacher demographic characteristics. Correlations were also calculated between all non-dichotomous predictors and outcome variables (such as student perceived stress levels and teacher accuracy indices). If teachers did not have any students who

are found to meet criteria for academic or emotional risk, he or she was excluded from accuracy descriptive statistics or research questions detecting patterns in students missed in nomination procedures, as the teacher did not have a possibility of accurately nominating a student at-risk.

Teacher accuracy. Teacher accuracy in identifying students at-risk emotionally and academically was calculated using conditional probability indices, in addition to confidence intervals for each index. A nomination was defined as whether a teacher answered 'Yes' for whether a student was at-risk either emotionally and/or academically. Teachers' nominations were compared to students' self-report levels of perceived stress, school satisfaction, and school records of students' GPA and course grade (either IB Biology or AP Human Geography). The number of true positives, false negatives, false positives, and true negatives were calculated using the matrix below in Figure 2.

	Student self-reported risk or identified at-risk by school records	Student did not self-report risk and school records did not indicate at-risk
Student Nominated by Teacher	True Positive	False Negative
Student Not Nominated by Teacher	False Positive	True Negative

Figure 2. Matrix of key terms used to describe a universal screening method's accuracy (adapted from Green & Zar, 1989)

After true positives, false negatives, false positives, and true negatives were calculated, conditional probability equations from Green and Zar (1989) were used to calculate sensitivity and specificity and equations from Albers and Kettler (2014) were used to calculate PPV and NPV, and are described below.

Sensitivity was calculated using the following equation:

$$\frac{\text{\# of True Positives}}{(\text{\# of True Positives} + \text{\# of False Negatives})}$$

Specificity was calculated using the following equation:

$$\frac{\text{\# of True Negatives}}{(\text{\# of True Negatives} + \text{\# of False Positives})}$$

Positive predictive value was calculated using the following equation:

$$\frac{\text{\# of True Positives}}{(\text{\# of True Positives} + \text{\# of False Positives})}$$

Negative predictive value was calculated using the following equation:

$$\frac{\text{\# of True Negatives}}{(\text{\# of True Negatives} + \text{\# of False Negatives})}$$

For each accuracy index, a 95% confidence interval was calculated to estimate the range at which a teacher's true accuracy rates fall. To calculate confidence intervals, due to the small sample size, the Score method was used to best approximate the accuracy proportions to a 95% confidence interval (Agresti & Coull, 1998).

Research Question One. What is the accuracy of teacher nominations to identify ninth grade students in accelerated coursework (AP/IB programs) who are at *academic* risk (defined by grade in class and GPA) in regards to:

a. Sensitivity

b. Specificity

c. Positive predictive value

d. Negative predictive value?

Research Question Two. What is the accuracy of teacher nominations to identify ninth grade students in accelerated coursework (AP/IB programs) who are at *emotional* risk (defined by elevated levels of stress and low school satisfaction) in regards to:

a. Sensitivity

b. Specificity

c. Positive predictive value

d. Negative predictive value?

To answer research questions one and two, accuracy proportions were calculated using the described conditional probability equations and formulas, using only accuracy data in the first round of nominations before the intervention occurred. Proportions were calculated for each individual teacher and calculated separately for academic and emotional risk, in addition to 95% confidence intervals for each index using the score method. Teachers who do not have any students who met at-risk criteria academically or emotionally were not included in analyses for research questions one and two.

Research Question Three. Assuming imperfect sensitivity, do teachers differ in their likelihood of missing students who meet *academic* risk criteria but are not nominated, depending on demographic characteristics of the students who are missed, such as:

a. Gender

b. Race (White/Asian and Hispanic/African American/Multi-racial/Other)

c. SES (measured by parent educational attainment)

d. Academic risk severity (measured by grade in class/GPA)?

Research Question Four. Assuming imperfect sensitivity, do teachers differ in their likelihood of missing students who meet *emotional* risk criteria but are not nominated, depending on demographic characteristics of the students who are missed, such as:

a. Gender

b. Race (White/Asian and Hispanic/African American/Multi-racial/Other)

c. SES (measured by parent educational attainment)

d. Emotional risk severity (measured by grade in class/GPA)

e. Emotional risk type (perceived stress or school satisfaction)?

To answer research questions three through six, SAS 9.4 statistical software was used to conduct Wilcoxon Signed-Rank tests. For research questions three and four, the Wilcoxon Signed-Rank test explored the extent of any potential relationships between the likelihood of differences in different student demographic characteristics within the groups of students who are correctly identified as at-risk or are missed in the first round of screening (and are in reality at-risk). The Wilcoxon Signed-Rank test was used for analyses as it is non-parametric in nature and does not assume a normal distribution or equal variances. The only assumption is that teacher observations are independent of each other, which was likely met because either teachers were working at different schools, or were told explicitly to not share study participation details with one another.

For gender, the Wilcoxon Signed-Rank test looked at if there are gender differences between students missed and not missed on academic risk and emotional risk separately. For race, the Wilcoxon Signed-Rank test explored whether there are differences between Asian/White students and Hispanic/African American/Multi-racial/Other students. For SES, a variable was created that reflects two levels of parent educational attainment that creates two groups. After the two groups were created, the low SES and high SES groups was compared across students that are missed and not missed in the first round of teacher nominations.

For Academic Risk Severity, students were split into high and low academic risk groups, such as student who have a C in his or her class (either IB Biology or AP Human Geography) or students who have a D or F in the class. These two groups were distributed to attempt to have

102

more evenly sized groups, as previous pilot screenings indicated most at-risk academically students had a C in the class. For emotional risk severity, students at-risk emotionally were split into two groups: high risk and low risk. For type of emotional risk, three paired comparisons were calculated using the Wilcoxon Signed-Rank Test, one comparison looking at the differences across students identified and students missed for low school satisfaction and both low school satisfaction and high perceived stress, one comparison looking at the differences between students identified and students missed for high perceived stress and both low school satisfaction and high perceived stress, and one comparison looking at the differences between students missed and identified between students with high perceived stress levels and students with low school satisfaction.

Research Question Five. Can a brief intervention improve teacher nominations to identify ninth grade students in accelerated coursework (AP/IB programs) who are at *academic* risk (defined by grade in class and GPA) in regards to:

a. Sensitivity

b. Specificity

c. Positive predictive value

d. Negative predictive value?

Research Question Six. Can a brief intervention improve teacher nominations to identify ninth grade students in accelerated coursework (AP/IB programs) who are at *emotional* risk (defined by elevated levels of stress and low school satisfaction) in regards to:

a. Sensitivity

b. Specificity

c. Positive predictive value

103

d. Negative predictive value?

To measure any potential impacts of a brief intervention on teacher accuracy, Wilcoxon Signed-Rank tests were conducted to examine any differences between pre- and post-test screening accuracy. Separate tests were conducted to investigate differences in sensitivity, specificity, PPV, and NPV for both academic and emotional risk.

Additional Ethical Considerations

Permission to conduct the larger study was obtained from the institutional IRB as well as from the Research Offices within Districts A, B, and C. All data gathered from teacher and student participants were kept either in a confidential database or a password-protected file for data containing student or teacher names. All participants were assigned code numbers to prevent identifying information on raw data, and all documents that connected participant names to code numbers were kept in a locked file cabinet, to which only the current researcher and approved members of the research team had access.

CHAPTER FOUR:

RESULTS

The first portion of this chapter reviews data screening and preliminary analyses to designate validity of the data set and any relationships seen between variables. Then the chapter turns to answering the aforementioned research questions. To answer the first two research questions, the results of the conditional probability indices across all teachers are presented. To answer the final four research questions, the results of Wilcoxon Signed-Rank Tests are described. Finally, information about the fidelity of the intervention delivery and qualitative feedback on the intervention are presented.

Data Screening

      Missing data. For variables of interest, the percentage of missing data was explored. Eight students (3.27%) were accidentally excluded from teachers' rosters and thus never had the opportunity to be considered by teachers. For teacher nomination status of emotional risk, data was missing from 11 students (4.51%): the aforementioned 8 left off of the roster, and 3 students for whom the teacher did not provide complete data (i.e., left blank the item that would designate the student as at-risk or not at-risk for Emotional risk, despite completing an at-risk or not at-risk determination for Academic risk). For teacher nomination status of academic risk, data was missing from 13 students (5.31%): the aforementioned 8 left off of the roster, and 5 students for whom the teacher did not provide complete data.

Data entry accuracy. For variables of interest, the minimum and maximum values of data were calculated to check for impossible values. No values were seen to be beyond possible minimum or maximum ranges. For student demographic data, data entry accuracy was evaluated by manually checking 10% of student data. For both student self-report and teacher nomination data, data entry accuracy was further evaluated by manually checking 100% of student self-report measures and 100% of teacher nomination forms. Any errors in data entry resulted in correcting the given error in the data file. For student demographic data, the data entry error rate was 0%, with an accuracy rate of 100%. For the student self-report and teacher nomination data, the data entry error rate was 0.14%, with an accuracy rate of 99.86%.

Descriptive Statistics

Descriptive statistics were calculated for student self-report scores on the PSS and SS, and school records data (fall course grade in IB Biology or AP Human Geography; unweighted fall semester GPA). The mean, standard deviation, and range of these variables are described in Table 7.

Table 7

Means, Standard Deviations, and Ranges for Student Risk Variables (Total Sample)

Measure	N	M	SD	Range	Skewness	Kurtosis
PSS	329	2.89	0.86	4.00	0.21	-0.40
SS	329	4.27	0.86	4.88	-0.32	0.16
GPA	331	3.42	0.61	3.50	-1.63	3.41
Course Grade	331	3.11	1.10	4.00	-1.35	1.31

Note. GPA = unweighted fall semester GPA, possible range of 0.0 to 4.0. Course Grade = 0 indicated 'F' grade, 1 indicated 'D' grade, 2 indicated 'C' grade, 3 indicated 'B' grade, 4 indicated 'A' grade. PSS = Perceived Stress Scale. SS = School Satisfaction Scale from the Multidimensional Students Life Satisfaction Scale.

Prevalence of Academic and Emotional Risk

Emotional risk. Emotional risk data was obtained from 329 students across the eight participating AP/IB programs in the student self-report portion of the screening procedure. Table 7 presents the means, standard deviations, range, skewness, and kurtosis of all student risk variables, for both emotional and academic risk for the larger student sample. Table 8 details the numbers of students who met criteria for risk (either academic or emotional). Of all the students ($N = 329$) that completed the School Satisfaction (SS) Scale and the Perceived Stress Scale (PSS), 234 (71.12%) students were designated as having no at-risk levels on either school satisfaction ($N = 278$, 84.50%) or perceived stress ($N = 261$, 79.33%), according to the predetermined cut points. Ninety-five (28.88%) students were identified as having emotional risk by either having low school satisfaction ($N = 51$, 15.50%), high perceived stress ($N = 68$, 20.67%), or both. In Districts A and B, the two districts who participated in the teacher nomination procedure, there were 74 students (30.45%) with signs of emotional risk; 38 (15.64%) students had at-risk school satisfaction scores and 55 (22.63%) students had at-risk perceived stress scores.

The prevalence of emotional risk varied between schools. Table 9 presents per school the levels of emotional and academic risk. In general, students in IB Programs demonstrated lower levels of emotional risk (ranging from 4.65%, 16.33%, to 23.53%), compared to AP classes' levels of emotional risk (ranging from 19.51%, 32.14%, 35.14%, 41.03%, to 53.45%).

Considering the prevalence of academic and emotional risk varied per school, and students were randomized to either the first or second roster, some teachers had more opportunities than others to correctly identify students as showing signs of risk. Of most concern

to the current study, some teachers had no opportunities at certain nomination time points to nominate any students at-risk. Table 10 details the proportion of students at-risk at each nomination time point, per school/program. At Time 1 Nomination, Teacher 1, an IB Teacher, had no students at-risk emotionally on the first roster. In contrast, Teacher 3, an AP teacher, had 16 students at-risk emotionally on the first roster (55.17% of the total Time 1 roster). On the Time 2 Nomination time point, all teachers had students with signs of emotional risk, although the numbers of students at-risk continued to vary per teacher; two teachers (Teachers 1 and 5, both IB teachers), each had 2 students at-risk at the Time 2 Nomination (9.52% and 11.76% of the roster at Time 2, respectively), and one teacher (Teacher 3, an AP teacher), had 15 students at-risk emotionally (51.72% of the roster at Time 2). As Teacher 1 did not have any students who self-reported emotional risk at the first nomination time point, this teacher could not be included in any conditional probability indices exploring teacher accuracy identifying students with emotional risk (namely, sensitivity and positive predictive value) in later analyses.

Academic risk. Academic risk data (school records) were obtained from 331 students across the eight participating AP/IB programs. Table 8 presents the overall levels of academic and emotional risk for the larger student sample across Districts A, B, and C. Of all the students that were eligible to take in the screening and school records were obtained (N = 331), school records indicated 251 (75.83%) students were designated as having no at-risk levels of either GPA ($N = 278$, 83.99%) or course grade ($N = 258$, 77.95%), according to predetermined cut points. In terms of students who did meet academic risk criteria, 80 (24.17%) students in the sample met the risk threshold and were designated as having academic risk either due to course grade, GPA, or both. In terms of at-risk unweighted fall semester GPA, 53 (16.01%) students had an at-risk GPA. A total of 73 (22.05%) students either had a C, D, or F in their fall IB Biology or

108

AP Human Geography course grade. In Districts A and B, the two districts that participated in the teacher nomination procedure, there were 62 students (25.31%) at-risk academically, with 36 (14.69%) students with an at-risk GPA and 61 (24.90%) students with an at-risk course grade.

Mirroring the prevalence of emotional risk, although the overall levels of academic risk were consistent with previous samples of AP/IB youth, individual schools and programs had varying individual levels of students with academic risk. Table 9 presents per school the level of academic and emotional risk. Consistent with the prevalence of emotional risk patterns, IB Programs tended to have less students with academic risk (ranging from 2.94%, 8.16%, to 9.09%). AP classes tended to have more students with academic risk (ranging from 10.71%, 31.03%, 37.84%, 39.02%, to 50.00%).

There was variability in the number of students with academic risk across teachers' rosters at Times 1 and 2. Table 10 details the proportion of students at-risk at each nomination time point, per school/program. On Time 1 nomination rosters, Teacher 2, an AP teacher, had no students at-risk academically. Teacher 1, an IB teacher, had 1 student at-risk academically, and Teacher 5, an IB teacher, had 1 student at-risk academically. In contrast, Teacher 4, an AP teacher, had 13 students at-risk academically on the first roster. On Time 2 nomination rosters, Teacher 5, an IB teacher, had no students with academic risk, while Teacher 3, an AP teacher, had 9 students. Teacher 2 had no students whose school records indicated academic risk on Nomination Time 1, and Teacher 5 had no students whose school records indicated academic risk on Nomination Time 2; thus, Teachers 2 and 5 could not be included in any conditional probability indices exploring teacher accuracy in identifying students with emotional risk (namely, sensitivity and positive predictive value) in later analyses looking at the changes in teacher accuracy between Times 1 and 2 Nomination time points.

109

Table 8

Proportion of Students At-Risk on Emotional and Academic Indicators (Larger Sample)

	No Risk		At-Risk	
Risk Indicator	*N*	%	*N*	%
Emotional Well-Being	234	71.12	95	28.88
Stress (PSS > 3.6)	261	79.33	68	20.67
School Satisfaction (SS < 3.4)	278	84.50	51	15.50
Academic Performance	251	75.83	80	24.17
GPA (< 3.0)	278	83.99	53	16.01
AP/IB Course Grade (C, D, or F)	258	77.95	73	22.05

Note. GPA = unweighted semester GPA. PSS = Perceived Stress Scale. SS = School Satisfaction Scale from Multidimensional Students Life Satisfaction Scale.

Table 9

Proportion of Students At-Risk on Emotional and Academic Indicators, Data Disaggregated by School (Larger Sample)

	Academic Risk		Emotional Risk	
School (District, Program)	No Risk (%)	At-risk (%)	No Risk (%)	At-risk (%)
1 (A, IB)	40 (90.91)	4 (9.09)	41 (95.35)	2 (4.65)
2 (A, AP)	25 (89.29)	3 (10.71)	19 (67.86)	9 (32.14)
3 (A, AP)	40 (68.97)	18 (31.03)	27 (46.55)	31 (53.45)
4 (A, AP)	20 (50.00)	20 (50.00)	23 (58.97)	16 (41.03)
5 (B, IB)	33 (97.06)	1 (2.94)	26 (76.47)	8 (23.53)
6 (B, AP)	25 (60.98)	16 (39.02)	33 (80.49)	8 (19.51)
7 (C, IB)	45 (91.84)	4 (8.16)	41 (83.67)	8 (16.33)
8 (C, AP)	23 (62.16)	14 (37.84)	24 (64.86)	13 (35.14)

Table 10

Proportion of Students At-Risk at Each Nomination Time Point Per School (Reduced

Sample)

	Nomination Time 1				Nomination Time 2			
	Academic Risk		Emotional Risk		Academic Risk		Emotional Risk	
School (District, Program)	No Risk (*N*, %)	At-Risk (*N*, %)	No Risk (*N*, %)	At-Risk (*N*, %)	No Risk (*N*, %)	At-Risk (*N*, %)	No Risk (*N*, %)	At-Risk (*N*, %)
1 (A, IB)	22 (95.65)	1 (4.35)	22 (100)	0 (0.00)	18 (85.71)	3 (14.29)	19 (90.48)	2 (9.52)
2 (A, AP)	13 (100)	0 (0.00)	10 (76.92)	3 (23.08)	12 (80.00)	3 (20.00)	9 (60.00)	6 (40.00)
3 (A, AP)	20 (68.97)	9 (31.03)	13 (44.83)	16 (55.17)	20 (68.97)	9 (31.03)	14 (48.28)	15 (51.72)
4 (A, AP)	7 (35.00)	13 (65.00)	13 (65.00)	7 (35.00)	12 (63.16)	7 (36.84)	10 (52.63)	9 (47.37)
5 (B, IB)	16 (94.12)	1 (5.88)	11 (64.71)	6 (35.29)	17 (100)	0 (0.00)	15 (88.24)	2 (11.76)
6 (B, AP)	15 (71.43)	6 (28.57)	19 (90.48)	2 (9.52)	6 (50.00)	6 (50.00)	9 (75.00)	3 (25.00)

Teacher ratings of student risk. Descriptive statistics were calculated for the frequency of teacher nominations at each and both time points. For emotional risk, across both nomination time points, 83 students (34.16%) were nominated by their teachers in the nomination procedure. For academic risk, 68 students (27.87%) were nominated by their teacher in the nomination procedure. In terms of students who were nominated for having both emotional and academic risk across both time points, 39 students (16.96%) were nominated as having both risk types in the nomination procedure.

Table 11 details the frequency of teacher nominations for academic and emotional risk at each nomination time point. At the first nomination time point, 35 students (28.69%) were nominated by teachers as having emotional risk, and 36 students (29.27%) were nominated by

111

teachers as having academic risk. Nineteen (15.57%) students were nominated for both academic and emotional risk by teachers at the first nomination time point. On average, teachers nominated 5.83 students as having emotional risk, 6 students as having academic risk, and 3.17 students as having both emotional and academic risk at the first nomination time point.

At the second nomination time point, 46 students (42.59%) were nominated by teachers as having emotional risk, and 32 students (29.63%) were nominated by teachers as having academic risk. Twenty students (18.52%) were nominated for both academic and emotional risk by teachers at the second nomination time point. On average, teachers nominated 7.67 students as having emotional risk, 5.33 students as having academic risk, and 3.33 students as having both emotional and academic risk at the second nomination time point.

Table 11

Frequency of Teacher Nominations for Academic and Emotional Risk

	Time 1 Nomination			Time 2 Nomination		
Teacher (District, Program)	Nominations for Emotional Risk (*N*, %)	Nominations for Academic Risk (*N*, %)	Nominations for Both Risk Types (*N*, %)	Nominations for Emotional Risk (*N*, %)	Nominations for Academic Risk (*N*, %)	Nominations for Both Risk Types (*N*, %)
1 (A, IB)	7 (30.43)	4 (17.39)	2 (8.70)	8 (38.10)	1 (4.76)	1 (4.76)
2 (A, AP)	1 (7.69)	0 (0.00)	0 (0.00)	6 (42.86)	6 (42.86)	5 (35.71)
3 (A, AP)	8 (27.59)	11 (37.93)	6 (20.69)	14 (50.00)	10 (35.71)	7 (25.00)
4 (A, AP)	11 (55.00)	12 (60.00)	7 (35.00)	8 (42.11)	9 (47.37)	4 (21.05)
5 (B, IB)	4 (25.00)	3 (17.65)	2 (12.50)	6 (42.86)	2 (14.29)	1 (7.14)
6 (B, AP)	4 (19.05)	6 (28.57)	2 (9.52)	4 (33.33)	4 (33.33)	2 (16.67)
M (SD)	5.83 (3.54)	6.00 (4.69)	3.17 (2.71)	7.67 (3.44)	5.33 (3.67)	3.33 (2.42)

Measure reliability. Cronbach's alphas for both the Perceived Stress Scale (PSS) and the School Satisfaction (SS) Scale were calculated to explore the internal reliability of student emotional risk indicators across the larger sample of eight participating schools. Cronbach's alpha values were high (> .80) for both measure: PSS (α = .87) and SS (α = .86).

Correlations. Pearson Correlation Coefficients (detailed in Table 12) were conducted to explore the relationships across student risk variables (perceived stress, school satisfaction, course grade, and GPA) and with teacher nominations, either for academic or emotional risk (0 = not at risk; 1 = yes at-risk). The relationship between the two emotional risk variables was significant ($p < .01$), with a moderate and negative relationship (r = -.42), meaning as student perceived stress increased, school satisfaction tended to decrease. The relationship between PSS score and course grade was significant ($p < .05$), with a weak and negative relationship (r = -.15), meaning as student perceived stress increased, course grade in either IB Biology or AP Human Geography tended to decrease. The relationship between PSS score and teacher nomination for academic risk was significant ($p < .01$), with a weak and positive relationship (r = .23), meaning as student perceived stress increased, students were more likely to be nominated for academic risk. The relationship between school satisfaction and GPA was significant ($p < .01$), with a weak and positive relationship (r = .18), meaning as school satisfaction increased, GPA tended to increase as well. The relationship between school satisfaction and course grade was significant ($p < .01$), with a weak and positive relationship (r = .18), meaning as school satisfaction increased, course grade in either IB Biology or AP Human Geography tended to increase as well. The relationship between school satisfaction and nomination for academic risk was also significant ($p < .01$), with a weak and negative relationship (r = .24), meaning as school satisfaction decreased, students were more likely to be nominated for academic risk.

Regarding relationship between academic indicators of student risk, the relationship between GPA and course grade was significant ($p < .01$), with a strong and positive relationship ($r = .81$), meaning as GPA increased, course grade tended to increase as well. The relationship between GPA and nomination for academic risk was also significant ($p < .01$), with a moderate and negative relationship, ($r = -.62$), meaning as GPA increased, students were less likely to be nominated as having academic risk. The relationship between GPA and nomination for emotional risk was also significant ($p < .01$), with a smaller and negative relationship, ($r = -.24$), meaning as GPA increased, students were less likely to be nominated as having emotional risk.

The relationship between course grade and nomination status for either academic *or* emotional risk was similar in terms of correlations. The relationship between course grade on either IB Biology or AP Human Geography and teacher nomination for academic risk was significant ($p < .01$), with a moderate and negative relationship ($r = -.68$), meaning as course grade increased, students were less likely to be nominated as having academic risk. The relationship between course grade on either IB Biology or AP Human Geography and teacher nomination for emotional risk was also significant ($p < .01$), with a weak and negative relationship ($r = -.31$), meaning as course grade increased, students were less likely to be nominated as having emotional risk. Finally, the relationship between teacher nomination for emotional risk and teacher nomination for academic risk was significant ($p < .01$), with a medium and positive relationship ($r = .31$), meaning as teacher nominations for academic risk were more present, students were more likely to be nominated as having emotional risk.

Table 12

Correlations Between Student Risk and Teacher Nominations (Reduced Sample)

	PSS	SS	GPA	C. Grade	Nom.Acad	Nom.Emo.
PSS	__	-.42**	-.12	-.15*	.23**	.13
SS		__	.18**	.18**	-.24**	-.13
GPA			__	.81**	-.62**	-.24**
C. Grade				__	-.68**	-.31**
Nom.Acad.					__	.31**
Nom.Emo.						__

Note. PSS = Student mean on Perceived Stress Scale, SS = Student mean on School Satisfaction scale, GPA = unweighted fall semester GPA, C.Grade = course grade, Nom.Acad = Teacher nomination for student academic risk, Nom.Emo. = Teacher nomination for student emotional risk. Teacher nomination variable coded as 0 = not at-risk 1 = yes at-risk.
*$p < .05$, **$p < .01$

Teacher Accuracy Rates

Research questions one and two were explored by calculating teacher accuracy identifying students with either emotional (defined by high perceived stress and/or low school satisfaction) or academic risk (defined by low course grade in IB Biology/AP Human Geography and/or low unweighted fall semester GPA). Conditional probability indices were calculated at the first nomination time point for (a) sensitivity (proportion of students who self-reported emotional risk and/or school records indicated risk, and teachers identified these students as such), (b) specificity (proportion of students who did not self-report emotional risk and/or school records did not indicate risk, and teachers accurately did not identify these students as such), (c) positive predictive value (PPV; proportion of students who are accurately nominated by teachers, and students also self-reported emotional risk and/or school records indicated risk, and (d) negative predictive value (NPV; proportion of students who are accurately not nominated by teachers, and students also did not self-report emotional risk and/or school records did not indicate risk).

115

To calculate each accuracy index, students were first split into either 'Risk' and 'At-Risk' groups, separately for emotional and academic risk. For emotional risk, students with PSS mean scores lower than 3.6 and SS scores above 3.4 were identified as not at-risk emotionally, and students with either PSS mean scores higher than 3.6 and/or SS scores below 3.4 were identified as at-risk emotionally. For academic risk, students with an IB Biology/AP Human Geography fall semester course grade of an A or B and an unweighted fall semester GPA of 3.0 or higher were identified as not at-risk academically, and students with either an IB Biology/AP Human Geography fall semester course grade of a C, D, or F and/or a an unweighted fall semester GPA of lower than a 3.0 were identified as at-risk academically.

Next, the agreement between each student's risk status were compared to their teacher's nomination of whether or not the teacher considered them to be at-risk in the same area (emotional or academic). Students with at-risk levels on the PSS, SS, or school records AND the teacher also nominated them as having risk in that domain were further categorized as 'True Positives.' Students without at-risk scores on the PSS, SS, or school records BUT the teacher nominated them as having risk were categorized as 'False Positives.' Students with at-risk levels on the PSS, SS, or school records BUT the teacher did not nominate them as having risk were categorized as 'False Negatives.' Students without at-risk scores on the PSS, SS, or school records did AND the teacher also did not nominate them as not having risk were categorized as 'True Negatives.' Figure 3 details how students were categorized into True Positives, False Positives, False Negatives, and True Negatives, and details the values that were found for emotional and academic risk across all teachers in the first nomination time point.

	Student self-reported emotional risk or school records indicated academic risk	Student did not self-report emotional risk or school records did not indicate academic risk
Student Nominated by Teacher	True Positive Emotional ($n = 14$) Academic ($n = 27$)	False Positive Emotional ($n = 21$) Academic ($n = 9$)
Student Not Nominated by Teacher	False Negative Emotional ($n = 19$) Academic ($n = 3$)	True Negative Emotional ($n = 67$) Academic ($n = 84$)

Figure 3. Agreement (measured in numbers of students) between teacher nomination of risk and student risk (defined by student self-report and school records; adapted from Green & Zar, 1989)

Next, sensitivity, specificity, PPV, and NPV were calculated across all teachers at the first nomination time point, and for each teacher, using formulas adapted from Green and Zar (1989) for emotional and academic risk. Due to the low teacher sample size and large variability in numbers of students at-risk on various teacher's rosters, confidence intervals were not calculated for individual teacher's accuracy indices, and individual teacher's accuracy rates should be interpreted with caution. Table 13 presents teacher accuracy (sensitivity, specificity, PPV, and NPV) for academic risk, at the first nomination time point, across all teachers and for each individual teacher. Table 14 presents teacher accuracy (sensitivity, specificity, PPV, and NPV) for emotional risk, at the first nomination time point, across all teachers and for each individual teacher.

Research Question One. What is the accuracy of teacher nominations to identify ninth grade students in accelerated coursework who are at *academic* risk (defined by grade in class and

GPA) in regards to: (a) sensitivity, (b) specificity, (c) positive predictive value, and (d) negative predictive value?

Sensitivity. To calculate sensitivity across all teachers for accurately identifying students whose school records indicated academic risk, students with at-risk academic course grades and/or GPA who were on the roster at the first nomination time point were separated from the larger student sample. In the first time point, 27 students had academic risk and were also identified by teachers as having academic risk. Also at the first time point, 3 students had academic risk, but were not nominated by their teacher as having academic risk. The following formula (Green & Zar, 1989) was used to calculate the sensitivity proportion:

$$\frac{\text{\# of true positives}}{(\text{\# of true positives} + \text{\# of false negatives})}$$

Following the formula for sensitivity, teacher sensitivity for identifying students with academic risk was calculated as described below:

$$27 / (27 + 3) = 90\%$$

Therefore, the overall sensitivity rate for using a teacher nomination procedure to identify ninth grade students at-risk academically in accelerated curricula was found to be 90%. Teachers identified a high number of students whose records indicated academic risk, only missing 10% of students whose school records indicated risk at the first nomination time point. Table 13 details the accuracy of teachers in identifying students with academic risk for the accuracy indices of sensitivity, and also specificity, PPV, and NPV.

Specificity. In the first time point, 84 students were not at-risk academically and were also not identified by teachers as having academic risk. Also at the first time point, 9 students

118

were not at-risk academically, but were nominated by their teacher as having academic risk. The following formula (Green & Zar, 1989) was used to calculate the specificity proportion:

$$\frac{\text{\# of true negatives}}{(\text{\# of true negatives} + \text{\# of false positives})}$$

Following the formula for specificity, teacher specificity for identifying students with academic risk was calculated as described below:

$$84 / (84 + 9) = 90.32\%$$

Therefore, the overall specificity rate for using a teacher nomination procedure to identify ninth grade students at-risk academically in accelerated curricula was found to be 90.32%. Teachers incorrectly nominated only 9.68% of students as having academic risk, whose school records did not indicate such.

Positive Predictive Value (PPV). In the first time point, 27 students had at-risk school records and were also correctly identified by teachers as having academic risk. Also at the first time point, 9 students were nominated as having academic risk, but were incorrectly nominated, as their school records did not indicate academic risk. The following formula (Green & Zar, 1989) was used to calculate the PPV proportion:

$$\frac{\text{\# of true positives}}{(\text{\# of true positives} + \text{\# of false positives})}$$

Following the formula for PPV, teacher PPV for identifying students with academic risk were calculated as described below:

$$27 / (27 + 9) = 75\%$$

Therefore, the overall PPV for using a teacher nomination procedure to identify ninth grade students at-risk academically in accelerated curricula was found to be 75%. Teachers identified high number of students who were at-risk academically. Out of all of the students that were nominated, only 25% of those students were incorrectly nominated, as those students' school records did not indicate such risk.

Negative Predictive Value (NPV). In the first time point, 84 students did not have at-risk school records and were also correctly not identified by teachers as having academic risk. Also at the first time point, 3 students were not nominated as having academic risk, but were missed, (incorrectly not nominated), as their school records indicated academic risk. The following formula (Green & Zar, 1989) was used to calculate the NPV proportion:

$$\frac{\text{\# of true negatives}}{(\text{\# of true negatives} + \text{\# of false negatives})}$$

Following the formula for NPV, teacher NPV for identifying students with academic risk was calculated as described below:

$$84 / (84 + 3) = 96.55\%$$

Therefore, the overall NPV for using a teacher nomination procedure to identify ninth grade students at-risk academically in accelerated curricula was found to be 96.55%. Teachers correctly did not identify a high number of students who were not at-risk academically. Out of all of the students who were not nominated as at-risk academically, teachers overall only missed 3.45% of students in their nominations as having academic risk, whose school records did not indicate such risk.

Table 13

Accuracy of Teachers in Identifying Students with Academic Risk at Screening Time 1

Risk Indicator (Dichotomized)	Sensitivity	Specificity	PPV	NPV
Academic Risk ($N = 123$)	90.00	90.32	75.00	96.55
Teacher 1 ($N = 23$)	0.00	81.82	0.00	94.74
Teacher 2 ($N = 13$)	N/A	100.00	N/A	100.00
Teacher 3 ($N = 29$)	88.89	85.00	72.73	94.44
Teacher 4 ($N = 20$)	92.31	100.00	100.00	87.50
Teacher 5 ($N = 17$)	100.00	87.50	33.33	100.00
Teacher 6 ($N = 21$)	100.00	100.00	100.00	100.00

Note. N/A = no students on first roster met criteria for risk based on grades

Research Question Two. What is the accuracy of teacher nominations to identify ninth grade students in accelerated coursework who are at *emotional* risk (defined by elevated levels of stress and low school satisfaction) in regards to: (a) sensitivity, (b) specificity, (c) positive predictive value, and (d) negative predictive value?

Sensitivity. To calculate sensitivity across all teachers for accurately identifying students who self-reported emotional risk, students who self-reported high perceived stress and/or low school satisfaction who were on the roster at the first nomination time point were separated from the larger student sample. In the first time point, 14 students self-reported emotional risk and were also identified by teachers as having emotional risk. Also at the first time point, 19 students self-reported emotional risk, but were not nominated by their teacher as having emotional risk. The following formula (Green & Zar, 1989) was used to calculate the sensitivity proportion:

$$\frac{\# \text{ of true positives}}{(\# \text{ of true positives} + \# \text{ of false negatives})}$$

Following the formula for sensitivity, teacher sensitivity for identifying students with emotional risk was calculated as described below:

121

$$14 / (14 + 19) = 42.42\%$$

Therefore, the overall sensitivity rate for using a teacher nomination procedure to identify ninth grade students at-risk emotionally in accelerated curricula was found to be 42.42%. Teachers identified a low proportion (i.e., < 50%, less than by change alone) of students who were at-risk emotionally, and missed 57.58% of students on the first round of rosters who self-reported emotional risk.

Specificity. In the first time point, 67 students were not at-risk emotionally and were also not identified by teachers as having emotional risk. Also at the first time point, 21 students were not at-risk emotionally, but were nominated by their teacher as having emotional risk. The following formula (Green & Zar, 1989) was used to calculate the specificity proportion:

$$\frac{\text{\# of true negatives}}{(\text{\# of true negatives} + \text{\# of false positives})}$$

Following the formula for specificity, teacher specificity for identifying students with emotional risk was calculated as described below:

$$67 / (67 + 21) = 76.14\%$$

Therefore, the overall specificity rate for using a teacher nomination procedure to identify ninth grade students at-risk emotionally in accelerated curricula was found to be 76.14%. Teachers correctly did not identify a high number of students who were at-risk emotionally, only incorrectly nominating 23.86% of students as having emotional risk, who did not self-report emotional risk.

Positive Predictive Value (PPV). In the first time point, 14 students self-reported emotional risk and were also identified by teachers as having emotional risk. Also at the first time point, 21 students were nominated as having emotional risk, but were incorrectly

nominated, as the students themselves did not self-report emotional risk. The following formula (Green & Zar, 1989) was used to calculate the PPV proportion:

$$\frac{\text{\# of true positives}}{(\text{\# of true positives} + \text{\# of false positives})}$$

Following the formula for PPV, teacher PPV for identifying students with emotional risk was calculated as described below:

$$14 / (14 + 21) = 40\%$$

Therefore, the overall PPV for using a teacher nomination procedure to identify ninth grade students at-risk emotionally in accelerated curricula was found to be 40%.

Negative Predictive Value (NPV). In the first time point, 67 students were not at-risk emotionally and were also not identified by teachers as having emotional risk. Also at the first time point, 19 students were not nominated as having emotional risk, but were missed, (incorrectly not nominated), as the students had self-reported emotional risk. The following formula (Green & Zar, 1989) was used to calculate the NPV proportion:

$$\frac{\text{\# of true negatives}}{(\text{\# of true negatives} + \text{\# of false negatives})}$$

Following the formula for NPV, teacher NPV for identifying students with emotional risk was calculated as described below:

$$67 / (67 + 19) = 77.91\%$$

Therefore, the overall NPV for using a teacher nomination procedure to identify ninth grade students at-risk emotionally in accelerated curricula was found to be 77.91%.

Table 14

Accuracy of Teachers in Identifying Students with Emotional Risk at Screening Time 1

Risk Indicator (Dichotomized)	Sensitivity	Specificity	PPV	NPV
Emotional Risk ($N = 121$)	42.42	76.14	40.00	77.91
Teacher 1 ($N = 22$)	N/A	68.18	N/A	100.00
Teacher 2 ($N = 13$)	0.00	90.00	0.00	75.00
Teacher 3 ($N = 29$)	37.50	84.62	75.00	52.38
Teacher 4 ($N = 20$)	57.14	46.15	36.36	66.67
Teacher 5 ($N = 16$)	40.00	81.82	50.00	75.00
Teacher 6 ($N = 21$)	100.00	89.47	50.00	100.00

Note. N/A = no students on first roster met criteria for risk based on ratings of stress and school satisfaction

Research Question Three. Assuming imperfect sensitivity, do teachers differ in their likelihood of missing students who meet *academic* risk criteria but are not nominated, depending on demographic characteristics of the students who are missed, such as:

a. Gender

b. Race (White/Asian and Hispanic/African American/Multi-racial/Other)

c. SES (measured by parent educational attainment)

d. Academic risk severity (measured by grade in class/GPA)?

To answer research question three, a subset of students was created for each participating teacher to separate only students at-risk academically (meaning the students had academic course grade of a C or below and/or a GPA of below a 3.0). Then, for each student demographic characteristic, the number of students at-risk in a given category in the first nomination time point were determined. Next, for students in each category, the percentage of students who were missed by the teacher (i.e., students were at-risk either due to school records but were not nominated by the teacher) were calculated. Finally, using the percent of students missed in each

demographic category, a Wilcoxon Signed-Rank Test was calculated in an attempt to obtain

inferential statistics. The results for each student demographic characteristic explored are below.

      Gender. To explore whether the rate of students missed as being at-risk academically in

the first teacher nomination time point differed by student gender, a Wilcoxon Signed-Rank Test

was conducted. Before any calculations, students at-risk academically in the first nomination

time point were separated from the larger sample and categorized into male and female groups.

The calculations for the test statistics are detailed in Table 15. Teacher 2 was unable to be

included in analyses, because no students on the Round 1 nomination roster had academic risk.

Teacher 6 was also unable to be included in analyses because the teacher had no difference in the

rate of female and male students missed, leading to no change in percent missed. Further,

Teachers 1 and 5 each did not have students in both male or female groups, leading them to also

not meet analytic criteria. The results of the signed-rank test did not indicate a statistically

significant difference between the rate of male and female students missed ($|W_{obtained}| = 3 >$

$|W_{critical}| = 0$, n = 2, $p > .05$), which is to be expected as a p value less than .05 is unable to be

calculated for a two-tailed Wilcoxon Signed-Rank test with only a sample size of two.

Table 15

Wilcoxon Signed-Rank Test for Missed Students who were At-Risk Academically, by Gender (Time 1)

Teacher	N at-risk		% Missed (Incorrect)		Change in % Missed	Rank of Change	
	Male (N)	Female (N)	Male (%)	Female (%)		Positive	Negative
1	1	0	100%	-	-	-	-
2	0	0	-	-	-	-	-
3	4	5	0%	20%	20	1	-
4	4	9	0%	11%	11	2	-
5	0	1	-	0%	-	-	-
6	2	3	0%	0%	-	-	-
					Rank Sums:	3	0

Note: Total rank sum = 3. $W_{critical}$ = 0 at α=.05

Race. To explore whether the rate of students missed as being at-risk academically in the first teacher nomination time point differed by student race, a Wilcoxon Signed-Rank Test was conducted. Before any calculations, students at-risk academically in the first nomination time point were separated from the larger sample and categorized into two groups: White/Asian (students who tend to be overrepresented in AP/IB programs) and Black/Hispanic/Other (students who tend to be underrepresented in AP/IB programs). The calculations for the test statistics are detailed in Table 16. Teacher 2 was unable to be included in analyses, because no students on the Round 1 nomination roster had academic risk. Teacher 6 was also unable to be included in analyses because the teacher had no difference in the rate of students missed in the two race categories, leading to no change in percent missed. Further, Teachers 1 and 5 each did not have students in both of the two race categories, leading them to also not meet analytic criteria. The results of the signed-rank test did not indicate a statistically significant difference between the rate of students missed between students who identify as White/Asian and Black/Hispanic/Other ($|W_{obtained}| = 3 > |W_{critical}| = 0$, n = 2, $p > .05$), which is to be expected as a p value less than .05 is unable to be calculated for a two-tailed Wilcoxon Signed-Rank test with only a sample size of two.

Table 16

Wilcoxon Signed-Rank Test for Missed Students who were At-Risk Academically, by Race (Time 1)

Teacher	*N* at-risk		% Missed (Incorrect)		Change in % Missed	Rank of Change	
	White/Asian (*N*)	Black/Hispanic/Other (*N*)	White/Asian (%)	Black/Hispanic/Other (%)		Positive	Negative
1	0	1	-	100%	-	-	-
2	0	0	-	-	-	-	-
3	2	7	0%	14.29%	14.29	-	1
4	4	9	0%	11.11%	11.11	-	2
5	1	0	0%	-	-	-	-
6	2	3	0%	0%	-	-	-
					Rank Sums:	0	3

Note: Total rank sum = 3. $W_{critical}$ = 0 at α=.05

SES. To explore whether the rate of students missed as being at-risk academically in the first teacher nomination time point differed by student SES, a Wilcoxon Signed-Rank Test was conducted. Before any calculations, students at-risk academically in the first nomination time point were separated from the larger sample and categorized into 'Low' or 'High' SES groups. A student was considered to have high SES if both of the student's parents had completed a college degree or beyond (such as graduate degree). A student was considered to have low SES if neither or only one parent had completed a college degree. The calculations for the test statistics are detailed in Table 17. Teacher 2 was unable to be included in analyses, because no students on the Round 1 nomination roster had academic risk. Teacher 6 was also unable to be included in analyses because the teacher had no difference in the rate of students missed in high and low SES groups, leading to no change in percent missed. Further, Teachers 1 and 5 each did not have students in both of the two SES categories, leading them to also not meet analytic criteria. The results of the signed-rank test did not indicate a statistically significant difference between the rate of students missed between high and low SES groups ($|W_{obtained}| = 3 > |W_{critical}| = 0$, n = 2, $p > .05$), which is to be expected as a p value less than .05 is unable to be calculated for a two-tailed Wilcoxon Signed-Rank test with only a sample size of two.

Table 17

Wilcoxon Signed-Rank Test for Missed Students who were At-Risk Academically, by SES (Time 1)

Teacher	N at-risk		% Missed (Incorrect)		Change in % Missed	Rank of Change	
	Low SES (N)	High SES (N)	Low SES (%)	High SES (%)		Positive	Negative
1	0	1	-	100%	-	-	-
2	0	0	-	-	-	-	-
3	5	4	20%	0%	-20	-	1
4	10	2	10%	0%	-10	-	2
5	1	0	0%	-	-	-	-
6	2	3	0%	0%	-	-	-
					Rank Sums:	0	3

Note: Total rank sum = 3. $W_{critical} = 0$ at $\alpha=.05$

Academic Risk Severity. To explore whether the rate of students missed as being at-risk academically in the first teacher nomination time point differed by student academic risk severity, a Wilcoxon Signed-Rank Test was conducted. Before any calculations, students at-risk academically in the first nomination time point were separated from the larger sample and categorized into 'medium' or 'high' risk groups. A student was considered to have medium academic risk if the student had a fall semester grade of "C" in either IB Biology or AP Human Geography and an unweighted fall semester GPA > 2.5 (but below 3.0). A student was considered to have high academic risk if the student had a fall semester grade of "D" or "F" in either IB Biology or AP Human Geography or an unweighted fall semester GPA ≤ 2.5. The calculations for the test statistics are detailed in Table 18. Teacher 2 was unable to be included in analyses, because no students on the Round 1 nomination roster had academic risk. Teacher 6 was also unable to be included in analyses because the teacher had no difference in the rate of students missed in medium and high academic risk groups, leading to no change in percent missed. Further, Teachers 1 and 5 each did not have students in both of the two academic risk severity categories, leading them to also not meet analytic criteria. The results of the signed-rank test did not indicate a statistically significant difference between the rate of students missed between medium and high academic risk groups ($|W_{obtained}| = 3 > |W_{critical}| = 0$, n = 2, *p* > .05), which is to be expected as a p value less than .05 is unable to be calculated for a two-tailed Wilcoxon Signed-Rank test with only a sample size of two.

Table 18

Wilcoxon Signed-Rank Test for Missed Students who were At-Risk Academically, by Risk Severity (Time 1)

| Teacher | N at-risk | | % Missed (Incorrect) | | Change in % Missed | Rank of Change | |
	Medium Risk (N)	High Risk (N)	Medium Risk (%)	High Risk (%)		Positive	Negative
1	1	0	100%	-	-	-	-
2	0	0	-	-	-	-	-
3	2	7	0%	14.28%	14.28	1.5	
4	7	6	14.28%	0%	-14.28		1.5
5	0	1	-	0%	-	-	-
6	3	3	100%	100%	-	-	-
					Rank Sums:	1.5	1.5

Note: Total rank sum = 3. W$_{critical}$ = 0 at α=.05

132

Research Question Four. Assuming imperfect sensitivity, do teachers differ in their likelihood of missing students who meet *emotional* risk criteria but are not nominated, depending on demographic characteristics of the students who are missed, such as:

   a. Gender

   b. Race (White/Asian and Hispanic/African American/Multi-racial/Other)

   c. SES (measured by parent educational attainment)

   d. Emotional risk severity (measured by perceived stress or school satisfaction)

   e. Emotional risk type (perceived stress or school satisfaction)?

To answer research question four, a subset of students was created for each participating teacher to separate only students at-risk emotionally (meaning the students self-reported high perceived stress and/or low school satisfaction). Then, for each student demographic characteristic, the number of students at-risk in a given category in the first nomination time point were determined. Next, for students in each category, the percentage of students who were missed by the teacher, meaning they were at-risk per student self-report but were not nominated by the teacher, was calculated. Finally, using the percent of students missed in each demographic category, a Wilcoxon Signed-Rank Test was calculated in an attempt to obtain inferential statistics. The results for each student demographic characteristic explored are below.

Gender. To explore whether the rate of students missed for emotional risk in the first teacher nomination time point differed by student gender, a Wilcoxon Signed-Rank Test was conducted. Before any calculations, students at-risk emotionally in the first nomination time point were separated from the larger sample and categorized into whether the student reported on the demographic form that they self-identified as a male or female. The calculations for the test

statistics are detailed in Table 19. Teacher 1 was unable to be included in analyses, because no student on the Round 1 nomination roster had emotional risk. Teacher 2 was also unable to be included in analyses because the teacher had no difference in the rate of male and female students missed, leading to no change in percent missed. Further, Teacher 6 each did not have both male and female students at-risk emotionally, leading them to also not meet analytic criteria. The results of the signed-rank test did not indicate a statistically significant difference between the rate of male and female students missed ($|W_{obtained}| = 6 > |W_{critical}| = 0$, n = 3, $p > .05$), which is to be expected as a p value less than .05 is unable to be calculated for a two-tailed Wilcoxon Signed-Rank test with only a sample size of three.

Table 19

Wilcoxon Signed-Rank Test for Missed Students who were At-Risk Emotionally, by Gender (Time 1)

| Teacher | N at-risk | | % Missed (Incorrect) | | Change in % Missed | Rank of Change | |
	Male (N)	Female (N)	Male (%)	Female (%)		Positive	Negative
1	0	0	-	-	-	-	-
2	1	2	100%	100%	-	-	-
3	3	13	33.33%	69.23%	35.9	2	-
4	2	5	50%	40%	-10	-	3
5	1	4	100%	50%	-50	-	1
6	0	1	0%	0%	-	-	-
					Rank Sums:	2	4

Note: Total rank sum = 6. $W_{critical} = 0$ at α=.05

Race. To explore whether the rate of students missed as being at-risk emotionally in the first teacher nomination time point differed by student race, a Wilcoxon Signed-Rank Test was conducted. Before any calculations, students at-risk emotionally in the first nomination time point were separated from the larger sample and categorized into two groups: White/Asian (students who tend to be overrepresented in AP/IB programs) and Black/Hispanic/Other (students who tend to be underrepresented in AP/IB programs), according to how the student self-identified on the demographic questionnaire. The calculations for the test statistics are detailed in Table 20. Teacher 1 was unable to be included in analyses, because no student on the Round 1 nomination roster had emotional risk. Teacher 2 was also unable to be included in analyses because the teacher had no difference in the rate of White/Asian and Black/Hispanic/Other students missed, leading to no change in percent missed. Further, Teacher 6 each did not have both White/Asian and Black/Hispanic/Other students at-risk emotionally, leading them to also not meet analytic criteria. The results of the signed-rank test did not indicate a statistically significant difference between the rate of White/Asian and Black/Hispanic/Other students missed ($|W_{obtained}| = 6 > |W_{critical}| = 0$, n = 3, $p > .05$), which is to be expected as a p value less than .05 is unable to be calculated for a two-tailed Wilcoxon Signed-Rank test with only a sample size of three.

Table 20

Wilcoxon Signed-Rank Test for Missed Students who were At-Risk Emotionally, by Race (Time 1)

| Teacher | N at-risk | | % Missed (Incorrect) | | Change in % Missed | Rank of Change | |
	White/Asian (N)	Black/Hispanic/Other (N)	White/Asian (%)	Black/Hispanic/Other (%)		Positive	Negative
1	0	0	-	-	-	-	-
2	1	2	100%	100%	-	-	-
3	6	10	50%	70%	20	3	-
4	2	5	100%	20%	-80	-	1
5	4	1	50%	100%	50	2	-
6	0	1	-	0%	-	-	-
					Rank Sums:	5	1

Note: Total rank sum = 6. $W_{critical}$ = 0 at α=.05

SES. To explore whether the rate of students missed as being at-risk emotionally in the first teacher nomination time point differed by student socioeconomic status, a Wilcoxon Signed-Rank Test was conducted. Before any calculations, students at-risk emotionally in the first nomination time point were separated from the larger sample and categorized into 'Low' or 'High' SES groups. A student was considered to have high SES if both of the student's parents had completed a college degree or beyond (such as graduate degree). A student was considered to have low SES if neither or only one parent had completed a college degree. The calculations for the test statistics are detailed in Table 21. Teacher 1 was unable to be included in analyses, because no student on the Round 1 nomination roster had emotional risk. Teacher 2 was also unable to be included in analyses because the teacher had no difference in the rate of students missed in high and low SES groups, leading to no change in percent missed. Further, Teacher 6 each did not have students in both of the two SES categories, leading them to also not meet analytic criteria. The results of the signed-rank test did not indicate a statistically significant difference between the rate of students missed between high and low SES groups ($|W_{obtained}| = 6 > |W_{critical}| = 0$, n = 3, $p > .05$), which is to be expected as a p value less than .05 is unable to be calculated for a two-tailed Wilcoxon Signed-Rank test with only a sample size of three.

Table 21

Wilcoxon Signed-Rank Test for Missed Students who were At-Risk Emotionally, by SES (Time 1)

| Teacher | N at-risk | | % Missed (Incorrect) | | Change in % Missed | Rank of Change | |
	Low SES (N)	High SES (N)	Low SES (%)	High SES (%)		Positive	Negative
1	0	0	-	-	-	-	-
2	2	1	100%	100%	-	-	-
3	8	7	62.50%	71.43%	8.93	3	
4	6	1	50%	0%	-50.00		2
5	1	4	0%	75%	75	1	-
6	0	1	-	0%	-	-	-
					Rank Sums:	4	2

Note: Total rank sum = 6. $W_{critical}$ = 0 at α=.05

Emotional Risk Severity. To explore whether the rate of students missed as being at-risk emotionally in the first teacher nomination time point differed by student emotional risk severity, a Wilcoxon Signed-Rank Test was conducted. Before any calculations, students at-risk emotionally in the first nomination time point were separated from the larger sample and categorized into 'medium' or 'high' risk groups. A student was considered to have medium emotional risk if the student had a mean perceived stress score below a 4.1 (where 4 indicates the student reports experiencing symptoms of stress 'Very Often') and a mean school satisfaction score above a 2.55 (where 2 indicates the student 'Moderately Disagree' and 3 indicates 'Mildly Disagree' with items related to satisfaction with school). A student was considered to have high emotional risk if the student had a mean perceived stress score above 4.1 (where 4 indicates the student reports experiencing symptoms of stress 'Very Often') or a mean school satisfaction score below 2.55 (where 2 indicates the student 'Moderately Disagree' and 3 indicates 'Mildly Disagree' with items related to satisfaction with school). The calculations for the test statistics are detailed in Table 22. Teacher 1 was unable to be included in analyses, because no students were at-risk emotionally on the first nomination time point. Further, Teachers 2 and 6 each did not have students in both of the two emotional risk severity categories, leading them to also not meet analytic criteria. The results of the signed-rank test did not indicate a statistically significant difference between the rate of students missed between medium and high emotional risk groups ($|W_{obtained}| = 6 > |W_{critical}| = 0$, n = 3, $p > .05$), which is to be expected as a p value less than .05 is unable to be calculated for a two-tailed Wilcoxon Signed-Rank test with only a sample size of three.

Table 22

Wilcoxon Signed-Rank Test for Missed Students who were At-Risk Emotionally, by Risk Severity (Time 1)

Teacher	N at-risk		% Missed (Incorrect)		Change in % Missed	Rank of Change	
	Medium Risk (N)	High Risk (N)	Medium Risk (%)	High Risk (%)		Positive	Negative
1	0	0	-	-	-	-	-
2	3	0	100%	-	-	-	-
3	9	7	44.44%	85.71%	41.27	2	
4	5	2	60%	0%	-60.00		1
5	2	3	50%	66.67%	16.67	3	-
6	0	2	-	0%	-	-	-
					Rank Sums:	5	1

Note: Total rank sum = 6. $W_{critical}$ = 0 at α=.05

Emotional Risk Type. To explore whether the rate of students missed as being at-risk emotionally in the first teacher nomination time point differed by student emotional risk type, three Wilcoxon Signed-Rank Tests were conducted, to look at: (a) the difference between the rate of students missed who were at-risk for only school satisfaction and the rate of students missed who were at-risk for only perceived stress, (b) the difference between the rate of students missed who were at-risk for only school satisfaction and the rate of students missed who were at-risk for both school satisfaction and perceived stress, and (c) the difference between the rate of students missed who were at-risk for perceived stress and the rate of students missed who were at-risk for both school satisfaction and perceived stress. Three tests were conducted because the Wilcoxon Signed-Rank test can only be calculated between two groups at a time. Before any calculations, students at-risk emotionally in the first nomination time point were separated from the larger sample and categorized into what the student hit the emotional risk criteria for: an elevated perceived stress score (PSS), high school dissatisfaction (SS), or if the student met emotional risk criteria for both. The calculations for the test statistics for the three paired comparisons are detailed in Tables 23, 24, and 25, respectively.

For the first comparison (the difference between the rate of students missed who were at-risk for only school satisfaction and the rate of students missed who were at-risk for only perceived stress), Teacher 1 was unable to be included in analyses, because no students were at-risk emotionally on the first nomination time point., Teacher 2 was also unable to be included in the analysis, because there were no differences in the rate of students missed who were at-risk for only perceived stress and the rate of students missed who were at-risk for only school satisfaction. Further, Teacher 6 did not have students in both emotional risk severity categories, leading them to also not meet analytic criteria. The results of the signed rank test did not indicate

142

a statistically significant difference between the rate of students missed who were only at-risk for

school satisfaction and those students missed who were only at-risk for perceived stress,

($|W_{obtained}| = 6 > |W_{critical}| = 0$, n = 3, $p > .05$), which is to be expected as a p value less than .05 is

unable to be calculated for a two-tailed Wilcoxon Signed-Rank test with only a sample size of

three.

For the second comparison (the difference between the rate of students missed who were

at-risk for only school satisfaction and the rate of students missed who were at-risk for both

school satisfaction and perceived stress), Teacher 1 was unable to be included in analyses,

because no students were at-risk emotionally on the first nomination time point. Further,

Teachers 2, 5, and 6 did not have students in both emotional risk severity categories, leading

them to also not meet analytic criteria. The results of the signed rank test did not indicate a

statistically significant difference between the rate of students missed who were only at-risk for

school satisfaction and the rate of students missed who were at-risk for both school satisfaction

and perceived stress, ($|W_{obtained}| = 3 > |W_{critical}| = 0$, n = 2, $p > .05$), which is to be expected as a p

value less than .05 is unable to be calculated for a two-tailed Wilcoxon Signed-Rank test with

only a sample size of two.

For the third comparison (the difference between the rate of students missed who were at-

risk for perceived stress and the rate of students missed who were at-risk for both school

satisfaction and perceived stress), Teacher 1 was unable to be included in analyses, because no

students were at-risk emotionally on the first nomination time point. Further, Teachers 2, 5, and

6 did not have students in both emotional risk severity categories, leading them to also not meet

analytic criteria. The results of the signed rank test did not indicate a statistically significant

difference between the rate of students missed who were only at-risk for only perceived stress

and the rate of students missed who were at-risk for both perceived stress and school satisfaction, ($|W_{obtained}| = 3 > |W_{critical}| = 0$, n = 2, $p > .05$), which is to be expected as a p value less than .05 is unable to be calculated for a two-tailed Wilcoxon Signed-Rank test with only a sample size of two.

Table 23

Missed Students who were At-Risk Emotionally, by Emotional Risk Type (Only School Satisfaction Risk and Only Perceived Stress Risk) (Time 1)

Teacher	N at-risk for Each Risk Type		% Missed (Incorrect)		Change in % Missed	Rank of Change	
	PSS (N)	SS (N)	PSS (%)	SS (%)		Positive	Negative
1	0	0	-	-	-	-	-
2	2	2	100%	100%	-	-	-
3	11	1	63.64%	0%	-64.64	-	1
4	3	2	33.33%	50%	16.67	2.5	-
5	2	3	50%	66.67%	16.67	2.5	-
6	0	2	-	0%	-	-	-
					Rank Sums:	5	1

Note: Total rank sum = 6. $W_{critical}$ = 0 at α=.05

Table 24

Missed Students who were At-Risk Emotionally, by Emotional Risk Type (Only School Satisfaction Risk and Both School Satisfaction and Perceived Stress Risk) (Time 1)

| Teacher | N at-risk for Each Risk Type | | % Missed (Incorrect) | | Change in % Missed | Rank of Change | |
	SS (N)	Both (N)	SS (%)	Both (%)		Positive	Negative
1	0	0	-	-	-	-	-
2	2	0	100%	-	-	-	-
3	1	4	0%	75%	75.00	1	-
4	2	2	50%	0%	-50.00	-	2
5	3	0	66.67%	-	-	-	-
6	2	0	0%	-	-	-	-
					Rank Sums:	1	2

Note: Total rank sum = 3. $W_{critical}$ = 0 at α=.05

Table 25

Missed Students who were At-Risk Emotionally, by Emotional Risk Type (Only Perceived Stress Risk and Both School Satisfaction and Perceived Stress Risk) (Time 1)

| Teacher | N at-risk for Each Risk Type | | % Missed (Incorrect) | | Change in % Missed | Rank of Change | |
	PSS (N)	Both (N)	PSS (%)	Both (%)		Positive	Negative
1	0	0	-	-	-	-	-
2	2	0	100%	-	-	-	-
3	11	4	63.64%	75%	11.36	2	-
4	3	2	33.33%	0%	-33.33	-	1
5	2	0	50%	-	-	-	-
6	0	0	-	-	-	-	-
					Rank Sums:	2	1

Note: Total rank sum = 3. $W_{critical}$ = 0 at α=.05

Research Question Five. Can a brief feedback and training session improve teacher nominations to identify ninth grade students in accelerated coursework who are at *academic* risk (defined by grade in class and GPA) in regards to: (a) sensitivity, (b) specificity, (c) positive predictive value, and (d) negative predictive value?

To address research questions five and six, first the same procedure was followed as in questions one and two to calculate teacher accuracy at the second nomination time point. Sensitivity, specificity, PPV, and NPV were calculated across all teachers and for each teacher at the second nomination time point after the brief intervention, using the same formulas adapted from Green and Zar (1989) for emotional and academic risk. Again, due to the low teacher sample size and large variability in numbers of students at-risk on various teacher's rosters, confidence intervals were not calculated for individual teacher's accuracy indices, and individual teacher's accuracy rates should be interpreted with caution. Table 26 presents teacher accuracy (sensitivity, specificity, PPV, and NPV) for academic risk, at the second nomination time point, across all teachers and for each individual teacher.

Table 26

Accuracy of Teachers in Identifying Students with Academic Risk at Screening Time 2

Risk Indicator (Dichotomized)	Sensitivity	Specificity	PPV	NPV
Academic Risk (*N* = 108)	77.78	86.42	65.63	92.11
Teacher 1 (*N* = 21)	33.33	100.00	100.00	90.00
Teacher 2 (*N* = 14)	100.00	72.73	50.00	100.00
Teacher 3 (*N* = 28)	87.50	85.00	70.00	94.44
Teacher 4 (*N* = 19)	100.00	83.33	77.78	100.00
Teacher 5 (*N* = 14)	N/A	85.71	N/A	100.00
Teacher 6 (*N* = 12)	50.00	83.33	75.00	62.50

Sensitivity (Time 2). To calculate sensitivity across all teachers for accurately identifying students whose school records indicated academic risk after participation in a brief intervention,

students with at-risk academic course grades and/or GPA who were on the roster at the second

nomination time point were separated from the larger student sample. In the second time point,

21 students were at-risk academically and were also correctly identified by teachers as having

academic risk. Also at the second time point, 6 students were at-risk academically, but were

incorrectly not nominated by their teacher as having academic risk. The following formula

(Green & Zar, 1989), was used to calculate the sensitivity proportion:

$$\frac{\text{\# of true positives}}{(\text{\# of true positives} + \text{\# of false negatives})}$$

Following the formula for sensitivity, teacher sensitivity for identifying students with

academic risk were calculated as described below:

$$21 / (21 + 6) = 77.78\%$$

Therefore, the overall sensitivity rate after the brief intervention was found to be 77.78%.

Teachers identified a high number of students who were at-risk academically, only missing

22.22% of students with at-risk school records at the second nomination time point.

Next, to answer research question five, concerned with changes in accuracy across

nomination time points one and two, a Wilcoxon Signed-Rank Test was calculated in an attempt

to obtain inferential statistics, although a p value less than .05 was unable to be calculated with

only a sample size of four. The calculations for the test statistics are detailed in Table 27. The

results of the signed-tank test did not indicate a statistically significant increase in sensitivity

identifying students with academic risk from nomination time points one and two ($|W_{obtained}| = 5$

$> |W_{critical}| = 0$, n = 4, $p > .05$)

Table 27

Wilcoxon Signed-Rank Test for Sensitivity (Academic Risk)

Teacher	Sensitivity		Change	Rank of Change	
	Time 1	Time 2		Positive	Negative
1	0.00	33.33	33.33	2	
3	88.89	87.50	-1.39		4
4	92.31	100	7.69	3	
6	100	50	-50		1
			Rank Sums:	5	5

Note: Total rank sum = 10. $W_{critical} = 0$ at α=.05

Specificity (Time 2). To calculate specificity across all teachers for accurately not identifying students whose school records did not indicate academic risk after participation in a brief intervention, students with academic course grades above a C and/or GPA a 3.0 or above (therefore not considered to be at-risk academically) who were on the roster at the second nomination time point were separated from the larger student sample. In the second time point, 70 students were not at-risk academically and were also correctly not identified by teachers as having academic risk. Also at the second time point, 11 students were not at-risk academically, but were incorrectly nominated by their teacher as having academic risk. The following formula (Green & Zar, 1989), was used to calculate the specificity proportion:

$$\frac{\text{\# of true negatives}}{(\text{\# of true negatives} + \text{\# of false positives})}$$

Following the formula for specificity, teacher specificity for identifying students with academic risk were calculated as described below:

$$70 / (70 + 11) = 86.42\%$$

Therefore, the overall specificity rate after the brief intervention was found to be 86.42%. Teachers correctly did not identify high number of students who were at-risk academically, only incorrectly nominating 13.58% of students as having academic risk, whose school records did not indicate as such.

Next, to answer research question five, concerned with changes in accuracy across nomination time points one and two, a Wilcoxon Signed-Rank Test was calculated in an attempt to obtain inferential statistics. Teacher 3, who obtained a specificity value of 85% for both nomination time points one and two, was unable to be included while calculating the test statistics due to experiencing no change, either in a positive or negative direction. The calculations for the test statistics are detailed in Table 28. The results of the signed-tank test did not indicate a statistically significant increase in specificity identifying students without academic risk from nomination time points one and two ($|W_{obtained}| = 5 > |W_{critical}| = 0$, n = 3, $p > .05$), which is to be expected as a p value less than .05 is unable to be calculated for a Wilcoxon Signed-Rank test with only a sample size of three.

Table 28

Wilcoxon Signed-Rank Test for Specificity (Academic Risk)

Teacher	Specificity		Change	Rank of Change	
	Time 1	Time 2		Positive	Negative
1	81.82	100	18.18	1	
4	100	83.33	-16.67		2.5
6	100	83.33	-16.67		2.5
			Rank Sums:	1	5

Note: Total rank sum = 6. $W_{critical} = 0$ at $\alpha = .05$

Positive Predictive Value (PPV; Time 2). To calculate the positive predictive value across all teachers for accurately identifying students whose school records indicated academic

risk after participation in a brief intervention, students who were nominated by teachers at the second nomination time point as having academic risk were separated from the larger student sample. In the second time point, 21 students had at-risk school records and were also correctly identified by teachers as having academic risk. Also at the second time point, 11 students were nominated as having academic risk, but were incorrectly nominated, as their school records did not indicate academic risk. The following formula (Green & Zar, 1989), was used to calculate the PPV proportion:

$$\frac{\text{\# of true positives}}{(\text{\# of true positives} + \text{\# of false positives})}$$

Following the formula for PPV, teacher PPV for identifying students with academic risk were calculated as described below:

$$21 / (21 + 11) = 65.63\%$$

Therefore, the overall PPV after the brief intervention was found to be 65.63%. Teachers identified a moderate to high number of students who were at-risk academically, incorrectly nominating 34.37% of students as having academic risk, whose school records did not indicate such risk.

Next, to answer research question five, concerned with changes in accuracy across nomination time points one and two, a Wilcoxon Signed-Rank Test was calculated in an attempt to obtain inferential statistics. The calculations for the test statistics are detailed in Table 29. The results of the signed-tank test did not indicate a statistically significant increase in PPV identifying students with academic risk from nomination time points one and two ($|W_{obtained}| = 9 > |W_{critical}| = 0$, n = 4, $p > .05$), which is to be expected as a p value less than .05 is unable to be calculated for a Wilcoxon Signed-Rank test with only a sample size of four.

152

Table 29

Wilcoxon Signed-Rank Test for PPV (Academic Risk)

Teacher	PPV		Change	Rank of Change	
	Time 1	Time 2		Positive	Negative
1	0.00	100	100	1	
3	72.73	70	-2.73		4
4	100	77.78	-22.22		3
6	100	75	-25		2
			Rank Sums:	1	9

Note: Total rank sum = 10. $W_{critical} = 0$ at α=.05

Negative Predictive Value (NPV; Time 2). To calculate the negative predictive value across all teachers for accurately not identifying students whose school records did not indicate academic risk after participation in a brief intervention, students who were not nominated by teachers at the second nomination time point as not having academic risk were separated from the larger student sample. In the second time point, 70 students did not have at-risk school records and were also correctly not identified by teachers as having academic risk. Also at the second time point, 6 students were not nominated as having academic risk, but were missed, (incorrectly not nominated), as their school records indicated academic risk. The following formula (Green & Zar, 1989), was used to calculate the NPV proportion:

$$\frac{\text{\# of true negatives}}{(\text{\# of true negatives} + \text{\# of false negatives})}$$

Following the formula for NPV, teacher NPV for identifying students with academic risk were calculated as described below:

$$70 / (70 + 6) = 92.11\%$$

Therefore, the overall NPV after the brief intervention was found to be 92.11%. Teachers correctly did not identify a high number of students who were not at-risk academically, only missing 7.89% of students in their nominations as having academic risk, whose school records did not indicate such risk.

Next, to answer research question five, concerned with changes in accuracy across nomination time points one and two, a Wilcoxon Signed-Rank Test was calculated in an attempt to obtain inferential statistics. Teacher 3, who obtained a NPV value of 94.44% for both nomination time points one and two, was unable to be included while calculating the test statistics due to experiencing no change, either positively or negatively. The calculations for the test statistics are detailed in Table 30. The results of the signed-tank test did not indicate a statistically significant increase in NPV accurately not identifying students without academic risk from nomination time points one and two ($|W_{obtained}| = 5 > |W_{critical}| = 0$, n = 3, $p > .05$), which is to be expected as a p value less than .05 is unable to be calculated for a Wilcoxon Signed-Rank test with only a sample size of three

Table 30

Wilcoxon Signed-Rank Test for NPV (Academic Risk)

Teacher	NPV		Change	Rank of Change	
	Time 1	Time 2		Positive	Negative
1	94.74	90	-4.74		3
4	87.50	100	12.50	2	
6	100	62.50	-37.50		1
			Rank Sums:	2	4

Note: Total rank sum = 6. $W_{critical} = 0$ at α=.05

Research Question Six. Can a brief intervention improve teacher nominations to identify ninth grade students in accelerated coursework who are at *emotional* risk (defined by elevated levels of stress or low school satisfaction) in regards to: (a) sensitivity, (b) specificity, (c) positive predictive value, and (d) negative predictive value?

Sensitivity (Time 2). To calculate sensitivity across all teachers for accurately identifying students who self-reported emotional risk after participation in a brief intervention, students who self-reported high perceived stress and/or low school satisfaction who were on the roster at the second nomination time point were separated from the larger student sample. In the second time point, 18 students self-reported emotional risk and were also correctly identified by teachers as having emotional risk. Also at the second time point, 18 students self-reported emotional risk, but were incorrectly not nominated by their teacher as having emotional risk. The following formula (Green & Zar, 1989), was used to calculate the sensitivity proportion:

$$\frac{\text{\# of true positives}}{(\text{\# of true positives} + \text{\# of false negatives})}$$

Following the formula for sensitivity, teacher sensitivity for identifying students with emotional risk were calculated as described below:

$$18 / (18 + 18) = 50\%$$

Therefore, the overall sensitivity rate after the brief intervention was found to be 50%. Teachers identified the same proportion as by chance (50%) of students who were at-risk emotionally, and missed 50% of students who self-reported emotional risk who were listed on the first nomination student roster. Table 31 presents teacher accuracy (sensitivity, specificity, PPV, and NPV) for emotional risk, at the second nomination time point, across all teachers and for each individual teacher.

155

Table 31

Accuracy of Teachers in Identifying Students with Emotional Risk at Screening Time 2

Risk Indicator (Dichotomized)	Sensitivity	Specificity	PPV	NPV
Emotional Risk ($N = 110$)	50.00	59.46	37.50	70.97
Teacher 1 ($N = 21$)	50.00	63.16	12.50	92.31
Teacher 2 ($N = 14$)	66.67	75.00	66.67	75.00
Teacher 3 ($N = 28$)	64.29	64.29	64.29	64.29
Teacher 4 ($N = 19$)	33.33	50.00	37.50	45.46
Teacher 5 ($N = 16$)	50.00	50.00	12.50	87.50
Teacher 6 ($N = 12$)	0.00	55.56	0.00	62.50

Next, to answer research question six, concerned with changes in accuracy across nomination time points one and two, a Wilcoxon Signed-Rank Test was calculated in an attempt to obtain inferential statistics. The calculations for the test statistics are detailed in Table 32. The results of the signed-tank test did not indicate a statistically significant increase in sensitivity accurately identifying students with emotional risk from nomination time points one and two ($|W_{obtained}| = 5 > |W_{critical}| = 0$, n = 5, $p > .05$), which is to be expected as a p value less than .05 is unable to be calculated for a Wilcoxon Signed-Rank test with only a sample size of five.

Table 32

Wilcoxon Signed-Rank Test for Sensitivity (Emotional Risk)

Teacher	Sensitivity		Change	Rank of Change	
	Time 1	Time 2		Positive	Negative
2	0.00	66.67	66.67	2	
3	37.50	64.29	26.79	3	
4	57.14	33.33	-23.81		4
5	40.00	50.00	10.00	5	
6	100	0.0	-100		1
			Rank Sums:	10	5

Note: Total rank sum = 15. $W_{critical}$ = 0 at α=.05

Specificity (Time 2). To calculate specificity across all teachers for accurately not identifying students who did not self-report emotional risk after participation in a brief intervention procedure, students who self-reported perceived stress and/or school satisfaction in the normal range, who were on the roster at the second nomination time point, were separated from the larger student sample. In the second time point, 44 students were not at-risk emotionally and were also correctly not identified by teachers as having emotional risk. Also at the second time point, 30 students were not at-risk emotionally, but were incorrectly nominated by their teacher as having emotional risk. The following formula (Green & Zar, 1989), was used to calculate the specificity proportion:

$$\frac{\text{\# of true negatives}}{(\text{\# of true negatives} + \text{\# of false positives})}$$

Following the formula for specificity, teacher specificity for identifying students with emotional risk were calculated as described below:

$$44 / (44 + 30) = 59.46\%$$

157

Therefore, the overall specificity rate after the brief intervention was found to be 59.46%. Teachers correctly did not identify a moderate number of students who were at-risk emotionally, only incorrectly nominating 40.54% of students as having emotional risk, who did not self-report emotional risk.

Next, to answer research question six, concerned with changes in accuracy across nomination time points one and two, a Wilcoxon Signed-Rank Test was calculated in an attempt to obtain inferential statistics. The calculations for the test statistics are detailed in Table 33. The results of the signed-tank test did not indicate a statistically significant increase in specificity accurately not identifying students without emotional risk from nomination time points one and two ($|W_{obtained}| = 10 > |W_{critical}| = 0$, n = 5, $p > .05$), which is to be expected as a p value less than .05 is unable to be calculated for a Wilcoxon Signed-Rank test with only a sample size of five.

Table 33

Wilcoxon Signed-Rank Test for Specificity (Emotional Risk)

Teacher	Specificity		Change	Rank of Change	
	Time 1	Time 2		Positive	Negative
2	90	75	-15		4
3	84.62	64.29	-20.33		3
4	46.15	50	3.85	5	
5	81.82	50	-31.82		2
6	89.47	55.56	-33.91		1
			Rank Sums:	5	10

Note: Total rank sum = 15. $W_{critical} = 0$ at α=.05

Positive Predictive Value (PPV; Time 2). To calculate the positive predictive value across all teachers for accurately identifying students who self-reported emotional risk after participation in a brief intervention procedure, students who were nominated by teachers at the

158

second nomination time point as having emotional risk were separated from the larger student sample. In the second time point, 18 students self-reported emotional risk and were also correctly identified by teachers as having emotional risk. Also at the second time point, 30 students were nominated as having emotional risk, but were incorrectly nominated, as the students themselves did not self-report emotional risk. The following formula (Green & Zar, 1989), was used to calculate the PPV proportion:

$$\frac{\text{\# of true positives}}{(\text{\# of true positives} + \text{\# of false positives})}$$

Following the formula for PPV, teacher PPV for identifying students with emotional risk were calculated as described below:

$$18 / (18 + 30) = 37.50\%$$

Therefore, the overall PPV after the brief intervention was found to be 37.50%. Teachers identified a low proportion of students who were at-risk emotionally, incorrectly nominating 62.50% of students as having emotional risk, who the students themselves did not self-report emotional risk.

Next, to answer research question six, concerned with changes in accuracy across nomination time points one and two, a Wilcoxon Signed-Rank Test was calculated in an attempt to obtain inferential statistics. The calculations for the test statistics are detailed in Table 34. The results of the signed-tank test did not indicate a statistically significant increase in PPV accurately identifying students with emotional risk from nomination time points one and two ($|W_{obtained}| = 10 > |W_{critical}| = 0$, n = 5, $p > .05$), which is to be expected as a p value less than .05 is unable to be calculated for a Wilcoxon Signed-Rank test with only a sample size of five.

Table 34

Wilcoxon Signed-Rank Test for PPV (Emotional Risk)

Teacher	PPV		Change	Rank of Change	
	Time 1	Time 2		Positive	Negative
2	0.00	66.67	66.67	1	
3	75	64.29	-10.71	4	
4	36.36	37.50	1.14		5
5	50	12.50	-37.50		3
6	50	0.00	-50		2
			Rank Sums:	5	10

Note: Total rank sum = 15. $W_{critical} = 0$ at $\alpha=.05$

Negative Predictive Value (NPV; Time 2). To calculate the negative predictive value across all teachers for accurately not identifying students whose school records did not indicate emotional risk after participation in a brief intervention, students who were not nominated by teachers at the second nomination time point as not having emotional risk were separated from the larger student sample. In the second time point, 67 students were not at-risk emotionally and were also correctly not identified by teachers as having emotional risk. Also at the second time point, 19 students were not nominated as having emotional risk, but were missed, (incorrectly not nominated), as the students had self-reported emotional risk. The following formula (Green & Zar, 1989), was used to calculate the NPV proportion:

$$\frac{\text{\# of true negatives}}{(\text{\# of true negatives} + \text{\# of false negatives})}$$

Following the formula for NPV, teacher NPV for identifying students with emotional risk were calculated as described below:

$$44 / (44 + 18) = 70.97\%$$

160

Therefore, the overall NPV after the brief intervention was found to be 70.97%. Teachers correctly did not identify a high number of students who were not at-risk emotionally, only missing 29.03% of students in their nominations as having emotional risk, who the students themselves self-reported emotional risk.

Next, to answer research question six, concerned with changes in accuracy across nomination time points one and two, a Wilcoxon Signed-Rank Test was calculated in an attempt to obtain inferential statistics. Teacher 2, who obtained a NPV value of 75% for both nomination time points one and two, was unable to be included while calculating the test statistics due to experiencing no change, either positively or negatively. The calculations for the test statistics are detailed in Table 35. The results of the signed-tank test did not indicate a statistically significant increase in NPV accurately not identifying students without emotional risk from nomination time points one and two ($|W_{obtained}| = 3 > |W_{critical}| = 0$, n = 4, $p > .05$), which is to be expected as a p value less than .05 is unable to be calculated for a Wilcoxon Signed-Rank test with only a sample size of four.

Table 35

Wilcoxon Signed-Rank Test for NPV (Emotional Risk)

Teacher	NPV		Change	Rank of Change	
	Time 1	Time 2		Positive	Negative
3	52.38	64.29	11.91	4	
4	66.67	45.46	-21.21		2
5	75	87.50	12.50	3	
6	100	62.50	-37.50		1
			Rank Sums:	7	3

Note: Total rank sum = 10. $W_{critical} = 0$ at α=.05

Intervention Integrity

The extent to which the teacher intervention sessions were delivered according to design was measured by this researcher by reviewing audio-recorded intervention sessions using a fidelity checklist (Appendix T). All six sessions (100%) were reviewed by the lead interventionist (author of this dissertation), and three randomly chosen sessions (50% of sessions) were additionally reviewed by a member of the research team, specifically a graduate student trained in the intervention protocol by this researcher. For each session, intervention fidelity was calculated by taking the number of completed items on the fidelity checklist for the given session, divided over the total possible number of items on the fidelity checklist. Intervention fidelity varied from 96% to 100%, with an average fidelity rating of 99%. Five of six intervention sessions were implemented with 100% fidelity, with one session receiving a 96% fidelity rating. Interrater fidelity was 100%, meaning the second coder determined the same percent fidelity rating as determined by this researcher, across all three tapes coded. In sum, the intervention was implemented in line with the manualized protocol with high intervention integrity, as agreed upon by an independent observer.

Intervention Acceptability

Descriptive statistics were calculated to examine intervention acceptability, both in quantitative and qualitative formats. At the end of each intervention sessions (both for pilot and study sessions), teacher participants completed an adapted form of the Intervention Rating Profile-15 (IRP-15; Witt & Elliott, 1985) to explore whether teachers felt the session would be acceptable to other teachers. Qualitative feedback was gathered on the back of the IRP-15, where teachers completed open-ended questions. Questions were adapted from a previous intervention study using teacher participants (McCullough, 2015).

Feasibility. The intervention was designed to last from thirty to forty-five minutes, meaning within one teacher's planning or lunch period. Descriptive statistics of the average time length (i.e., mean), standard deviation, and range of each session in minutes, including the number of minutes spent in each part of the intervention session is presented in Table 36 below. The average intervention length was 33 minutes and 30 seconds, and they ranged from 27 minutes and 3 seconds to 44 minutes and 38 seconds. For the two longer sessions (38 minutes and 50 seconds and 44 minutes and 38 seconds), the teacher participants had a greater number of participating students to consider in the rounds 1 and 2 nomination forms, suggesting that may be a predictor of a longer intervention session. Nevertheless, all sessions were able to be completed within a high school teacher's standard planning period.

Table 36

Descriptive Analyses of Intervention Session Length (Minutes)

	Mean	Standard Deviation	Minimum	Maximum
Part A	2.81	0.43	2.27	3.30
Part B	9.75	3.43	4.53	14.44
Part C	9.56	2.91	5.16	13.59
Part D	0.60	0.40	0.26	1.20
Part E	9.71	5.38	5.20	19.38
Total Intervention Session Length	33.30	6.83	27.03	44.38

Acceptability of intervention session. Analysis of responses on the IRP-15 indicated that teachers generally found the intervention to be helpful and would be acceptable for other teachers. Table 37 displays the average responses from the IRP-15 for teacher participants. For each item on the IRP-15, each item's average varied from 4 (*Slightly Agree*) to 6 (*Strongly Agree*), with most items varying from 5 (*Agree*) to 6 (*Strongly Agree*).

163

From a total possible score of 11 to 66, the average total intervention acceptability score was 60.17. For question one, "*This would be an acceptable intervention for improving the agreement between a teacher's identification of AP/IB students with academic and emotional risk, and student self-report and school records*," four of the six teacher participants indicated *strongly agree* (6), and two of the six teacher participants indicated *agree* (5). Teachers also strongly indicated the intervention supported their growth in identifying students with academic and emotional risk.

Table 37

Survey Items of IRP-15 Adapted for Current Study (N = 6)

	Descriptive	
Questions	*M**	*SD*
1. This would be an acceptable intervention for improving the agreement between a teacher's identification of AP/IB students with academic and emotional risk, and student self-report and school records	5.67	0.52
2. Most teachers would find this intervention appropriate to use in the school environment.	5.33	0.82
3. This intervention proves effective in assisting teachers identify students who could benefit for additional supports.	5.50	0.84
4. I would suggest this intervention to other teachers.	5.50	0.84
5. Most teachers would find this intervention suitable for improving teachers' identification of 9th grade AP/IB students with academic or emotional risk.	5.50	0.55
6. This intervention would **not** result in negative side-effects for the teacher.	4.83	1.17
7. This intervention would be appropriate for a variety of teachers.	5.50	0.55
8. I liked the procedure used in this intervention.	5.67	0.52
9. This intervention was a good way to support my growth in identifying AP/IB students with academic risk.	5.50	0.84
10. This intervention was a good way to support my growth in identifying AP/IB students with emotional risk.	5.67	0.52
11. Overall, this intervention would be beneficial for a teacher.	5.50	0.55
Total Score:	60.17	7.69
Overall Score:	5.47	0.70

*Item range (possible) = 1 (Strongly disagree) to 6 (Strongly agree)

Suggested benefits of intervention. Responses to open-ended questions on the IRP-15

concerning the strengths of the intervention are presented in Table 38. Regarding the most

important things learned in the intervention, teachers reported being surprised by the frequent

disagreement between the students they felt were at-risk and which students reported risk or their

school grades indicated risk. In particular, the most visible theme were teachers noting being the

most surprised at the students they missed, i.e., did not initially identify as having *emotional* risk

but who they learned in the intervention had self-reported levels of stress or school satisfaction

that were in the at-risk range. One teacher reported that the session "made her re-think some

student behavior that [she] see[s]." Regarding what they liked best about the intervention,

teachers overall reported enjoying knowing students' risk status. One teacher responded, "the

feedback on comparing my responses with responses the students provided" was the aspect of

the session he liked the most, and one teacher responded the best part of the session for her was

"I always learn so much on how to be a more effective teacher." When asked for any additional

comments, only three of the six teachers responded. One teacher mentioned enjoying working

alongside the research team members (both for the current project and research team members

involved in other aspects of research grant). One teacher thanked the current researcher and the

research team for her participation in the larger project. Another teacher mentioned only

identifying half her class at a time was easier than if she were asked to consider her entire class

at once.

Suggested changes to the intervention. Regarding potential changes or weaknesses of

the intervention, teachers' responses for suggestions are listed in Table 39. In general, teachers

did not mention any changes appearing necessary. When asked what the teacher enjoyed least

about the intervention, four of the six teachers mentioned, "nothing" or "none." Another teacher

reported the thing that she liked least was that she did not achieve 100% accuracy on the first round of teacher nominations. One teacher did express concerns regarding how a teacher may change their opinions or actions towards students after seeing who in their class is emotionally at-risk, responding, "not that it will likely affect my teaching but seeing the names next to "Emotionally" or "Academically" at risk leads me to question their status and role in the classroom." For suggestions on how to improve the intervention, five of the six teachers did not provide any suggestions for change. Only one teacher, the same teacher who suggested changes in the previous question, provided any suggestions for improvement. He reported the session could be improved by only showing teachers de-identified student data and then providing student names as examples of students missed or misidentified.

Table 38

Teacher Responses to Open-Ended Items Regarding Intervention Strengths

What do you feel are some of the most important things you learned about in the feedback session?

- "That not all of the students I thought needed emotional support did according to their survey"
- "Wow- I was really surprised by the emotional identifications and it made me re-think some student behavior that I see"
- "That I am not catching all of my students' emotional stress"
- "Recognizing factors of emotional distress in less common forms"
- "I learned what my strengths and weaknesses are in identifying at-risk kids"
- "The [low] correlation between school satisfaction and emotional well-being that the students learned about showed in the numbers. The academic side seems to be the toughest for 9th graders."

What did you like best about the feedback session?

- "I was able to see who was identified"
- "The feedback on comparing my responses with responses the students provided"
- "That I was right about a lot of my students. Confirms some of my thoughts"
- "Data-driven"
- "I always learn so much on how to be a more effective teacher"
- "I enjoyed seeing the numbers for all participants, not just myself. It's interesting to me to see how other students are doing."

Any additional comments?

- "Every person that I had contact with during the process was great. [USF Research Team Member] and [Current Researcher] are both refreshing and professional."
- "Thank you for selecting me to be a part of this program [Referring to both the current study and larger study]- it was an amazing experience"
- "Half of the students each time for identification was better for me than trying all at once."

Table 39

Teacher Responses to Open-Ended Items Regarding How to Improve the Intervention Session

What did you like least about the feedback session?

- None (4 teachers)
- "Not that it will likely affect my teaching but seeing the names next to "Emotionally" or "Academically" at risk leads me to question their status and role in the classroom."
- "That I [did not] identify ALL the emotionally at-risk students."

What suggestions do you have to improve the feedback session?

- None (3 teachers)
- "I really enjoyed the feedback"
- "Nothing, was comfortable and took a good amount of time. Very beneficial."
- "Provide the data without names first. And after show the names to provide examples."

CHAPTER FIVE:

DISCUSSION

The purpose of the current study was threefold: to explore the accuracy of teachers identifying students in AP/IB programs at-risk emotionally and/or academically, explore patterns among demographic or symptom characteristics of students missed in the teacher nomination procedure, and to evaluate the effect of a brief intervention on teacher accuracy in identifying students with emotional and/or academic risk. The following chapter relays the findings, and places results within the context of previous research. Next, the study's limitations are discussed. Then, implications of findings for school psychologists and directions for future research are detailed.

Prevalence of Academic and Emotional Risk

Although not associated with a specific research question, this study first explored the prevalence of academic and emotional risk in a new sample of ninth grade students either in AP Human Geography or IB Inquiry Skills. Almost a quarter of students (24.17%) were found to have *academic risk* due to course grades (22.05%) or unweighted fall semester GPA (16.01%). For academic risk in a different sample (the pilot study that determined the screening cut points used in the current study), 20.10% of students had at-risk academic status (Suldo et al., 2018), either due to a low GPA (7.57%) or an at-risk course grade (18.09%). Therefore, the prevalence of academic risk in the current sample was somewhat similar to the pilot study's risk sample, but there are 4% more students at-risk in the current sample which features a larger number of participating schools and programs.

Almost one-third (28.88%) of students were at-risk emotionally with either low school satisfaction (15.50%) or high perceived stress (20.67%). The prevalence of emotional risk found in the current study mirrors previous research with a similar population of students in accelerated curricula. In the aforementioned earlier sample, 16.12% of students had risk due to low school satisfaction and only 15.13% of students had risk due to high perceived stress (Suldo, Storey, et al., 2018). The prevalence of emotional risk in the current sample was quite similar with regard to school satisfaction, but 5.5% more students met criteria for elevated stress. Given the similarity of prevalence of students with academic and emotional risk (within about 5% per indicator), the cut points established in Suldo, Storey, et al. (2018) seemed to identify a reasonable percentage of students in a separate sample, which supports future application of these cut scores in screening of other samples of AP/IB youth.

Teacher Accuracy in Identifying Students with Academic or Emotional Risk

The first two research questions within this study were concerned with how accurately teachers could identify the ninth grade students in AP/IB programs that evidence signs of academic and/or emotional risk as determined by methods viewed as reliable but potentially more laborious, specifically review of end-of-semester course grades (academic status) or student self-report of stress and school satisfaction (emotional status). Accuracy was defined in four ways, using the conditional probability indices sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV).

Teacher accuracy in identifying academic risk. In terms of the proportion of students whose school records (grades) indicated risk, across all participating and eligible teachers ($n = 5$), the sensitivity rate was 90% with respect to correctly nominating the students who were at-risk academically. Teachers' individual sensitivity rates ranged from 0% to 100% (two teachers

170

had 100% sensitivity identifying academic risk). In terms of the proportion of students whose school records did not indicate risk, across all participating and eligible teachers ($n = 6$), the specificity rate was 90.32% with respect to accurately not nominating students without academic risk. Teachers' individual specificity rates ranged from 81.82% to 100% (three teachers had 100% specificity accurately not identifying students without academic risk). In terms of the proportion of students who are accurately nominated by teachers, and students' school records also indicated risk (PPV), across all participating and eligible teachers ($n = 5$), the PPV was 75% with respect to accurately identifying students with academic risk. Teachers' individual PPV ranged from 0% to 100% (two teachers had 100% PPV) identifying academic risk. In terms of the proportion of students who are accurately not nominated by teachers, and students' school records did not indicate risk (NPV), across all participating and eligible teachers ($n = 6$), the NPV was 96.55% with respect to accurately not identifying students without academic risk. Teachers' individual NPV ranged from 87.50% to 100% (three teachers had 100% NPV) accurately not identifying students without academic risk. In sum, teachers were highly accurate (≥90%) when tasked with identifying students with academic risk, with several teachers identifying 100% of students who were at-risk academically. This finding is perhaps not surprising, as teachers spend much of their school year entering, calculating, and analyzing student academic risk indicators in their class. Additionally, teachers were not banned from accessing resources, such as their online gradebook or student exams, to check academic risk while completing the nomination form. Such archival indicators may not be an option as a resource to consult with identifying students with emotional risk.

Nevertheless, individual teachers varied significantly in their accuracy of identifying students with academic risk. In terms of sensitivity (the accuracy index most valued when

171

evaluating a screening tool), teachers varied from 0 to 100%. The variance in accuracy observed in this study cannot be separated from methodological difficulties due to low sample sizes for several teachers. One teacher had zero students with academic risk per semester grades on the first nomination time point, and two more teachers had only one student at-risk on the first roster. In contrast, two teachers had 9 and 13 students with academic risk on their roster, providing more opportunities to correctly identify students as at-risk academically. Therefore, it is hard to make any substantive conclusions about variability in teacher accuracy in the academic domain, due to many teachers having few if any opportunities to pick-up on student academic problems.

The finding in this sample that teachers were, taken together, highly accurate in identifying students at-risk academically mirrors past research both for AP/IB youth, and for teachers as a whole. In the earlier sample examined by Suldo, Storey et al. (2018), teachers identified 61% of students at-risk per academic school records, which was somewhat lower than the present study. One key methodological difference between the current and the earlier study that may explain some differences between teacher accuracy is that in the earlier (pilot) study, teachers were asked to identify students at-risk ("[students who] demonstrate academic or emotional challenges in AP/IB"; Suldo, Storey, et al., 2018), and were not asked to differentiate students who they believed were at-risk academically and/or emotionally. In placing the current findings into the larger literature base, prior research has found that teachers identify students with academic difficulties at higher rates than students with emotional concerns (Walker, Nishioka, Zeller, Severson, & Eeeil, 2000), perhaps due to teachers' heightened awareness of students' academic progress. Additionally, teacher performance evaluations and sometimes even end of the year bonuses are often tied to student performance on academic indicators, providing incentives for teachers to periodically monitor and track students with academic risk on a regular

172

basis. Overall, using teacher nominations as a method to identify ninth grade students in AP/IB programs who are at-risk academically seemed to be highly accurate and may be an easier substitute in some cases than obtaining school records in the event such are not readily available.

Teacher accuracy in identifying emotional risk. In terms of the proportion of students whose self-report of stress or school satisfaction indicated emotional risk, across all participating and eligible teachers ($n = 5$), the sensitivity rate was 42.42% with respect to correctly nominating the students who were at-risk emotionally. Teachers' individual sensitivity rates ranged from 0% to 100% (one teacher had 100% sensitivity identifying emotional risk). In terms of proportion of students who did not self-report emotional risk, the specificity rate was 76.14% with respect to accurately not nominating students who were indeed not at-risk emotionally. Teachers' individual specificity rates ranged from 68.18% to 90%. In terms of the proportion of students who are accurately nominated by teachers, and students also self-reported emotional risk (PPV), across all participating and eligible teachers ($n = 5$), the PPV was 40% with respect to identifying students at-risk emotionally. Teachers' individual PPV rates ranged from 0% to 75%. In terms of the proportion of students who are accurately not nominated by teachers, and students also did not self-report emotional risk (NPV), across all participating and eligible teachers ($n = 6$), the NPV was 77.91% with respect to accurately not identifying students at-risk emotionally. Teachers' individual NPV rates ranged from 52.38% to 100% (two teachers were 100% accurate in not nominating students who did not self-report emotional problems). Overall, teachers were low in accuracy with regard to identifying ninth grade students in AP/IB programs who were at-risk emotionally (meaning student self-reported elevated perceived stress and/or low school satisfaction). Across all teachers, teachers missed over half of students who self-reported levels of stress or school satisfaction that were indicative of emotional risk.

As with academic risk, individual teachers' accuracy in identifying students with emotional risk varied per teacher, as did the number of students with emotional risk that appeared on each teacher's first roster. One teacher had zero students at-risk emotionally on the first roster, and two teachers had only 2 or 3 students with emotional risk. In contrast, one teacher had 16 students at-risk emotionally (55.15% of the roster). The stark differences in opportunities for teachers to increase or decrease accuracy in identifying student risk again muddies the findings, and conclusions about teacher accuracy in identifying students in accelerated curricula who are at-risk emotionally should be taken with caution.

When placing the current study's findings in a larger research context, it is important to compare studies using similar samples. Teacher accuracy in identifying students with emotional risk may likely be higher in the current study's sample, if compared to another sample of students and teachers who did not take part in an intervention that targeted skills in seeking support from teachers and building preventative relationships. The levels of teacher accuracy in identifying students with high perceived stress and/or low school satisfaction in the current study are commensurate with previous research on AP/IB youth and across teacher nomination literature. In a pilot study of the current screening procedure (Suldo, Storey, et al., 2018), teachers as a whole identified 29% of AP/IB students with low school satisfaction and 33% of AP/IB students with high perceived stress, rates slightly lower than the 42% sensitivity observed among teachers in the current study. In the Suldo, Storey et al. (2018) study, they had one teacher (with a particularly large number of students to rate) who had 0% sensitivity in identifying students with either perceived stress or school satisfaction. Also notable, in that earlier study, teachers did not receive prevalence information or guidance on about how many students to nominate (based on general prevalence of emotional risk). In the current study,

174

teachers were received suggestions on how many students to nominate, in consideration of the prevalence of academic and emotional risk in AP/IB students. Research has found that providing teachers prevalence information by changing wording on nomination forms can affect nomination rates, and therefore may influence accuracy, which may have played a role in increasing sensitivity to emotional risk from ≤ 33% to 42% (Kilgus et al., 2016). Additionally, in the current study teachers were asked to consider each student's risk status in academic and emotional domains separately, while in the pilot study 'risk' was collapsed across academic and emotional domains (Suldo, Storey et al., 2018). Further, when looking at relationships between teacher nomination status and student risk levels in Suldo, Storey, and colleagues' study (2018), teacher nominations correlated significantly with student fall semester GPA and course grades but were not associated with student self-report of school satisfaction or stress, suggesting teachers were considering students' academic status over emotional indicators when making nominations. In the current study, teacher nominations for both academic and emotional risk had significant negative correlations with school record indicators (fall semester GPA and course grade). Therefore, teachers of AP/IB youth seem to consider student emotional risk as related to academic risk.

Teachers low accuracy in identifying students with emotional concerns was similar to findings from other studies evaluating the accuracy of teacher nomination methods in identifying youth with internalizing difficulties. Multiple studies have found that teachers tend to identify low (i.e., worse than if by chance alone) amounts of students with internalizing problems (Auger 2004; Cunningham & Suldo, 2014; Gelley, 2014; Moor et al., 2007). Although consistent with prior research, results from the current study should be interpreted with caution because the low and varied numbers of students at-risk emotionally could lead to random error.

175

Characteristics of At-Risk Students Missed in the Teacher Nomination Procedure

Research questions three and four were focused on the characteristics of students missed in the first nomination time point, either with academic or emotional risk. Due to the modest sample size and the fact that many teachers did not have students in some demographic categories, Wilcoxon Signed Rank tests were unable to detect any differences in students missed across different demographic or symptom characteristics. Therefore, this author can not make any substantive conclusions about if teachers are more or less likely to miss students at-risk academically or emotionally as a function of student gender, race, socio-economic status, risk severity, or emotional risk type.

Although the current study was underpowered to determine if teachers were more or less likely to miss students at-risk emotionally or academically due to student gender, previous research suggests teachers may be more likely to miss female students with emotional risk in traditional school referral mechanism. Splett et al. (2018) compared the samples of students identified by a teacher universal rating scale and students already identified for and receiving intervention services within the school building. For elementary school students already identified by a school as needing intervention through referral mechanisms and were also identified by the universal screener, 78.7% of the students already identified through traditional referral means were male. In terms of gender differences in teacher nomination rates in secondary schools, research has found that males were nominated three times more than females (Young, Sabbah, Young, Reiser, & Richardson, 2010), and teachers were more likely to report the mental health risk of boys than girls (Sargisson, Stanley, & Hayward, 2016). Other research has not found a relationship between teacher accuracy identifying students at-risk and gender (Auger, 2004; Dadds et al., 1997; Gelley, 2014; Soles et al., 2008). Regarding the population of

interest in the current study, ninth grade students in AP/IB courses, the pilot study of the current

screening procedure (Suldo, Storey, et al., 2018) did not find any relationship between students

missed and gender. In the current study, teacher accuracy for academic risk at the first time

point was so high that differences in the sample of students missed were even harder to detect in

the (small) overall pool of students missed for academic risk.

Regarding whether students were more or less likely to be missed based on student race

(conceptualized in this study as either students overrepresented in AP/IB programs—White and

Asian students—as compared to students underrepresented in AP/IB programs—Black,

Hispanic, or multiracial students) some research suggests differences may exist in teacher

detection behaviors between students of different races. For instance, African American males

are referred by teachers at higher rates for Emotional and Behavioral Disabilities (EBD; Lane et

al., 2010), and White and Asian students are referred at higher rates for gifted programs

compared to Black and Hispanic students (McBee, 2006). When research is focused on universal

screening methods such as a teacher nomination or teacher rating scales, studies have not found

systematic patterns in screening behaviors across different student racial groups (Cunningham &

Suldo et al., 2014; Gelley, 2014; Roeser & Midgley, 1997; Splett et al., 2018).

The next student demographic characteristic explored within the pool of students missed

as at-risk academically and/or emotionally was student socio-economic status (SES). Again,

differences in teacher nominations as a function of SES (defined in the current study as level of

parent educational attainment) was unable to be explored due to sample size limitations. No prior

research was found exploring whether student SES was related to teacher accuracy of academic

or emotional risk. Future research with access to larger samples may want to broaden SES from

parent education to also include indicators such as household income and householder(s)

occupation which may be more "valid indicators" (p. 127) of student economic resources (Harwell & LeBeau, 2010).

Student symptomology characteristics (academic and emotional risk severity) were again unable to be fully evaluated due to sample size issues with individual teachers. In prior research with AP/IB students, Suldo, Storey, et al., (2018) did not find significant differences in student dissatisfaction with school or perceived stress between students identified and missed in the teacher nomination procedure. Those findings suggest student emotional risk severity may not play a role in the rate of students missed as at-risk emotionally. In the larger body of research not limited to AP/IB students, student emotional risk level tends to matter in terms of teacher accuracy. Splett et al., (2018) found elementary school students with higher clinical risk on the *BESS- Teacher Overall Risk Index Score* were more likely to already been identified by schools as needing intervention services using traditional school referral means. Multiple other studies also found that the higher a student's emotional risk severity, the more likely teachers were able to identify the student in nomination procedures (Layne, Bernstein, & March, 2006; Roeser & Midgley, 1997). Whether students with higher academic risk are more likely to be identified (or not) by teachers has not been examined in previous research, but the relationships found in the current and prior work (Suldo, Storey, et al., 2018) found that the fall semester GPA and course grades between students identified by teachers and students missed as at-risk academically was not different, suggesting that AP/IB teachers may not be more likely to miss students with failing grades than students with moderately poor grades.

Another student symptomology characteristic, emotional risk type, was next explored to see if students who were missed as being at-risk emotionally differed by whether the student was at-risk due to high perceived stress, low school satisfaction, or having risk in both areas. As with

178

other research question analyses, student characteristics such as emotional risk type was unable to be fully explored in the current study due to sample size and the low power of the number of teachers and students at-risk. In Suldo, Storey, et al.,'s (2018) pilot study, teachers missed a larger percentage of students with low school satisfaction than high perceived stress (28.57% sensitivity for school satisfaction versus 32.61% sensitivity for stress) identifying students with low school satisfaction compared to students who were identified as at-risk emotionally solely due to high perceived stress. No other prior research was found similarly investigating the effect of emotional risk type (while defining emotional risk by perceived stress and/or school satisfaction) on the rate of students missed, perhaps due to most school screenings utilizing measures of psychopathology as opposed to measures of the risk and protective factors for AP/IB students—stress and school engagement. In terms of differences in teacher nomination accuracy across different psychopathology outcomes, Gelley (2014) found teachers were more accurate identifying middle school students with anxiety versus depression. One confounding factor in the current study to consider when exploring whether missed students varied by type of emotional risk is that teacher participants may vary across depth of knowledge of perceived stress and school satisfaction in AP/IB youth. As previously mentioned, all teacher participants were a part of a larger classwide intervention (10 core modules, 2 booster modules) for their AP Human Geography classes or IB Inquiry Skills as a co-interventionist, and teachers were also given the opportunity to participate in an online teacher training program (10 core modules, 2 booster modules) paired with the student curriculum. Both the student and teacher programs focused on the experiences of AP/IB youth, including coping strategies to reduce levels of perceived stress and methods to increase student school engagement. Although all teachers were given the same opportunities for participation, individual teachers varied in the extent to their participation in the

179

program. For example, some teachers prepared for and co-taught each weekly lesson and completed online lectures and quizzes, whereas other teachers elected to have the USF research team member facilitate classwide lessons on their own, and did not complete online teacher training components. Therefore, each teacher may have had different knowledge levels coming into the screening, affecting his or her knowledge of student emotional risk factors.

Changes in Teacher Accuracy in Identifying Students with Academic or Emotion Risks

This study developed and sought to evaluate the effect of a brief intervention intended to increase teacher accuracy in identifying AP/IB students with academic or emotional risk. With regard to academic risk, across all teachers, the average sensitivity changed from 90% at the first nomination time point (before the intervention) to, after the intervention, correctly nominating 77.78% of students with academic risk. Across all teachers, the average specificity changed from 90.32% at the first nomination time point (before the intervention) to, after the intervention, correctly not nominating 86.42% without academic risk. Across all teachers, the average PPV changed from 75% at the first nomination time point (before intervention) to 65.63% after the intervention. Across all teachers, the average NPV at the first nomination time point (before the intervention) changed from 96.55% to 92.11% after the intervention. Taken together, the general trend in the sample was for teachers to be highly accurate in identifying academic risk both at baseline and after the intervention, with (small) changes being in the opposite direction as expected in that teachers were slightly less accurate in identifying students with academic risk after the intervention.

With regard to emotional risk, across all teachers, the average sensitivity changed from 42.42% at the first nomination time point (before the intervention) to, after the intervention, correctly nominating 50% of students with emotional risk. Across all teachers, the average

specificity rate changed from 76.14% at the first nomination time point (before the intervention) to, after the intervention, correctly not nominating students 59.46% of students who were not at-risk emotionally. Across all teachers, the average PPV at the first nomination time point (before the intervention) in the proportion of teacher nominations for risk that correctly identified students at-risk emotionally was 40%, and average PPV after the intervention was 37.50%. In terms of NPV, across all teachers, the average NPV at the first nomination time point (before the intervention) in the proportion of teacher nominations for risk that correctly did not include students who were not at-risk emotionally was 77.91%, and average NPV after the intervention was 70.97%. Taken together, the general trend in the sample was for teachers to be not be particularly accurate in identifying emotional risk both at baseline and after the intervention. The (small) increases in sensitivity were in the positive direction anticipated, whereas the change in specificity was in the opposite direction as expected in that teachers were slightly less discriminating in viewing a student as having emotional risk after the intervention.

When formally evaluating the effect of the intervention on teacher accuracy, due to sample size limitations, a *p* value of less than .05 was unable to be calculated or obtained for most Wilcoxon Signed Rank tests (used to examine differences in accuracy from time one to time two nomination time points). This reality was due to teachers not meeting eligibility criteria to be included in analyses either because the teacher (a) experienced no change in an accuracy index from the first to second nomination time point, or (b) because the teacher did not have students at-risk academically or emotionally at one of the time points. Therefore, any effects of the brief intervention- either in a positive, neutral, or negative direction, are unable to be determined with confidence in this study. Due to the low sample size, each teachers' accuracy

indices was affected by sampling error, meaning the effect of the intervention would have to be large for every single participant to see any effects.

In past research, teacher trainings as a mechanism to increase teacher accuracy in identifying mental health concerns have not shown promising results (Deacon, 2015; Moor et al., 2007; Vieira et al., 2014). In one case, one training was associated with lower accuracy with regard to teacher identification of students with depression (Moor et al., 2007). However, teacher trainings have traditionally only included didactic instruction and practice with vignettes, and have not included individualized feedback on teacher accuracy, which was utilized in the current study. Many modern educational leaders consider performance feedback to be an important component in professional development and learning (Joyce & Showers, 2002; Rose & Church, 1998), which suggests the brief teacher intervention may increase teacher accuracy, as it is aligned with best practices in professional development theory. Additionally, Kilgus et al. (2017) found a performance feedback and practice condition with undergraduate students had the improved accuracy the most on a behavior rating observation tool. Even though the brief teacher intervention session's basis was theoretically solid (as it utilized feedback), the sample size limitations (such as multiple teachers had none or one student at-risk at one nomination time point, precluding a realistic picture of any teacher's 'true' accuracy in identifying students at-risk at any point in time) does not allow any evaluative statements about any potential effect of the intervention to be made.

Although statistical differences between teacher accuracy identifying students with emotional and/or academic risk at the first and second nomination time point are unable to be detected in any direction, it is notable that the brief teacher intervention was largely feasible and acceptable to teacher participants. In terms of the time necessary to complete the intervention,

the average intervention session was 33.30 minutes. The shortest session was 27.03 minutes and the longest was 44.38, meaning all six sessions were able to be completed within one teacher planning or lunch period.

On the Intervention Rating Profile-15 (IRP-15), the average teacher acceptability total mean score was 5.47 (where 5 represented '*Agree'* and 6 represented '*Strongly Agree'*), signifying that teachers felt that the brief intervention was acceptable, appropriate for the school environment, and seemed to be "an acceptable intervention for improving the agreement between a teacher's identification of AP/IB students with academic and emotional risk, and student self-report and school records." Teacher qualitative feedback also indicated that teachers felt the session was highly acceptable, due to the overwhelmingly positive feedback. Of note, perhaps due to teachers' already high accuracy rate identifying students with academic risk before the intervention (across all teachers, sensitivity to identify students at-risk academically was 90% *before* the intervention), teachers focused exclusively on the portions of the intervention focused on emotional risk accuracy in their responses to open ended questions. In their feedback, multiple teachers reported perceiving that the intervention would increase their agreement between their ratings and student self-report of emotional risk. For example, one teacher reported, "[the intervention] made me re-think some student behavior that I see," and another indicated "[one of the most important things you learned in the intervention was] recognizing factors of emotional distress in less common forms." Particular to the feedback aspect of the training, one teacher in the open-ended questions identified the "feedback on comparing my responses with responses the students provided" was what the participant liked the "best," suggesting the feedback element of the session was beneficial for the individual. In conclusion, although quantitative and qualitative feedback on the acceptability of the intervention was very

positive for teacher participants, effects on accuracy were unable to be detected for the current study.

When evaluating the results of the current study, it is important to consider the differences between this study and the one conducted by Kilgus et al. (2017). Although Kilgus et al. (2017) informed the present study's design of the brief intervention evaluated, there are several key differences to note. The Kilgus et al. (2017) study sample included undergraduate students, a different population than real teachers of accelerated classes. Additionally, Kilgus et al. (2017) were training undergraduates on a behavior observation tool to determine the functions of certain behaviors. In contrast, the current study sought to train teachers on how to identify students' internal states (namely, perceived stress and school satisfaction). After providing feedback, Kilgus et al. (20107) asked undergraduate participants to watch student video clips of new behaviors to determine behavior observation tool accuracy. Teachers in the present study did not have this time delay and instead nominated students directly after being given feedback about their agreement, and therefore did not have an opportunity to reexamine student behavior before completing the second roster. These differences may or may not have contributed to the study's lack of statistically significant improvements in accuracy following the intervention.

The small sample size in this study and limited generalizability of findings might be best placed into a larger context of intervention development work as described in a joint report between the Institute for Educational Sciences' (IES) and National Science Foundation (NSF) Common Guidelines for Education Research and Development (2013). Studies such as Kilgus et al. (2017) and Suldo, Storey, et al. (2018) served as 'Foundational Research' and 'Early-State or Exploratory Research' to establish theory, knowledge, and emerging piloting of strategies that are based in research. Suldo, Storey, et al. (2018) established the screening procedure extended

184

in the current study, and Kilgus et al. (2017) investigated the utility of strategies such as feedback and practice in undergraduate students' in a behavior rating scale. Both studies led to the current study, which turned to the 'Design and Development Research' stage, which IES describes as "small-scale testing" (ISF and NSF 2013, p. 12). The current study completed all four components of IES guidelines, including (1) developing solutions to problems, grounded in theory, (2) creating measures to evaluate if the solution was delivered as intended (fidelity), (3) collecting data to assess feasibility, and (4) conducting a pilot study to examine preliminary outcomes (ISF and NSF, 2013). The current study created and tested the brief intervention, while also demonstrating its feasibility and advancing fidelity tools to measure quality of delivery. Future directions to truly evaluate the brief intervention's efficacy in sufficiently large samples is a direction for future research, as the current study did not have enough power and participants to implement an efficacy trial.

Implications for School Psychologists

Although a small sample size precluded the current study from being able to fully evaluate all research questions, some findings still provide some potential implications for school psychologists. First, the prevalence of risk (28.88% of students were at-risk emotionally, and 24.17% of students were at-risk academically) found in the sample of ninth grade AP/IB students further reinforces the importance of continuing to focus on this population for screening and intervention services. School psychologists can use prevalence information not only from this study but also others (Suldo, Storey,et al., 2018; Neihart et al., 2002; Suldo, Shaunessy, & Hardesty, 2008; Suldo & Shaunessy-Dedrick, 2013a) to advocate for specialized services for youth in accelerated curricula.

Next, the study replicated previous research (Suldo, Storey, et al., 2018) showing teachers were highly accurate in identifying ninth grade students with academic risk, but have low levels of accuracy in identifying ninth grade students with emotional risk. If school psychologists are participating in a screening procedure and official academic records are unable to be obtained readily from school databases, teachers themselves can be a suitable replacement to identify students at-risk academically. When identifying students with emotional risk, the current study is consistent is prior research indicating high school students themselves are the preferred screening method compared to deferring only to teacher nomination methods (Kamphaus et al., 2010) when identifying students in need of more targeted or selective social-emotional supports. School psychologists, if involved in designing, implementing, and collecting universal screening data, can utilize this and other studies in aiding the creation of evidence-based methods of identifying students with elevated levels of emotional problems, and advocate for the use of student self-report measures to identify students at-risk through measuring targets salient to the unique population.

In terms of identifying students in AP/IB programs with signs of risk mid freshmen year, the screening procedure evaluated in the current and pilot study (Suldo, Storey, et al., 2018) is a promising and effective method of identifying students in accelerated curricula for consideration for Tier 2 supports. As this screening method uses free and publicly available measures, school psychologists might feasibly adopt this screening procedure when serving youth in accelerated curricula, as all components of the screening procedure are designed around the unique risk and protective factors AP/IB youth face.

Finally, when evaluating the brief teacher intervention, although no statistical conclusions were able to be drawn, teachers found the brief session feasible and acceptable. Teachers

frequently receive feedback on how their students are doing academically, but rarely receive feedback on which students in their class are struggling. Some screening methods, such as the BIMAS-2 (BIMAS-2; McDougal, Bardos, & Meier, 2016), provide teachers feedback on the status of their class emotionally, using colors indicating level of risk such as 'Red,' 'Yellow,' and 'Green.' The current study utilized a different method to provide teachers feedback not only on the prevalence of risk, but also on the agreement between the teacher's identifications and student self-report of risk and school records. Teacher participants frequently reflected in their open ended feedback and verbally to this researcher (who also served as interventionist for all intervention sessions) how much they appreciated the feedback on how their class was doing, and how to better identify students in their classes with emotional struggles. As schools are increasingly conceptualizing student success for both AP/IB youth (Suldo, Shaunessy-Dedrick, et al., 2018) and youth in general as involving both academic and emotional success, and teachers already receive feedback on how students are doing in the academic domain, there leaves a large window for teachers to see how their students are doing in the other areas intricately related to student emotional risk. School psychologists, as one of the resident 'mental health experts' in a school, have a unique skill set to provide teachers this valuable feedback and insight into the strengths and barriers their students are experiencing, either while continuing to evaluate the session used in the current study, or providing teachers feedback and information in other forms, such as school-wide trainings or grade level team meetings.

Contributions to the Literature

Overall, the current study contributed to both screening literature and research on the best practices to support youth in accelerated curricula. As youth in AP/IB programs are an understudied population (Suldo, Gormley, DuPaul, & Anderson-Butcher, 2014), more

187

information is needed on how to best identify students at-risk in part in order to direct them toward necessary and matched intervention supports. The current study furthered already existing promising support (Suldo, Storey, et al., 2018) for a free, easily-adopted screening procedure to identify ninth grade students in AP Human Geography and IB Inquiry Skills who are at-risk academically and/or emotionally. The study also added to the literature descriptively on the characteristics likely (and not) to define those students with academic and/or emotional risk who tend to be missed by teachers. Based on previous research, demographic characteristics such as gender (with male students being more likely to be identified as at-risk, Sargisson, Stanley, & Hayward, 2016; Young, Sabbah, Young, Reiser, & Richardson, 2010), race (Lane et al., 2010), and risk severity (for both emotional and academic risk, Layne, Bernstein, & March, 2006; Roeser & Midgley, 1997, Suldo, Storey, et al., 2018) may be related to patterns in the rate of students missed in nomination procedures. The low power associated with this study's sample size precluded a full evaluation of whether students were more or less likely to be missed due to different student characteristics, but the study's findings and data could be combined with others studies (e.g., incorporated into future meta analyses or literature reviews) in order to point to future research needed to more fully explore the characteristics of students missed in teacher nomination procedures.

Finally, the current study also created and piloted a brief intervention (feedback session) aimed to increase the agreement between teacher nominations and student self-report of perceived stress and school satisfaction and school records. Although statistical conclusions were unable to be made, the intervention was highly acceptable to teachers and was easily implemented within one teacher planning period. According to ISF and NSF's guidelines (2013) for developing and evaluating new interventions in education, the brief teacher intervention

188

follows early components in the 'Design and Development' stage, leading to creation of the intervention materials ready and piloted for future research for statements to be made about efficacy.

Limitations and Delimitations

There were several limitations to the current study, both analytic and procedural in nature. As the current study was part of a larger study, school, administration, and teacher selection was a convenience sample of those who agreed to take part in the larger study, limiting the generalization of findings to schools willing to be part of a project intended to support the social-emotional development of AP/IB students. Another threat to external validity was that both teachers and students participants had both undergone student and teacher curricula on adaptive coping and school engagement strategies (the ACE program, part of the larger study) in the semester just prior to this study. Participation in these programs may have affected students' self-reported ratings of stress, school satisfaction, and teachers' knowledge of stress and school engagement in 9th grade AP/IB students. Nevertheless, in a pilot of the current screening procedure during the 2016-2017 school year (Suldo, Storey, et al., 2018), there remained considerable variability in student emotional and academic well-being and teacher accuracy despite comparable participation in the ACE program.

Additionally, the anticipated sample size of teachers was smaller than ideal, leading to reduced power to detect differences between pre- and post-test. The small sample size yields analytic challenges as well, as although the design of this study was nested in nature (students nested within teachers), the sample size does not allow for multilevel analyses. Multilevel analyses would also be better able to account for the likely different numbers of students per teacher. An additional analytic limitation may come from the consistent cut point across schools,

189

instead of adjusting the cut score per school (such as having every school having the top 15-16% of students at-risk qualifying for high risk). There may be substantial differences at each school in how many students meet at-risk criteria (i.e., prevalence rates of academic and emotional risk), allowing some teachers more opportunities to identify students at-risk and some teachers fewer opportunities.

Another limitation related to sample size was the varying level of student risk prevalence per school. As some teachers had no students at a given time point with risk, either academically or emotionally; on the other extreme, one teacher had 15 students at-risk emotionally at the time one nomination point and 16 students at-risk emotionally at the time two nomination point. The varying levels of risk provided some teachers less opportunities for accuracy identifying students at-risk, and provided some teachers many more opportunities. Additionally, the intervention protocol was needed to be edited for some teachers to reflect these unexpectedly low risk levels at time one or time two nomination points.

In regards to student data collection, data were collected at only one time point, and may reflect more transient levels perceived of stress and school satisfaction. Collecting student data at multiple time points might reveal more stable ratings of stress and school satisfaction. Another threat to internal validity may be potential testing effects of teachers completing the same screening form twice, at nomination phases one and two, meaning that changes in teacher accuracy may result from teachers becoming more comfortable completing nomination forms instead of the effect of receiving feedback on their accuracy behaviors. The sample size did not allow random assignment of teachers to intervention and control, leading the testing effect to not be able to be alleviated.

Finally, one limitation between AP and IB teachers within the nomination procedure may result from differences between what teachers are nominating students for in terms of academic risk. While AP teachers were nominating students for academic risk partially based on the students' grade in AP Human Geography (the class in which the teachers taught the students), IB teachers were nominating students for academic risk partially based on the students' grade in IB Biology, a class the teacher does not have the student in. IB teachers may have less knowledge on students' performance in a class the teacher does not teach the student in (although teachers often discuss student progress in various classes), which is not the case for AP teachers. Although, through collaboration with partnering IB programs for the current and larger study, both administrators and teachers have reported knowing about student performance across the entire IB program, not just in his/her IB Inquiry class. The IB teacher who participated in the pilot interview indicated IB teachers are aware of students' academic performance across all of their IB classes, and the teacher reported no concerns with the differences between what teachers are nominating students for in terms of academic risk. Additionally, one past partnering high school, for example, has grade-wide meetings for all IB teachers to discuss students matters. Therefore, the close-knit community of IB teachers at a high school naturally lends itself to an IB Inquiry Skills teacher knowing student performance in another class such as IB Biology.

Directions for Future Research

The current study points to many directions for future research in this area. Overall, future research could replicate and extend the current study to a larger population in order have enough power to evaluate each research question. Specifically, the research could be expanded to both a larger sample of youth and teachers in accelerated curricula, as that is the population for whom the present research was designed, but also could be adapted and evaluated with a larger,

191

general education sample. The current study's sample size was inadequate to make any conclusions about any potential utility (or no utility) of the brief intervention session, or whether teachers are more or less likely to miss students in certain demographic or symptom categories. In future research, in order to give teachers opportunities at each nomination time point to identify students at-risk, nomination rosters should be created after all student data collection. After all student data is collected, students could be put into matched pairs according to risk levels or status, and then split into either being on the first or second nomination roster to evenly distribute the number of students at-risk at each time point. Creating rosters with more equal numbers of at-risk students in future studies would also prevent teacher data to not meet study inclusion criteria due to having no students at-risk academically and/or emotionally. In the current study, adjustments were made to the protocol during intervention implementation to adapt to special teacher situations originally not planned for (i.e., teachers who achieved 100% accuracy on the first roster, teachers who had no students at-risk academically or emotionally on the first roster). Future research should continue to edit and refine the intervention materials to aid in its utility in the school setting

Related to the brief teacher intervention, the ethical implications of providing teachers information on the emotional risk status of individual students in their class should also be explored. While teachers largely appreciated the information on individual student emotional risk status, one pilot study participant (who previously was an AP teacher and later transitioned into an administration position) and one study participant both expressed concern about the implications of teachers incorrectly using confidential student information. The current researcher took several precautions, such as not allowing teachers to keep any data with student names and highlighting the confidential nature of student status. Future research should explore

192

the acceptability of this practice with school administration, mental health providers, and students to ensure confidentiality is not violated with sensitive student information while providing feedback to teachers.

Another further direction could include gathering nomination data from not only one teacher, but from multiple teachers (such as multiple IB teachers within a high school's IB Program), and collapse educators' nominations in order to identify students who appeared at-risk to even one educator. As opposed to replying on only one teacher who has observed the student in likely one limited setting, including information from several teachers would allow for consideration of observations and interactions in different settings, where students may exhibit different behaviors.

One unexplored area of research regarding teacher nomination procedures is students' perceived social validity of teacher nominations. No research has explored what students believe is a teacher's appropriate role in identifying students for supplemental supports in school. Along the same lines, future research could explore whether students perceive teachers to have enough knowledge of student stress and engagement with school to identify those who might feel at-risk. Particularly for older students, for whom self-report has been determined as a viable identification method, it could be important to include their voices when schools consider student screening strategies.

Summary

In sum, the current study furthered past research indicating a multi-method screening procedure using student self-report, academic records, and teacher nomination was effective in identifying AP/IB students with signs of risk mid-year, which is important for schools committed to data-based decision-making when considering which students should be offered a Tier 2

193

selective intervention. Teachers were highly accurate identifying students in accelerated curricula with academic risk (accurately identifying 90% of students with at-risk course grades), but not sufficiently accurate (i.e., less accurate than if by chance) in identifying students with emotional risk, as defined as high perceived stress and/or low school satisfaction (accurately identifying 42.42% of students who self-reported emotional risk). Therefore, teachers may be a suitable substitute in identifying students at-risk academically if school records cannot be obtained, but student self-report of emotional risk should be continued to reduce the number of students missed in need of services. In terms of differences in the rates of AP/IB students missed (academically and emotionally), no conclusions were able to be made about whether student demographic or symptomology characteristics such as gender, race, SES, symptom severity, or symptom type differed across students missed at-risk. Future research should continue to evaluate whether students are more or less likely to be accurately identified based on various student characteristics. Finally, the current study developed, piloted, and evaluated with a small teacher sample a brief intervention aimed at increasing teacher accuracy identifying AP/IB students with academic and/or emotional risk. The study was unable to make any conclusions regarding the session's impact on teacher accuracy, but demonstrated high feasibility, acceptability, and fidelity. Future research should continue to explore whether feedback can be utilized to increase teacher accuracy in screening procedures, whether with the current session protocol or other procedures. Additionally, the current study's findings and future research directions in supporting students in Advanced Placement and International Baccalaureate programs should continually align with a multi-tiered system of supports, meaning universal prevention of problems, evidence-based screening tools to identify those with elevated signs of risk, and matched interventions for students identified.

194

REFERENCES

Achenbach, T.M. & Edelbrock, C. (1986a). *Manual for the parent's version of the Child Behavior Profile*. Burlington, VT: Department of Psychiatry, University of Vermont.

Achenbach, T. M., & Edelbrock, C. (1986b). *Manual for the teacher's version of the Child Behavior Profile*. Burlington, VT: Department of Psychiatry, University of Vermont.

Achenbach, T.M. & Edelbrock, C. (1986c). *Manual for the Youth Self-Report and Profile*. Burlington, VT: Department of Psychiatry, University of Vermont.

Achenbach, T. M. & Rescorla, L. A. (2001). *Manual for ASEBA school-age forms and profiles*. Burlington: University of Vermont, Research Center for Children, Youth, and Families.

Aebi, M., Giger, J., Plattner, B., Metzke, C. W., & Steinhausen, H. C. (2014). Problem coping skills, psychosocial adversities and mental health problems in children and adolescents as predictors of criminal outcomes in young adulthood. *European Child & Adolescent Psychiatry*, *23*(5), 283-293.

Adelman, H. S., & Taylor, L. (2008). Ending the marginalization of mental health in schools: A comprehensive approach. In R. W. Christner & R. B. Mennuti (Eds.), *School-based mental health: A practitioner's guide to comparative practices* (121-131). New York, NY: Routledge.

Adelman, H. S., & Taylor, L. (1998). Reframing mental health in schools and expanding school reform. *Educational Psychologist*, *33*(4), 135-152.

Agresti, A., & Coull, B. A. (1998). Approximate is better than "Exact" for interval estimation of binomial proportions. *American Statistical Association, 52*(2), 119-122.

Amador, A., Cohen, M., Pearrow, M., & Sheppard, V. (2014, September). *Comprehensive behavioral health services: Using data for identification, partnership development, and research*. Paper presented at the Annual Conference of Advancing School Mental Health, September 19, 2014, Pittsburgh, P.A.

Angold, A., & Costello, E. J. (1987). *Mood and Feelings Questionnaire (MFQ)*. Durham, NC: Developmental Epidemiology Program, Duke University.

Appleton, J. J., Christenson, S. L., Kim, D., & Reschly, A. L. (2006). Measuring cognitive and psychological engagement: Validation of the Student Engagement Instrument. *Journal of School Psychology*, *44*(5), 427-445.

Albee, G. W. (1968). Conceptual models and manpower requirements in psychology. *American Psychologist, 23*, 317-320

Albers, C. A., & Kettler, R. J. (2014). Best practices in universal screening. In P.L. Harrison & A. Thomas (Eds.), *Best practices in school psychology: Data-based and collaborative decision making* (121-131). Bethesda, M.D.: NASP Publications.

Auger, R. W. (2004). The accuracy of teacher reports in the identification of middle school students with depressive symptomatology. *Psychology in the Schools, 41*(3), 379-389.

Bleske-Rechek, A., Lubinski, D., & Benbow, C. P. (2004). Meeting the educational needs of special populations: Advanced placement's role in developing exceptional human capital. *Psychological Science*, *15*(4), 217-224.

Bruhn, A. L., Lane, K. L., & Hirsch, S. E. (2013). A review of Tier 2 interventions conducted within multi tiered models of prevention evidencing a primary behavioral plan. *Journal of Emotional and Behavioral Disorders, 22*, 171-189.

Bruhn, A. L., Woods-Groves, S., & Huggle, S. (2014). A preliminary investigation of emotional and behavioral screening practices in K-12 schools. *Education and Treatment of Children, 37*, 611-634.

Caldarella, P., Young, E. L, Richardson, M. J., Young, B. J., & Young, K. R. (2008). Validation of the Systematic Screening for Behavior Disorders in middle and junior high school. *Journal of Emotional and Behavioral Disorders, 16*(2), 105-117.

Castillo, J. M., Curtis, M. J., & Gelley, C. (2012). School psychologists' professional practices and implications for the field. *Communique, 40*(8), 4-8. Retrieved November 9, 2015, from http://www.nasponline.org/publications/periodicals/communique/issues/volume-40-issue-8

Centers for Disease Control and Prevention. (2015). Suicide trends among persons aged 10–24 years—United States, 1994–2012. Morbidity and Mortality Weekly Report, 64(8), 201–205. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/ mm6408a1.htm

Chajewski, M., Mattern, K. D., & Shaw, E. J. (2011). Examining the role of Advanced Placement® exam participation in 4-year college enrollment. *Educational Measurement: Issues and Practice*, *30*(4), 16-27.

Christner, R. W., Forrest, E., Morley, J., & Weinstein, E. (2007). Taking cognitive behavior therapy to school: A school-based mental health approach. *Journal of Contemporary Psychotherapy*, 37(3), 175–183.

Christner, R. W., Mennuti, R. B., & Whitaker, J. S. (2009). *School-Based Mental Health*.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behaviors, 24*, 385-396.

College Board. (2010). *Annual AP program participation 1956-2010.*Retrieved from

http://profesionals.collegeboard.com/profdownload/AP-Annual-Particiation-2010.pdf

College Board (2014). 10 years of Advanced Placement exam data show significant gains in

access and success; Areas for improvement. Retrieved from

https://www.collegeboard.org/releases/2014/class-2013-advanced-placement-results-

announced

College Board (2016). College Report of AP Exams 2015-2016 (By State). Retrieved from

https://secure-media.collegeboard.org/digitalServices/pdf/research/2016/College-Report-

by-State-2016.pdf

College Board. (2017). AP courses and exams. Retrieved from

http://apcentral.collegeboard.com/apc/public/courses/teachers_corner/index.html

College Board. (2017). AP program summary handout 2016. Retrieved from https://secure-

media.collegeboard.org/digitalServices/pdf/research/2016/Program-Summary-Report-

2016.pdf

College Board (n.d.) AP International Diploma. Retrieved from

https://apcentral.collegeboard.org/score-reports-data/awards/international-diploma

Compas, B. E., Orosan, P. G., & Grant, K. E. (1993). Adolescent stress and coping: Implications

for psychopathology during adolescence. *Journal of Adolescence*, *16*(3), 331-349.

Cooney, S. M., Kratochwill, T. R., & Small, S. A. (2010). Youth policy and politics in the

United States: Toward an increased focus on prevention. In B. Doll, W. Pfohl, & J. Yoon

(Eds.), *Handbook of Youth Prevention Science*. (pp. 445-460) New York, NY: Routledge.

Cunningham, J. (2011). *Accuracy of educator nominations in identifying students with elevated levels of anxiety and depression*. (Unpublished doctoral dissertation). Retrieved from ProQuest.

Cunningham, J. M., & Suldo, S. M. (2014). Accuracy of teachers in identifying elementary school students who report at-risk levels of anxiety and depression. *School Mental Health, 6*(4), 237-250.

Dadds, M. R., Spence, S. H., Holland, D. E., Barrett, P. M., & Laurens, K. R. (1997). Prevention and early intervention for anxiety disorders: A controlled trial. *Journal of Consulting and Clinical Psychology, 65*(4), 627.

Deacon, S. K. (2015). *Evaluation of a training on teachers' identification of anxiety in students* (Unpublished thesis). Retrieved from ProQuest.

Deros, R. E., Lipton, M. F., Augenstein, T. M., Karp, J.N., Keeley, L. M., Qasmieh, N., Grewe, B. I., Aldao, A., & De Los Reyes, A. (2017). Multi-informant assessments of adolescent social anxiety: Adding clarity by leveraging reports from unfamiliar peer confederates, *Behavior Therapy* (2017).

Dougherty, C., Mellor, L., & Jian, S. (2006). The Relationship between Advanced Placement and College Graduation. 2005 AP Study Series, Report 1. *National Center for Educational Accountability*.

Drummond, K. (1994). *The Student Risk Screening Scale* (SRSS). Grants Pass, OR: Josephine County Mental Health Program.

Doll, B., Cummings, J.A., Chapla, B.A. (2014). Best practices in population-based school mental health services. In P.L. Harrison & A. Thomas (Eds.), *Best practices in school psychology: Systems-level services* (149-163). Bethesda, M.D.: NASP Publications.

Dowdy, E., Dever, B. V., Raines, T. C., & Moffa, K. (2016). A preliminary investigation into the added value of multiple gates and informants in universal screening for behavioral and emotional risk. *Journal of Applied School Psychology*, *32*(2), 178-198.

Dowdy, E., Doane, K., Eklund, K., & Dever, B. V. (2011). A comparison of teacher nomination and screening to identify behavioral and emotional risk within a sample of underrepresented students. *Journal of Emotional and Behavioral Disorders.*

Dubow, E. F., Lovko Jr, K. R., & Kausch, D. F. (1990). Demographic differences in adolescents' health concerns and perceptions of helping agents. *Journal of Clinical Child Psychology, 19*(1), 44-54.

Dwyer, S. B., Nicholson, J. M., & Battistutta, D. (2006). Parent and teacher identification of children at risk of developing internalizing or externalizing mental health problems: A comparison of screening methods. *Prevention Science, 7*(4), 343-357.

Edelbrock, C., Costello, A. J., Dulcan, M. K., Conover, N. C., & Kala, R. (1986). Parent-child agreement on child psychiatric symptoms assessed via structured interview *Journal of Child Psychology and Psychiatry, 27*(2), 181-190.

Eklund, K., & Dowdy, E. (2014). Screening for behavioral and emotional risk versus traditional school identification methods. *School Mental Health, 6*(1), 40-49.

Eklund, K., Kilgus, S., von der Embse, N., Beardmore, M., & Tanner, N. (2017). Use of universal screening scores to predict distal academic and behavioral outcomes: A multilevel approach. *Psychological Assessment, 29*(5), 486-499.

Eklund, K., Tanner, N., Stoll, K., & Anway, L. (2015). Identifying emotional and behavioral risk among gifted and nongifted children: A multi-gate, multi-informant approach. *School Psychology Quarterly*, *30*(2), 197.

Elliot, S. N. & Gresham, F. M. (2007). *Social Skills Improvement System – Performance Screening Guide*. San Antonio, TX: Pearson Assessments.

Elliott, S.N., Davies, M. D., Frey, J. R., Gresham, F., & Cooper, G. (2017). Development and initial validation of a social emotional learning assessment for universal screening. *Journal of Applied Developmental Psychology* (2017).

Elmore, G. M., & Huebner, E. S. (2010). Adolescents' satisfaction with school experiences: Relationships with demographics, attachment relationships, and school engagement behavior. *Psychology in the Schools*, *47*(6), 525-537.

Epstein, J. L., & McPartland, J. M. (1976). The concept and measurement of the quality of school life. *American Educational Research Journal, 13*, 15 – 30.

Erickson, M. R. (2017). *Measuring teachers' perceptions of student behavior using the Systematic Screening for Behavior Disorders* (Unpublished thesis). Retrieved from ProQuest.

Ewing, M. (2006). The AP Program and student outcomes: A summary of research. Retrieved from http://professionals.collegeboard.com/profdownload/pdf/RN-29.pdf

Fazel, M.S., Hoagwood, K., Stephan, S., & Ford, T. (2014). Mental health intervention in schools in high-income countries. *Lancet Psychiatry, 1*, 377-387.

Feeney-Kettler, K.A., Auster, E.R., & Kratochwill, T.R. (2005). *Teacher training to identify children with anxiety problems (T-TICAP)*. Unpublished manuscript, University of Wisconsin-Madison.

Feld, L. A., & Shusterman, A. (2015). Into the pressure cooker: Student stress in college preparatory high schools. *Journal of Adolescence, 41*, 31-42.

Ford, D. Y. (2014). Segregation and the underrepresentation of Blacks and Hispanics in gifted education: Social inequality and deficit paradigms. *Roeper Review*, *36*(3), 143-154.

Foust, R. C., Hertberg-Davis, H., & Callahan, C. M. (2009). Students' Perceptions of the Social/Emotional Implications of Participation in Advanced Placement and International Baccalaureate Programs. Research Monograph Series. RM09238. *National Research Center on the Gifted and Talented*.

Fraser, B., & Fisher, D., & McRobbie, C. (1996, April). *Development, validation, and use of personal and class forms of a new classroom environment instrument*. Paper presented at the annual meeting of the American Educational Research Association, New York.

Freeman, A. (2017, August). *Using behavior data using multi-tiered systems of support*. Paper presented at the Teacher Summer Institute, Boston Public Schools, Boston, MA.

Furlong, M.J., You, S., Renshaw, T.L., Smith, D.C., O'Malley, M.D. (2014). Preliminary development and validation of the Social and Emotional Health Survey for secondary students. *Social Indicators Research, 117*, 1011-1032.

Gall, M. D., Borg, W. R., & Gall, J. P. (2006). *Educational research: An introduction.* (8th ed.). Longman Publishing.

Gelley, C. (2014). *Accuracy of educators in identifying middle school students with elevated levels of anxiety or depression* (Unpublished doctoral dissertation). Retrieved from ProQuest.

Gilman, R., Huebner, E. S., & Laughlin, J. E. (2000). A first study of the Multidimensional Students' Life Satisfaction Scale with adolescents. *Social Indicators Research, 52*(2), 135-160.

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A research note. *Child Psychology & Psychiatry & Allied Disciplines, 38*, 581-586.

Gulliver, A., Griffiths, K. M., & Christensen, H. (2010). Perceived barriers and facilitators to mental health help-seeking in young people: a systematic review. *BMC psychiatry*, *10*(1), 113.

Guzman, M. P., Jellinek, M., George, M., Hartley, M., Squicciarini, A. M., Canenguez, K. M., ... & Murphy, J. M. (2011). Mental health matters in elementary school: First-grade screening predicts fourth grade achievement test scores. *European Child & Adolescent Psychiatry 20*(8), 401-41.

Graham, A., Phelps, R., Maddison, C., & Fitzgerald, R. (2011). Supporting children's mental health in schools: Teacher views. *Teachers and Teaching*, *17*(4), 479-496.

Grant, K. E., Compas, B. E., Thurm, A.E., McMahon, S. D., & Gipson, P. Y. (2004). Stressors and child and adolescent psychopathology: Measurement issues and prospective effects. *Journal of Clinical Child and Adolescent Psychology, 33*, 412-425.

Green, H. G. & Zar, J. H. (1989). A basic program to compute the sensitivity, specificity, and predictive value of screening tests. *Educational and Psychological Measurement, 49*, 147-150.

Greenspoon, P. J. & Saklofske, D. H. (1997). Validity and reliability of the Multidimensional Students' Life Satisfaction Scale with Canadian children. *Journal of Psychoeducational Assessment*, 15, 138-155.

Handwerk, P., Tognatta, N., Coley, R. J., Gitomer, D. H., & Educational Testing Service, P. C. (2008). Access to success: Patterns of Advanced Placement participation in U.S. high schools. Policy Information Report. *Educational Testing Service*, 1-28.

Hearon, B. V. (2015). *Stress and coping in high school students in accelerated academic curricula: Developmental trends and relationships with student success*. (Unpublished thesis). Retrieved from ProQuest.

Hertberg-Davis, H., Callahan, C. M., & Kyburg, R. M. (2006). Advanced Placement and International Baccalaureate Programs: A. *National Research Center on the Gifted and Talented*.

Hertberg-Davis, H., & Callahan, C. M. (2008). Advanced placement and international baccalaureate programs. In J. A. Plucker & C. M. Callahan (Eds.), Critical issues in practices in gifted education: What the research says (pp. 31-44) Waco, TX: Prufrock Press.

Huebner, E. S. (1997). Life satisfaction and happiness. In G. Bear, K. Minke, & A. Thomas (Eds.), Children's needs - II (pp. 271-278). Silver Spring, MD: National Association of School Psychologists.

Huebner, E. S. (1994). Preliminary development and validation of a multidimensional life satisfaction scale for children. *Psychological Assessment, 6,* 149-158.

Huebner, E. S. (1991). Initial development of the Students' Life Satisfaction Scale. *School Psychology International, 12*, 231-240.

Huebner, E. S., Laughlin, J. E., Ash C., & Gilman, R. (1998). Further validation of the Multidimensional Students' Life Satisfaction Scale. Journal of Psychological Assessment, 16, 118-134.

Institute of Medicine. (1994). Reducing risks for mental disorders: Frontiers for preventive intervention research. Washington, DC: National Academy Press.

International Baccalaureate Organization. (2017). Facts and Figures. Retrieved from

http://www.ibo.org/about-the-ib/facts-and-figures/

International Baccalaureate Organization. (2014). General regulations: Diploma Programme.

Retrieved from http://www.ibo.org/globalassets/publications/become-an-ib-school/dp-

general-regulations-en.pdf

International Baccalaureate Organization. (2012a). History of the International Baccalaureate.

Retrieved from http://www.ibo.org/history/

International Baccalaureate Organization. (2012b). The IB Diploma Programme. Retrieved from

htttp://www.ibo.org/diploma/

Jenkins, J. R., Hudson, R. F., & Johnson, E. S. (2007). Screening for at-risk readers in a response

to intervention framework. *School Psychology Review*, *36*(4), 582.

Jorm, A. F., Kitchener, B. A., Sawyer, M. G., Scales, H., & Cvetkovski, S. (2010). Mental health

first aid training for high school teachers: A cluster randomized trial. *BMC Psychiatry,*

10, 51-62.

Joyce, B. R., & Showers, B. (2002). Student achievement through staff development.

Kamphaus, R. E., DiStefano, C., Dowdy, E., Eklund, K., & Dunn, A. R. (2010). Determining the

presence of a problem: Comparing two approaches for detecting youth behavioral risk.

School Psychology Review, 39, 395-407.

Kamphaus, R. W. & Reynolds, C. R. (2007). *BASC-2 Behavioral and Emotional Screening*

System. Minneapolis, MN: Pearson.

Kaufman, J., Birmaher, B., Brent, D., Rao, U., Flynn, C., Moreci, P., et al. (1997).

Schedule for affective disorders and schizophrenia for school-age children-present

and lifetime version (K-SADS-PL): Initial reliability and validity data.

Kauffman, J. M. (2001). *Characteristics of emotional and behavioral disorders of children and youth* (7th ed.). Columbus, OH: Merrill.

Kazdin, A. E. (1980). Acceptability of time-out from reinforcement procedures for disruptive child behavior. *Behavior Therapy, 11*, 329-344.

Kern, L., Mathur, S. R., Albrecht, S. F., Poland, S., Rozalski, M., & Skiba, R. J. (2017). The Need for School-Based Mental Health Services and Recommendations for Implementation. *School Mental Health*, 1-13.

Kilgus, S. P., Chafouleas, S. M., & Riley-Tillman, T. C. (2013). Development and initial validation of the Social and Academic Behavior Risk Screener for elementary grades. *School Psychology Quarterly, 28*, 210-226.

Kilgus, S. P., & Eklund, K. R. (2016). Consideration of Base Rates Within Universal Screening for Behavioral and Emotional Risk: A Novel Procedural Framework. *School Psychology Forum, 10(1),* 120-130.

Kilgus, S. P., Eklund, K., Nathaniel, P., Taylor, C. N., & Sims, W. A. (2016). Psychometric defensibility of the Social, Academic, and Emotional Behavior Risk Screener (SAEBRS) Teacher Rating Scale and multiple gating procedure within elementary and middle school samples. *Journal of school psychology*, *58*, 21-39.

Kilgus, S. P., Riley-Tillman, T. C., Chafouleas, S. M., Christ, T. J., & Welsh, M. E. (2014). Direct behavior rating as a school-based behavior universal screener: Replication across sites. *Journal of School Psychology*, *52*(1), 63-82.

Kilgus, S. P., Kazmerski, J. S., Taylor, C. N., & von der Embse, N. P. (2017). Use of direct behavior ratings to collect functional assessment data. *School Psychology Quarterly*, *32*(2), 240-253.

King, S., Lockhart, N., & Sirginnis, K. (2015, July). *Grading and reporting in the IB: One school's evolution and reflection*. Paper presented at the IB Conference of the Americas 2015, Chicago, IL.

Klopfenstein, K., & Thomas, M. K. (2009). The link between advanced placement experience and early college success. *Southern Economic Journal*, 873-891

Kolko, D. J., & Kazdin, A. E. (1993). Emotional/behavioral problems in clinic and nonclinic children: Correspondence among child, parent and teacher reports. *Journal of Child Psychology and Psychiatry*, *34*(6), 991-1006.

Kovacs, M. (2011). *Children's Depression Inventory 2nd Edition (CDI 2) Manual.* North Tonawanda, NY: Multi-Health Systems, Inc.

Kuo, E. S., Vander Stoep, A., Herting, J. R., Grupp, K., & McCauley, E. (2013). How to identify students for School-Based depression intervention: Can school record review be substituted for universal depression screening? *Journal of Child and Adolescent Psychiatric Nursing, 26*(1), 42-52.

Kuo, E., Vander Stoep, A., McCauley, E., & Kernic, M. A. (2009). Cost-effectiveness of a school-based emotional health screening program. *Journal of School Health, 79*(6), 277-285. doi:10.1111/j.1746-1561.2009.00410.x

Lane, K. L., & Menzies, H. M. (2003). A school-wide intervention with primary and secondary levels of support for elementary students: Outcomes and considerations. *Education and Treatment of Children, 26*(4) 431-451.

Lavoie, J. A., & Douglas, K. S. (2012). The Perceived Stress Scale: Evaluating configural, metric and scalar invariance across mental health status and gender. *Journal of Psychopathology and Behavioral Assessment*, *34*(1), 48-57.

207

Layne, A. E., Bernstein, G. A., & March, J. S. (2006). Teacher awareness of anxiety symptoms in children. *Child psychiatry and human development*, *36*(4), 383-392.

Lazarus, R. S., & Folkman, S. (1984). Coping and adaptation. *The Handbook of Behavioral Medicine*, 282-325.

Lee, E. (2012). Review of the psychometric evidence of the perceived stress scale. *Asian Nursing Research, 6(*4), 121-127.

Leonard, N. R., Gwadz, M. V., Ritchie, A., Linick, J. L., Cleland, C. M., Elliot, L., & Grethel, M. (2015). A multi-method exploratory study of stress, coping, and substance use among high school youth in private schools. *Frontiers in Psychology, 6*, 1-16.

Long, M. C., Conger, D., & Iatarola, P. (2012). Effects of high school course-taking on secondary and postsecondary success. *American Educational Research Journal*, *49*(2), 285-322.

March J. (1997). *Multidimensional anxiety scale for children*. MultiHealth Systems Inc., North Tonawanda, NY.

March, J. (2013). *Multidimensional anxiety scale for children 2nd edition*. MultiHealth Systems Inc., North Tonawanda, NY.

Martens, B. K., & Meller, P. J. (1989). Influence of child and classroom characteristics on acceptability of interventions. *Journal of School Psychology, 27*(3), 237-245.

Martens, B. K., Witt, J. C., Elliott, S. N., & Darveaux, D. X. (1985). Teacher judgments concerning the acceptability of school-based interventions. *Professional Psychology: Research and Practice, 16*(2), 191-198.

Martin, L. T., Burns, R. M., & Schonlau, M. (2010). Mental disorders among gifted and

    nongifted youth: A selected review of the epidemiologic literature. *Gifted Child*

    Quarterly, *54*(1), 31-41.

Marsh, H. W., Barnes, J., Cairns, L., & Tidman, M. (1984). Self-Description Questionnaire: Age

    and sex effects in the structure and level of self-concept for preadolescent children.

    Journal of Educational psychology, 76(5), 940.

Masten, A. S., Roisman, G. I., Long, J.D., Burt, K. B., Obradović, J., Riley, J. R., ... & Tellegen,

    A. (2005). Developmental cascades: linking academic achievement and externalizing and

    internalizing symptoms over 20 years. *Developmental Psychology*, *41*(5), 733.

McBee, M. T. (2006). A descriptive analysis of referral sources for gifted identification

    screening by race and socioeconomic status. *Journal of Secondary Gifted Education*,

    17(2), 103-111.

McCoach, B., & Siegle, D. (2003). The School Attitude Assessment Survey-Revised: A new

    instrument to identify academically able students who underachieve. *Educational and*

    Psychological Measurement, 63(3), 414-429.

McCullough, M. (2015). *Improving elementary teachers' well-being through a strengths-based*

    intervention: A multiple baseline single-case design (Unpublished doctoral thesis).

    Retrieved from ProQuest.

McDougal, J. L., Bardos, A. N., & Meier, S. T. (2016). Behavior Intervention Monitoring

    Assessment System (BIMAS-2). Greeley, CO, Edumetrisis, LLC.

Mclntosh, K., Campbell, A. L., Carter, D. R., & Zumbo, B. D. (2009). Concurrent validity of

    office discipline referrals and cut points used in schoolwide positive behavior support.

    Behavioral Disorders, 34(2) 100-113.

McKillip, M. E. M., & Mackey, P. E. (2013). College access and success among high school

     graduates taking the SAT: African American students. Research Note 2013-2015.

     College Board. Available from

     http://www.eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=ED562633

McKillip, M. E., & Rawls, A. (2013). A closer examination of the academic benefits of AP. *The*

     Journal of Educational Research, *106*(4), 305-318.

McMahon, S. D., Grant, K. E., Compas, B.E., Thurm, A. E., & Ey, S. (2003). Stress and

     psychopathology in children and adolescents: Is there evidence of specificity?. *Journal of*

     Child Psychology and Psychiatry, *44*(1), 107-133.

Meier, S., McDougal, J., Bardos, A. N. (2011). The Behavior Intervention Monitoring

     Assessment System (BIMAS). Toronto, MHS, Inc.

Miller, F. G., Cohen, D., Chafouleas, S. M., Riley-Tillman, T., Welsh, M. E., & Fabiano, G. A.

     (2015). A comparison of measures to screen for social, emotional, and behavioral risk.

     School Psychology Quarterly, 30(2), 184-196. doi:10.1037/spq0000085

Miller, L. D., Martinez, Y. J., Shumka, E., Baker, H. (2014). Multiple informant agreement of

     child, parent, and teacher ratings of child anxiety within community samples. *Canadian*

     Journal of Psychiatry, 59(1), 34-39.

Miller, W. R., & Rollnick, S. (2012). *Motivational interviewing: Helping people change*.

     Guilford press.

Moffa, K., Dowdy, E., & Furlong, M. J. (2016). Exploring the Contributions of School

     Belonging to Complete Mental Health Screening. *The Educational and Developmental*

     Psychologist, *33*(1), 16-32.

Mollins, N. C., & Clopton, J. R. (2002). Teachers' reports of the problem behavior of children in their classrooms. *Psychological Reports, 90*(1), 157-164.

Moor, S., Sharrock, G., Scorr, J., McQueen, H., Wrate, R., Cowan, J., & Blair, C. (2000). Evaluation of a teaching package designed to improve teachers' recognition of depressed pupils - a pilot study. *Journal of Adolescence*, *23*(3), 331-342.

Muris, P. (2001). A brief questionnaire for measuring self-efficacy in youths. *Journal of Psychopathology and Behavioral Assessment, 23*, 145-149.

Murphy, D., & Dodd, B. G. (2009). A comparison of college performance of matched AP and non-AP student groups (College Board Research Report No. 2009-6). Retrieved from https://research.collegeboard.org/sites/default/files/publications/2012/7/researchreport 2009-6-comparision-college-performance-matched-ap-non-ap-student-groups.pdf

National Association for Gifted Children (2015). 2014-2015 State of the States in Gifted Education: Policy and Practice Data. Retrieved from http://www.nagc.org/sites/default/files/key%20reports/2014-2015%20State%20of%20the%20States%20summary.pdf

Neihart, M., Reis, S. M., Robinson, N., & Moon, S. (2002). *The social and emotional development of gifted children: What do we know?*. Sourcebooks, Inc..

Ollendick, T. H., Oswald, D. P., & Francis, G. (1989). Validity of teacher nomination in identifying aggressive, withdrawn, and popular children. *Journal of Clinical Child Psychology, 18*(3), 221-229.

Olfson, M., Blanco, C., Wang, S., Laje, G., & Correll, C. U. (2014). National trends in the mental health care of children, adolescents, and adults by office-based physicians. *JAMA psychiatry*, *71*(1), 81-90.

Owens, P. L., Hoagwood, K., Horwitz, S. M., Leaf, P. J., Poduska, J. M., Kellam, S. G., & Ialongo, N. S. (2002). Barriers to children's mental health services. *Journal of the American Academy of Child & Adolescent Psychiatry*, *41*(6), 731-738.

Patterson, J. M., & McCubbin, H. I. (1987). Adolescent coping style and behaviors: Conceptualization and measurement. *Journal of Adolescence, 10*, 163-186.

Pearcy, M. T., Clopton, J. R., & Pope, A. W. (1993). Influences on teacher referral of children to mental health services: Gender, severity, and internalizing versus externalizing problems. *Journal of Emotional and Behavioral Disorders*, *1*(3), 165-169.

Perou, R., Bitsko, R. H., Blumberg, S. J., Pastor, P., Ghandour, R. M., Gfroerer, J. C., ... & Parks, S. E. (2013). Mental health surveillance among children—United States, 2005–2011. *Morbidity and Mortality Weekly Report Surveillance Summary*, *62*(2), 1-35.

Protection of Pupil Rights Amendment (PPRA), 20 U.S.C. § 1232h (2011). Retrieved from United States Department of Education.

QPR Institute for Suicide Prevention. (2014). Retrieved June 11, 2015, from https://www.qprinstitute.com/index.html

Raviv, A., Raviv, A., Vago-Gefen, I., & Fink, A. S. (2009). The personal service gap: Factors affecting adolescents' willingness to seek help. *Journal of Adolescence, 32*, 483-499.

Reinke, W. M., Stormont, M., Herman, K. C., Puri, R., & Goel, N. (2011). Supporting children's mental health in schools: Teacher perceptions of needs, roles, and barriers. *School Psychology Quarterly*, *26*(1), 1.

Reis, C., & Cornell, D. (2008). An evaluation of suicide gatekeeper training for school counselors and teachers. *Professional School Counseling, 11*(6), 386-394.

Reschly, A. L., & Christenson, S. L. (2012). Jingle, jangle, and conceptual haziness: Evolution and future directions of the engagement construct. In *Handbook of research on student engagement* (pp. 3-19).

Richardson, M. J., Caldarella, P., Young, B. J., Young, E. L, & Young, K. R. (2009). Further validation of the Systematic Screening for Behavior Disorders in middle and junior high school. Psychology in the Schools, 46(7), 605-615.

Riley-Tillman, T.C., Chafouleas, S.M., Sassu, K.A., Chanese, J.A.M., & Glazer, A.D. (2008). Examining the agreement of Direct Behavior Ratings and Systematic Direct Observation for on-task and disruptive behavior. *Journal of Positive Behavior Interventions, 10*, 136-143.

Rita, R., & Martin-Dunlop, C. (2011). Perceptions of the learning environment and associations with cognitive achievement among gifted biology students. *Learning Environments Research*, 14, 25-38.

Reynolds, C. R., & Kamphaus, R. W. (1992). *Manual: Behavior Assessment System for Children*, Circle Pines, MN: American Guidance Service.

Roberti, J. W., Harrington, L. N., & Storch, E. A. (2006). Further psychometric support for the 10-item version of the perceived stress scale. *Journal of College Counseling, 9*(2), 135-147.

Roeser, R. W., Eccles, J.S., & Freedman-Doan, C. (1999). Academic functioning and mental health in adolescence: Patterns, progressions, and routes from childhood. *Journal of Adolescent Research, 14*, 135-174.

Roeser, R. W., Eccles, J. S., & Sameroff, A. J. (2000). Schools as a context of early adolescents'

academic and social-emotional development: A summary of research findings. *The*

Elementary School Journal, 100, 443-471.

Roeser, R. W., & Midgley, C. (1997). Teachers' views of issues involving students' mental

health. *The Elementary School Journal*, *98*(2), 115-133.

Rose, D. J., & Church, R. J. (1998). Learning to teach: The acquisition and maintenance of

teaching skills. *Journal of Behavioral Education*, *8*(1), 5-35.

Sargisson, R. J., Stanley, P. G., & Hayward, A. (2016). Multi-informant scores and gender

differences on the Strengths and Difficulties Questionnaire for New Zealand children.

New Zealand Journal of Psychology, *45*(2).

Seligman, M. E. P., & Csikszentmihalyi, M (2000). Positive psychology: An introduction.

American Psychologist, 55, 5-14.

Seligson, J., Huebner, E. S., & Valois, R. F. (2003). Preliminary validation of the Brief

Multidimensional Students' Life Satisfaction Scale (BMSLSS). *Social Indicators*

Research, 61, 121-145.

Severson, H. H., Walker, H. M., Hope-Doolittle, J., Kratochwill, T. R., & Gresham, F. M.

(2007). Proactive, early screening to detect behaviorally at-risk students: Issues,

approaches, emerging innovations, and professional practices. *Journal of School*

Psychology, 45(2), 193-223.

Shanley, D. C., Reid, G. J., & Evans, B. (2008). How parents seek help for children with mental

health problems. *Administration and Policy in Mental Health and Mental Health Services*

*Research,35,*135-146.

Sinclair, M. F., Christenson, S. L., Lehr, C. A., & Anderson, A. R. (2003). Facilitating Student

Engagement: Lessons Learned from Check & Connect Longitudinal Studies. *California School Psychologist*, *8*.

Skiba, R. J., Horner, R. H., Chung, C. G., Rausch, M. K., May, S. L., & Tobin, T. (2011). Race is not neutral: A national investigation of African American and Latino disproportionality in school discipline. *School Psychology Review*, *40*(1), 85.

Skinner, E. A., Kinderman, T. A., & Furrer, C. J. (2009). A motivational perspective on engagement and disaffection: Conceptualization and assessment of children's behavioral and emotional participation in academic activities in the classroom. *Educational and Psychological Measurement, 69*, 493–525.

Slade, E. P. (2002). Effects of school based mental health programs on mental health service use by adolescents at school and in the community. *Mental Health Service Research, 4*, 151-166.

Soles, T., Bloom, E. L., Heath, N. L., & Karagiannakis, A. (2008). An exploration of teachers' current perceptions of children with emotional and behavioural difficulties. *Emotional and Behavioural Difficulties, 13*(4), 275-290.

Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory (STAI)* CA: Consulting Psychologists Press.

Storey, E. (2016). *Relationship between teacher characteristics and accuracy in identifying middle school students with symptoms of anxiety and depression* (Unpublished thesis). Retrieved from ProQuest.

Strein, W., Kuhn-McKearin, M., & Finney, M. (2014). Best practices in developing prevention strategies for school psychology practice. In P.L. Harrison & A. Thomas (Eds.), *Best*

practices in school psychology: Systems-level services (137-148). Bethesda, M.D.: NASP

Publications.

Suldo, S. M. (2015). Facilitating academic success and emotional well-being among high school

students in accelerated curricula. [In-progress grant]. *Retrieved from* September 09, 2017,

from https://ies.ed.gov/funding/grantsearch/details.asp?ID=1734

Suldo, S. M., Bateman, L. P., & Gelley, C. D. (2014). Understanding and promoting school

satisfaction in children and adolescents. *Handbook of positive psychology in schools*,

365-380.

Suldo, S. M., Gormley, M. J., DuPaul, G. J., & Anderson-Butcher, D. (2014). The impact of

school mental health on student and school-level academic outcomes: Current status of

the research and future directions. *School Mental Health*, *6*(2), 84-98.

Suldo, S. M., Dedrick, R. F., Shaunessy-Dedrick, E, Roth, R. Ferron, J. (2015). Development

and initial validation of the Student Rating of Environmental Stressors Scale (StRESS):

Stressors faced by students in accelerated high school curricula. *Journal of*

Psychoeducational Assessment, 33(4), 339-356.

Suldo, S. M., Shaunessy, E., & Hardesty, R. (2008). Relationships among stress, coping, and

mental health in high-achieving high school students. *Psychology in the Schools*, *45*(4),

273-290.

Suldo, S. M., Shaunessy, E., Thalji, A., Michalowski, J., & Shaffer, E. (2009). Sources of stress

for students in high school college preparatory and general education programs: Group

differences and associations with adjustment. *Adolescence*, *44*(176), 925.

Suldo, S. M., & Shaunessy-Dedrick, E. (2013a). The psychosocial functioning of high school

students in academically rigorous programs. *Psychology in the Schools*, *50*(8), 823-843.

Suldo, S. M., & Shaunessy-Dedrick, E. (2013b). Changes in stress and psychological adjustment

    during the transition to high school among freshmen in an accelerated curriculum.

    Journal of Advanced Academics, *24*(3), 195-218.

Suldo, S. M., Shaunessy-Dedrick, E., Ferron, J., & Dedrick, R. F. (2018). Predictors of success

    among high school students in Advanced Placement and International Baccalaureate

    programs. *Gifted Child Quarterly*, *62*(4), 350-373.

Suldo, S. M., Storey, E., O'Brennan, L. M., Shaunessy-Dedrick, E., Ferron, J. M., Dedrick, R. D.

    (2018). *Identifying high school freshmen with signs of emotional or academic risk:*

    Screening methods appropriate for students in accelerated courses. Manuscript

    submitted for publication.

Taylor, M. L., & Porath, M. (2006). Reflections on the International Baccalaureate program:

    Graduates' perspectives. *Journal of Secondary Gifted Education*, *17*(3), 149-158.

Thomas, N., Marken, S., Gray, L., & Lewis, L. (2013). Dual credit and exam-based courses in

    U.S. public high schools: 2010–11 (NCES 2013-001). U.S. Department of Education.

Washington, DC: National Center for Education Statistics. Retrieved

    fromhttp://nces.ed.gov/pubs2013/2013001.pdf

Valdez, C. R., Lambert, S. F., & Ialongo, N.S. (2011). Identifying patterns of early risk for

    mental health and academic problems in adolescence: A longitudinal study of urban

    youth. *Child Psychiatry and Human Development, 42*, 521-538.

Van Luling, L. M. (2015) *Externalizing and internalizing problems: Does one trump the other?*

    A comparison of teacher referral methods for determining student risk of social,

    emotional & behavioral health needs (Unpublished doctoral dissertation). Retrieved from

    ProQuest.

Vieira, M. A., Gadelha, A. A., Moriyama, T. S., Bressan, R. A., & Bordin, I. A. (2014). Evaluating the effectiveness of a training program that builds teachers' capability to identify and appropriately refer middle and high school students with mental health problems in Brazil: an exploratory study. *BMC Public Health, 14*(1), 210.

Voelkl, K. E. (2012). School identification. In S.L. Christenson, A. L. Reschley, and C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 193-218). New York: Springer Science + Business Media.

Walcott, C. M., Charvat, J., McNamara, K. M., Hyson, D. M. (2016). *School Psychology at a glance: 2015 member survey results*. Paper presented at the National Association of School Psychologists Annual Convention, New Orleans, LA.

Walker, H. M., Nishioka, V. M., Zeller, R., Severson, H. H., & Feil, E. G. (2000). Causal factors and potential solutions for the persistent underidentification of students having emotional or behavioral disorders in the context of schooling. *Assessment for Effective Intervention, 26*(1), 29-39.

Walker, H. M., Severson, H. H., & Feil, E. G. (2014). *Systematic Screening for Behavior Disorders* (2nd ed.) Eugene, OR: Pacific Northwest Publishing.

Warne, R. T., Larsen, R., Anderson, B., & Odasso, A. J. (2015). The impact of participation in the Advanced Placement program on students' college admissions test scores. *The Journal of Educational Research*, *108*(5), 400-416.

Whitcomb, S., & Merrell, K. W. (2013). *Behavioral, social, and emotional assessment of children and adolescents*. Routledge.

Williams, J. H., Horvath, V. E., Hsi-sheng, W., Van Dorn, R. A., & Jonson-Reid, M. (2007). Teachers' perspectives of children's mental health service needs in urban elementary schools. *Children & Schools, 29*(2), 95.

World Health Organization. (2014). *Young people: Health risks and solutions* (Fact sheet No. 345). Geneva, Switzerland: Author.

Wylie (Eds.), *Handbook of research on student engagement* (pp. 3-19). New York: Springer Science + Business Media.

Zuckerman, M., Eysenck, S. B., & Eysenck, H. J. (1978). Sensation seeking in England and America: Cross-cultural, age, and sex comparisons. Journal of consulting and clinical psychology, 46(1), 139.Youth Mental Health First Aid. (2013). Retrieved June 10, 2015, from http://www.mentalhealthfirstaid.org/cs/

Zullig, K. J., Huebner, E. S., & Patton, J. M. (2011). Relationships among school climate domains and school satisfaction. *Psychology in the Schools*, *48*(2), 133-145.

APPENDICES

Appendix A: Teacher Demographic Information Form

ID # _____

1. I currently teach grades: 9   10   11   12

2. Number of AP Human Geography / IB Inquiry Sections taught:_____

3. My gender is: Male   Female

4. My ethnicity is:

    a. Hispanic or Latino   b. Not Hispanic or Latino

5. My race is:

    a. American Indian or Alaska Native   e. White

    b. Asian   f. Multi-racial (please specify):_____

    c. Black or African American   g. Other (please specify): _____

    d. Native Hawaiian or Other Pacific Islander

6. My highest education level is:

    a. Bachelors/college degree (BA, BS)   e. Ed.S/Specialist level degree

    b. Master's degree (MA)   f. Doctorate (Ph.D, Psy.D., Ed.D.)

    c. MA + 30 (or equivalent)   g. Other (please specify):_____

7. Number of years teaching in career: _____

8. Number of years teaching at this school: _____

9. Number of years teaching AP/IB courses: _____

10. Age: _____years old

Appendix B: Student Demographic Information Form

Fall 2017   School: _____   Version: A B C D   Code #:_____

1. Birthdate: _____ - _____ - _____
             (month) (day) (year)

2. My age is: 14   15   16   3. My gender is: ☐ Male   ☐ Female

4. In middle school, were you:
   a. in an IB school (MYP)?   ☐ No   ☐ Yes   Which school?_____

   b. in a magnet program?   ☐ No   ☐ Yes Which program?_____

   c. in Honors/advanced classes?   ☐ No   ☐ Yes

5. Are you of Hispanic, Latino, or Spanish origin?

   ☐ No, not of Hispanic, Latino, or Spanish origin

   ☐ Yes, Puerto Rican   ☐ Yes, Mexican, Mexican American, Chicano
   ☐ Yes, Cuban   ☐ Yes, another Hispanic, Latino, or Spanish origin (specify):_____

6. My race/ethnic identity is: (circle all that apply)

   ☐ White   ☐ American Indian/Alaska Native

   ☐ Black or African American   ☐ Native Hawaiian or Other Pacific Islander

   ☐ Asian   ☐ Other (specify):_____

7. My parents are:

   ☐ Married   ☐ Never married
   ☐ Divorced   ☐ Never married but living together
   ☐ Separated   ☐ Widowed

8. Which adult(s) do you live with most of the time?

   ☐ Mother and Father   ☐ Father and Step-mother (or partner)
   ☐ Mother only   ☐ Grandparent(s)
   ☐ Father only   ☐ Other relative (please specify): _____
   ☐ Mother and Step-father (or partner)   ☐ Other (please specify): _____

9. My father's highest education level is:

   ☐ 8th grade or less   ☐ College/university degree
   ☐ Some high school, did not complete   ☐ Master's degree
   ☐ High school diploma/GED   ☐ Doctoral level degree (Ph.D, M.D.) or other degree
   ☐ Some college, did not complete   beyond Master's level

10. My mother's highest education level is:

   ☐ 8th grade or less   ☐ College/university degree
   ☐ Some high school, did not complete   ☐ Master's degree
   ☐ High school diploma/GED   ☐ Doctoral level degree (Ph.D, M.D.) or other degree
   ☐ Some college, did not complete   beyond Master's level

PRACTICE ITEM #1 *Think about the <u>current school year</u>. When you are (or have been) faced with school-related challenges or stress, how often do you:*	Never	Rarely	Some-times	Freque-ntly	Almost Always
1. Stay after school for tutoring	☐	☐	◄	►	▲

PRACTICE ITEM #2 *Statement:*	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1. I like being in school.	☐	☐	◄	►	▲

Appendix C: Treatment Acceptability Form (Adapted from IRP-15)

Directions: Please rate the intervention (the session you just completed) along the following dimensions. Please circle the number which best describes your agreement or disagreement with each statement.

	Strongly Disagree	Disagree	Disagree Slightly	Slightly Agree	Agree	Strongly Agree
1. This would be an acceptable intervention for improving the agreement between a teacher's identification of AP/IB students with academic and emotional risk, and student self-report and school records	1	2	3	4	5	6
2. Most teachers would find this intervention appropriate to use in the school environment.	1	2	3	4	5	6
3. This intervention proves effective in assisting teachers identify students who could benefit for additional supports.	1	2	3	4	5	6
4. I would suggest this intervention to other teachers.	1	2	3	4	5	6
5. Most teachers would find this intervention suitable for improving teachers' identification of 9th grade AP/IB students with academic or emotional risk.	1	2	3	4	5	6
6. This intervention would **not** result in negative side-effects for the teacher.	1	2	3	4	5	6
7. This intervention would be appropriate for a variety of teachers.	1	2	3	4	5	6
8. I liked the procedure used in this intervention.	1	2	3	4	5	6
9. This intervention was a good way to support my growth in identifying AP/IB students with academic risk.	1	2	3	4	5	6
10. This intervention was a good way to support my growth in identifying AP/IB students with emotional risk.	1	2	3	4	5	6

11. Overall, this intervention would be beneficial for a teacher.	1	2	3	4	5	6

12. What do you feel are some of the most important things you learned in the intervention?

_____
_____
_____

13. What did you like best about the intervention (feedback session)?

_____
_____
_____

14. What did you like least about the intervention (feedback session)?

_____
_____
_____

16. What suggestions do you have to improve the intervention (feedback session)?

_____
_____
_____

17. Amy additional comments?

_____
_____
_____

Appendix D: Student Self-Report Screening Form

ACE Program Check-In

Name: _____ Code #_____ School:_____

Teacher: _____ Period: _____ Date: _____

We would like to know what thoughts about life you've had <u>during the past several weeks</u>. Think about how you spend each day and night, and then think about how your life has been during most of this time. The statements below are about your <u>satisfaction with life at school</u> in particular. For each statement, circle a number from (1) to (6) where (1) indicates you **strongly** <u>disagree</u> with the statement and (6) indicates you **strongly agree** with the statement.

	Strongly Disagree	Moderately Disagree	Mildly Disagree	Moderately Agree	Mostly Agree	Strongly Agree
1. I feel bad at school	1	2	3	4	5	6
2. I learn a lot at school	1	2	3	4	5	6
3. There are many things about school I don't like	1	2	3	4	5	6
4. I wish I didn't have to go to school	1	2	3	4	5	6
5. I look forward to going to school	1	2	3	4	5	6
6. I like being in school	1	2	3	4	5	6
7. School is interesting	1	2	3	4	5	6
8. I enjoy school activities	1	2	3	4	5	6

The next questions ask you about your feelings and thoughts during <u>the last month</u>. In each case, you will be asked to indicate *how often* you felt or thought a certain way.

In the last month, how often have you...	Never	Almost never	Some-times	Fairly often	Very often
9. ...been upset because of something that happened unexpectedly?	1	2	3	4	5
10. ...felt that you were unable to control the important things in your life?	1	2	3	4	5
11. ...felt nervous and "stressed"?	1	2	3	4	5
12. ...found that you could not cope with all the things that you had to do?	1	2	3	4	5
13. ...been angered because of things that happened that were outside of your control?	1	2	3	4	5
14. ...felt difficulties were piling up so high that you could not overcome them?	1	2	3	4	5

The next questions ask you about the grades you earned during the <u>first semester of 9th grade</u>.

15. What was your unweighted GPA from fall 2016 (e.g., 3.25)?   ___._____
16. What grade did you earn in (AP Human Geography OR IB Biology)? _____

--Make sure that you have provided only one response per line. Do not skip any of the 16 items.
Give your completed survey to a USF ACE counselor. Thank you for your time!--

Appendix E: Permission to use PSS

Dr. Cohen's Scales:

We welcome copies (e-mail is OK) of any in press or published papers using any of Dr. Cohen's scales that you are willing to share with us, and thank you in advance for your generosity. They will not be redistributed or linked without your permission.

Permissions: Permission for use of scales is not necessary when use is for nonprofit academic research or nonprofit educational purposes. For other uses, please contact the lab at commoncoldproject@andrew.cmu.edu for instructions.

Main

Dr. Sheldon Cohen

Vita

Laboratory Members

Abstracts

Scales

Publications by Topics

Reprints and Permissions

CMU Psychology

Common Cold Project Website

PAPERS O

(1.) Cohen, S., & Janicki-Deverts, D. (2012). Wh
psychological stress in the United States in proba
2009. Journal of Applied Social Psychology, 42,
NORMATIVE DATA for the PSS-10 from large
the U.S.

(2.) Cohen, S., Kamarck, T., & Mermelstein, R. (
stress. Journal of Health and Social Behavior, 24,
(provides **RELIABILITY and VALIDITY**)

(3.) Cohen, S., & Williamson, G. (1988). Perceiv
U.S. In S. Spacapam & S. Oskamp (Eds.), The sc
Symposium on Applied Social Psychology. New
(provides **NORMATIVE DATA** for the PSS-4, I
sample polled in 1983)

(4.) Warttig, S. L., Forshaw, M. J., South, J., & W

Appendix F: Permission to use MSLSS

Dr. Scott Huebner's Life Satisfaction Scales

These Life Satisfaction Scales developed by Dr. Huebner are not copyrighted and can be used without charge and without permission by interested researchers.

Manual for the Multidimensional Students' Life Satisfaction Scale [pdf] ⬈

Multidimensional Students' Life Satisfaction Scale Items [pdf] ⬈

Students' Life Satisfaction Scale [pdf] ⬈

Brief Multidimensional Students' Life Satisfaction Scale [pdf] ⬈

College of **Arts and Sciences**   ⊙ Location   ⊠ Contact   ⊕ Give   ▦ Calendar   Social Media

＋ Menu

UNIVERSITY OF SOUTH CAROLINA   Challenge the conventional. Create the exceptional. **No Limits.**

Appendix G: Teacher Consent Form: District A

Dear Teacher:

This letter provides information about a research study that will be conducted at your school by researchers from the University of South Florida (USF). The goal of the project is to evaluate a teacher feedback session aimed to increase agreement between teacher identification of students with signs of emotional and academic risk, and students identified as having signs of risk per self-report and school records. The teacher feedback session aims to improve a screening procedure to identify Advanced Placement (AP) or International Baccalaureate (IB) students for receipt of extra supports at school.

- ✓ Who We Are: This study is led by Dr. Shannon Suldo, in collaboration with other faculty as well as graduate students (including Elizabeth Storey) in the USF College of Education.

- ✓ Why We are Requesting Your Participation: This study is part of a project entitled, "Supporting High School Students in College-Level Classes." You are being asked to participate because you teach an AP or IB class in a school that is participating in the Advancing Coping and Engage (ACE) program this year. Further, your school is in a district that is using teacher nominations as part of a multimethod approach to identifying students for Tier 2 supports (i.e., the Motivation, Assessment, and Planning [MAP] intervention). A "teacher nomination" is a systematic process wherein teachers review a roster of students in their class and indicate which student(s) have shown signs of academic and/or emotional problems.

- ✓ Why You Should Participate: Schools need evidence-based ways to help detect high school students in college-level courses who are at-risk academically and emotionally. Accurate detection of at-risk students is an important first step in connecting students to needed extra supports to promote their emotional and academic wellness. To address this need, we are evaluating a short feedback session designed to increase the agreement between teacher nominations of *emotional risk* and student self-report of school satisfaction and stress, and agreement between teacher nominations of *academic risk* and students' course grades per school records. In the feedback session, teachers will receive information on the initial level of agreement between their nominations of students with signs of academic or emotional problems, and students identified as at-risk based on student self-report ratings and course grades per school records. The data that we collect from participating teachers will be used to inform and improve how we identify AP/IB students who are at-risk academically and emotionally. Also, we will incorporate teacher perspectives in improving the quality of the teacher feedback session. This refinement process will ensure the feedback session is highly usable with future and educators. Please note you will not be paid for participation in the feedback session. However, you will receive a $50 incentive (gift card) if you decide to participate in the feedback session (outside of instructional time) and provide your perspectives on the session content and materials. Incentive for participation in the feedback session will be in addition to any participation in research activities to which you have already provided your consent with regard to the ongoing ACE student and teacher program.

- ✓ What Participation Requires: Teachers in the intervention schools within districts completing the teacher nomination procedure will be offered a one-hour feedback session. This session will include information on prevalence rates of AP and IB students with signs of emotional risk (defined by high levels of perceived stress and low levels of school satisfaction) or academic risk (defined by class grades and grade point average). Then, a teacher will receive information on the level of agreement between his or her recent nominations, and his or her students' risk status as determined by school records (first semester course grades) and student self-report of perceived stress and school satisfaction. Teachers who participate in the feedback session will be asked to share their reactions to and perspectives on the content of the feedback session. This single feedback session will be scheduled to take place outside of instructional time. In total, participation in the feedback session, and completion of the feedback rating form, will take no more than approximately 1 hour for teacher participants during the 2017-18 school year

- ✓ Confidentiality of Your Responses: This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study. You will receive no benefits by participating in this research study. Your

DEPARTMENT OF EDUCATIONAL AND PSYCHOLOGICAL STUDIES • COLLEGE OF EDUCATION
University of South Florida • 4202 East Fowler Avenue – EDU 105 • Tampa, FL 33620-5650
Version 1; December 8, 2017; Page 1 of 2

228

Appendix G: Teacher Consent Form: District A (cont.)

privacy and research records will be kept confidential to the extent of the law. Authorized research personnel, employees of the Department of Health and Human Services, the USF Institutional Review Board and its staff, and other individuals acting on behalf of USF may inspect the records from this research project, but we will not share your individual responses with school system personnel or anyone other than us and our research assistants. Your responses during interactions in which you provide verbal feedback on session materials will be audio recorded, de-identified, and assigned a code number to protect the confidentiality of your statements. Only we will have access to the locked file cabinet stored at USF that will contain all records linking code numbers to participants' names. All records from the study (e.g., transcribed interviews, audio files) will be destroyed in five years.

✓ Please Note: Your decision to participate in this research study must be completely voluntary. You are free to participate in this study or to withdraw at any time. Any decision to participate, not to participate, or to withdraw participation at any point during the study will in no way affect your relationship with your high school, school district, USF, or any other party. You do not have to participate in this research study.

✓ What We'll Do With Your Responses: We plan to use information from this study to determine if the brief feedback sessions for teachers is helpful in increasing identification of AP/IB students who emerge from a screening process as at-risk based on their self-report of perceived levels of stress and school satisfaction, and their school records (e.g., grades). Results from data collected during this study may be published. However, the data obtained from you will be combined with data from other people in the publication. The published results will not include your name or any other information that would in any way personally identify you.

✓ Questions? If you have any questions about this research study, please contact us at (703) 963-0356 (Elizabeth Storey) or (813) 974-2223 (Dr. Suldo). If you have questions about your rights as a person who is taking part in a research study, you may contact a member of The Office of Research Integrity and Compliance at the University of South Florida at 813-974-5638, and refer to eIRB # 22787.

✓ To participate in this study, complete the consent form below (titled "Consent to Take Part in this Research Study"). Please keep the other copy of this letter for your records.

Sincerely,
Shannon Suldo, Ph.D.   Elizabeth Storey, M.A.
Professor of School Psychology   Doctoral Candidate

Consent to Take Part in this Research Study

I freely give my permission to take part in this study. I understand that this is research. I have received a copy of this letter and consent form for my records.

_____   _____   _____
Signature of adult   Printed name of adult   Date

(Portion for USF to Complete): Statement of Person Obtaining Informed Consent

I certify that participants have been provided with an informed consent form that has been approved by the University of South Florida's Institutional Review Board and that explains the nature, demands, risks, and benefits involved in participating in this study. I further certify that a phone number has been provided in the event of additional questions.

_____   _____   _____
Signature of person obtaining consent   Printed name of person obtaining consent   Date

Appendix H: Teacher Consent Form: District B

Dear Teacher:

This letter provides information about a research study that will be conducted at your school by researchers from the University of South Florida (USF). The goal of the project is to evaluate a teacher feedback session aimed to increase agreement between teacher identification of students with signs of emotional and academic risk, and students identified as having signs of risk per self-report and school records. The teacher feedback session aims to improve a screening procedure to identify Advanced Placement (AP) or International Baccalaureate (IB) students for receipt of extra supports at school.

- ✓ Who We Are: This study is led by Dr. Shannon Suldo, in collaboration with other faculty as well as graduate students (including Elizabeth Storey) in the USF College of Education.

- ✓ Why We are Requesting Your Participation: This study is part of a project entitled, "Supporting High School Students in College-Level Classes." You are being asked to participate because you teach an AP or IB class in a school that is participating in the Advancing Coping and Engage (ACE) program this year. Further, your school is in a district that is using teacher nominations as part of a multimethod approach to identifying students for Tier 2 supports (i.e., the Motivation, Assessment, and Planning [MAP] intervention). A "teacher nomination" is a systematic process wherein teachers review a roster of students in their class and indicate which student(s) have shown signs of academic and/or emotional problems.

- ✓ Why You Should Participate: Schools need evidence-based ways to help detect high school students in college-level courses who are at-risk academically and emotionally. Accurate detection of at-risk students is an important first step in connecting students to needed extra supports to promote their emotional and academic wellness. To address this need, we are evaluating a short feedback session designed to increase the agreement between teacher nominations of *emotional risk* and student self-report of school satisfaction and stress, and agreement between teacher nominations of *academic risk* and students' course grades per school records. In the feedback session, teachers will receive information on the initial level of agreement between their nominations of students with signs of academic or emotional problems, and students identified as at-risk based on student self-report ratings and course grades per school records. The data that we collect from participating teachers will be used to inform and improve how we identify AP/IB students who are at-risk academically and emotionally. Also, we will incorporate teacher perspectives in improving the quality of the teacher feedback session. This refinement process will ensure the feedback session is highly usable with future and educators. Please note you will not be paid for participation in the feedback session. However, a $50 incentive will be routed to your school account if you decide to participate in the feedback session (outside of instructional time) and provide your perspectives on the session content and materials. Incentive for participation in the feedback session will be in addition to any participation in research activities to which you have already provided your consent with regard to the ongoing ACE student and teacher program.

- ✓ What Participation Requires: Teachers in the intervention schools within districts completing the teacher nomination procedure will be offered a one-hour feedback session. This session will include information on prevalence rates of AP and IB students with signs of emotional risk (defined by high levels of perceived stress and low levels of school satisfaction) or academic risk (defined by class grades and grade point average). Then, a teacher will receive information on the level of agreement between his or her recent nominations, and his or her students' risk status as determined by school records (first semester course grades) and student self-report of perceived stress and school satisfaction. Teachers who participate in the feedback session will be asked to share their reactions to and perspectives on the content of the feedback session. This single feedback session will be scheduled to take place outside of instructional time. In total, participation in the feedback session, and completion of the feedback rating form, will take no more than approximately 1 hour for teacher participants during the 2017-18 school year

- ✓ Confidentiality of Your Responses: This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study. You will receive no benefits by participating in this research study. Your

UNIVERSITY OF
SOUTH FLORIDA

Appendix H: Teacher Consent Form: District B (cont.)

privacy and research records will be kept confidential to the extent of the law. Authorized research personnel, employees of the Department of Health and Human Services, the USF Institutional Review Board and its staff, and other individuals acting on behalf of USF may inspect the records from this research project, but we will not share your individual responses with school system personnel or anyone other than us and our research assistants. Your responses during interactions in which you provide verbal feedback on session materials will be audio recorded, de-identified, and assigned a code number to protect the confidentiality of your statements. Only we will have access to the locked file cabinet stored at USF that will contain all records linking code numbers to participants' names. All records from the study (e.g., transcribed interviews, audio files) will be destroyed in five years.

✓ Please Note: Your decision to participate in this research study must be completely voluntary. You are free to participate in this study or to withdraw at any time. Any decision to participate, not to participate, or to withdraw participation at any point during the study will in no way affect your relationship with your high school, school district, USF, or any other party. You do not have to participate in this research study.

✓ What We'll Do With Your Responses: We plan to use information from this study to determine if the brief feedback sessions for teachers is helpful in increasing identification of AP/IB students who emerge from a screening process as at-risk based on their self-report of perceived levels of stress and school satisfaction, and their school records (e.g., grades). Results from data collected during this study may be published. However, the data obtained from you will be combined with data from other people in the publication. The published results will not include your name or any other information that would in any way personally identify you.

✓ Questions? If you have any questions about this research study, please contact us at (703) 963-0356 (Elizabeth Storey) or (813) 974-2223 (Dr. Suldo). If you have questions about your rights as a person who is taking part in a research study, you may contact a member of The Office of Research Integrity and Compliance at the University of South Florida at 813-974-5638, and refer to eIRB # 22787.

✓ To participate in this study, complete the consent form below (titled "Consent to Take Part in this Research Study"). Please keep the other copy of this letter for your records.

Sincerely,
Shannon Suldo, Ph.D.   Elizabeth Storey, M.A.
Professor of School Psychology   Doctoral Candidate

Consent to Take Part in this Research Study

I freely give my permission to take part in this study. I understand that this is research. I have received a copy of this letter and consent form for my records.

_____   _____   _____
Signature of adult   Printed name of adult   Date

(Portion for USF to Complete): Statement of Person Obtaining Informed Consent

I certify that participants have been provided with an informed consent form that has been approved by the University of South Florida's Institutional Review Board and that explains the nature, demands, risks, and benefits involved in participating in this study. I further certify that a phone number has been provided in the event of additional questions.

_____   _____   _____
Signature of person obtaining consent   Printed name of person obtaining consent   Date

Appendix I: Parent Consent Form: District A

Dear Parent or Guardian:

This letter tells you about a research study that will be done at your child's school by professors and graduate students from the University of South Florida (USF). Our goal in doing the study is to evaluate the Advancing Coping and Engagement (ACE) program. The ACE program is a classroom curriculum designed to teach students evidence-based strategies for managing stress from their rigorous courses. The ACE program is intended to improve emotional well-being and academic outcomes among students in Advanced Placement (AP) or International Baccalaureate (IB) courses.

- ✓ Who We Are: We are USF Professors Shannon Suldo and Elizabeth Shaunessy-Dedrick. Our research team includes graduate students, school psychologists, and other professors in the USF College of Education. We are doing the study in cooperation with district and school administrators to ensure the study provides information that will be helpful to students, teachers, families, and administrators.

- ✓ Why We are Requesting Your Child's Participation: This study is part of a project entitled, "Supporting High School Students in College-Level Classes." Your child is being asked to participate because he or she is in an AP or IB class.

- ✓ Why Your Child Should Participate: Schools need evidence-based programs to help high school students navigate the academic rigor of college-level courses. To address this need we are evaluating the ACE program. The ACE program was developed to build all AP and IB students' coping skills and strong connections to their school. We are also evaluating the usefulness of brief, one-on-one supports (coaching meetings) that are offered in the second half of the school year to students who may have challenges managing their academic demands. The information that we collect from students will be used to improve our intervention materials. This process will ensure the program is highly usable with future AP and IB students. The evaluation will determine the program's impact on students' emotional and academic well-being. Such information helps ensure educators select programs with evidence of promise on student outcomes. Neither you nor your child will be paid for your child's participation in the study. However, all students who participate by completing a packet of surveys on personal well-being, or provide feedback to coaching meetings, will receive a $10 gift card on each occasion. Also, all students who return this completed form (whether or not you grant your child permission to participate) will be entered in a drawing for a $50 gift card.

- ✓ What Participation Requires: Participating schools will be randomly assigned to one of two groups: *intervention* and *control*. Schools in the *intervention* group will receive support through USF during the 2017-18 school year to deliver the ACE program to select classes of 9th grade AP/IB students. Mid-way through the year, *intervention* schools will examine students' emotional and academic status through a screening. During this screening, students will complete a short survey with questions about their current level of stress and feelings about school. It will take students about 5 minutes to complete that survey. Students' ratings will be considered along with data from students' school records (first semester course grades and attendance), and teacher nominations of students who have shown signs of academic or emotional challenges. Extra support will be offered to students whose screening data indicates signs of challenges with managing academic demands. That support involves 1-2 meetings with an ACE coach. ACE coaches are from the USF research team, and are not district staff. Within each 30-60 minute meeting, students describe their values, goals, and strengths, connecting the targets in the classwide ACE program to their future goals.

  Students in the *intervention* schools who have your permission to participate in the evaluation of these supports will be asked to provide feedback on the content of the ACE program and, if applicable, the brief coaching meetings. At the end of each weekly presentation in the classwide ACE program, and at the end of each coaching meeting, participants in this study will be asked questions about the value and quality of ACE program materials through the completion of brief rating scales about the content and activities. It will take about 5 minutes to complete the brief forms, on each occasion. All discussions during individual meetings with ACE coach will be audio recorded and de-identified (all names removed from audiofiles) for research and training. Consenting for your child to participate in this project also indicates your consent for your child to be audio recorded.

  Schools in the *control* group will receive the ACE program training and intervention materials for use during the 2018-19 school year. Students in both the *intervention* and *control* groups will be asked to complete a packet of surveys with questions about their ways of coping with academic stress, feelings about school, and emotional well-being (happiness as well as symptoms of emotional or behavioral problems). Surveys also ask about students' demographic features, including two questions about parents' educational attainment. Survey packets will be given near the beginning and end of the school year. Completion of the survey packet is estimated to take about 45 minutes on each occasion. All activities will be during regular school hours and scheduled to be minimally disruptive to your child's academic course schedule. In total, participation will take no more than 2 hours for students in *control* group schools or 2-3 hours for students in *intervention* group schools during the 2017-18 school year.

  A final part of participation involves a confidential review of your child's school records. School/district employees will provide the USF team with your child's: demographic details including race/ethnicity, eligibility for free or reduced-price lunch, identification as an English Language Learner or a student with an exceptionality; district student ID numbers; achievement and in-school behavior during 2017-18 (attendance and discipline history [number

Appendix I: Parent Consent Form: District A (cont.)

of office referrals], class performance [grades earned in each course], scores on end-of-course AP and IB exams).

✓ Confidentiality of Your Child's Responses: This research is considered to be minimal risk. That means that the risks associated with this study are the same as what your child faces every day. There are no known additional risks to those who take part in this study. Your child will receive no benefits by participating in this research study. Your child's privacy and research records will be kept confidential to the extent of the law. Authorized research personnel, employees of the Department of Health and Human Services, the USF Institutional Review Board and its staff, and other individuals acting on behalf of USF may inspect the records from this research project, but we will not share your child's individual responses with school system personnel or anyone other than us and our research assistants. Your child's responses during some program activities will be digitally audio recorded, and then assigned a code number to protect the confidentiality of his or her statements. Only we will have access to the locked file cabinet stored at USF that will contain all records linking code numbers to participants' names. All records from the study will be destroyed in five years. Your child's specific responses will not be shared with school staff. However, if your child indicates that he or she intends to harm him or herself or someone else, or if your child's responses on surveys or comments during meetings with an ACE coach indicate extreme emotional distress, we will contact district mental health staff. Those individuals will follow district procedures for ensuring the safety of your child and others and following-up with parents and guardians about concerns for student well-being.

✓ Please Note: Your decision to allow your child to participate in this research study must be completely voluntary. You are free to allow your child to participate in this research study or to withdraw him or her at any time. Your child has the right to withdraw his/her assent or discontinue participation at any time without penalty. Any decision to participate, not to participate, or to withdraw participation at any point during the study will in no way affect your child's student status, his or her grades, or your relationship with your high school, school district, USF, or any other party. Your child does not have to participate in any part of this research. You or your child have the right to inspect the survey instruments before they are administered, if a request is made within a reasonable amount of time. The surveys and directions for administering them will be available at your school prior to the survey administration. Within the intervention schools, the mid-year screening of student academic and emotional status will not occur without prior parent notification. That notification form will describe the screening process, and provide instructions for how to contact the school to opt out your child from the screening if so desired by you or your child.

✓ What We'll Do With Your Child's Responses: We plan to use the information from students to further develop and improve, and determine the effectiveness of, intervention materials intended to support AP and IB students. Results from data collected during this study may be published. However, the data obtained from your child will be combined with data from other people in the publication. The published results will not include your child's name or any other information that would in any way personally identify your child.

✓ Questions? If you have any questions about this research study, please contact us at (813) 974-2223 (Dr. Suldo) or (813) 974-7007 (Dr. Shaunessy-Dedrick). If you have questions about your child's rights as a person who is taking part in a research study, you may contact a member of The Office of Research Integrity and Compliance at the University of South Florida at 813-974-5638, and refer to eIRB # 22787.

✓ Want Your Child to Participate? To permit your child to participate in this study, complete the consent form below (titled "Consent to Take Part in this Research Study"). Have your child return the green paper with the completed form to his or her designated teacher. Keep the other copy of this letter (printed on gold paper) for your records.

Sincerely,
Shannon Suldo (Professor, School Psychology)   Elizabeth Shaunessy-Dedrick (Professor, Gifted Education)
Department of Educational & Psychological Studies   Department of Teaching and Learning

---

Consent for Child to Take Part in this Research Study

I freely give my permission to let my child take part in this study. I understand that this is research. I have received a copy of this letter and consent form for my records.

_____   _____   _____
Printed name of child taking part in the study   Grade level of child   High school

_____   _____   _____
Signature of parent of child taking part in the study   Printed name of parent   Date

(Portion for USF to Complete): Statement of Person Obtaining Informed Consent
I certify that participants have been provided with an informed consent form that has been approved by the University of South Florida's Institutional Review Board and that explains the nature, demands, risks, and benefits involved in participating in this study. I further certify that a phone number has been provided in the event of additional questions.

_____   _____   _____
Signature of person obtaining consent   Printed name of person obtaining consent   Date

Appendix J: Parent Consent Form: District B

Dear Parent or Guardian:

This letter tells you about a research study that will be done at your child's school by professors and graduate students from the University of South Florida (USF). Our goal in doing the study is to evaluate the Advancing Coping and Engagement (ACE) program. The ACE program is a classroom curriculum designed to teach students evidence-based strategies for managing stress from their rigorous courses. The ACE program is intended to improve emotional well-being and academic outcomes among students in Advanced Placement (AP) or International Baccalaureate (IB) courses.

✓ Who We Are: We are USF Professors Shannon Suldo and Elizabeth Shaunessy-Dedrick. Our research team includes graduate students, school psychologists, and other professors in the USF College of Education. We are doing the study in cooperation with district and school administrators to ensure the study provides information that will be helpful to students, teachers, families, and administrators.

✓ Why We are Requesting Your Child's Participation: This study is part of a project entitled, "Supporting High School Students in College-Level Classes." Your child is being asked to participate because he or she is in an AP or IB class.

✓ Why Your Child Should Participate: Schools need evidence-based programs to help high school students navigate the academic rigor of college-level courses. To address this need we are evaluating the ACE program. The ACE program was developed to build all AP and IB students' coping skills and strong connections to their school. We are also evaluating the usefulness of brief, one-on-one supports (coaching meetings) that are offered in the second half of the school year to students who may have challenges managing their academic demands. The information that we collect from students will be used to improve our intervention materials. This process will ensure the program is highly usable with future AP and IB students. The evaluation will determine the program's impact on students' emotional and academic well-being. Such information helps ensure educators select programs with evidence of promise on student outcomes. Neither you nor your child will be paid for your child's participation in the study. However, all students who participate by completing a packet of surveys on personal well-being, or provide feedback to coaching meetings, will receive a $10 gift card on each occasion. Also, all students who return this completed form (whether or not you grant your child permission to participate) will be entered in a drawing for a $50 gift card.

✓ What Participation Requires: Participating schools will be randomly assigned to one of two groups: *intervention* and *control*. Schools in the *intervention* group will receive support through USF during the 2017-18 school year to deliver the ACE program to select classes of 9th grade AP/IB students. Mid-way through the year, *intervention* schools will examine students' emotional and academic status through a screening. During this screening, students will complete a short survey with questions about their current level of stress and feelings about school. It will take students about 5 minutes to complete that survey. Students' ratings will be considered along with data from students' school records (first semester course grades and attendance), and teacher nominations of students who have shown signs of academic or emotional challenges. Extra support will be offered to students whose screening data indicates signs of challenges with managing academic demands. That support involves 1-2 meetings with an ACE coach. ACE coaches are from the USF research team, and are not district staff. Within each 30-60 minute meeting, students describe their values, goals, and strengths, connecting the targets in the classwide ACE program to their future goals.

Students in the *intervention* schools who have your permission to participate in the evaluation of these supports will be asked to provide feedback on the content of the ACE program and, if applicable, the brief coaching meetings. At the end of each weekly presentation in the classwide ACE program, and at the end of each coaching meeting, participants in this study will be asked questions about the value and quality of ACE program materials through the completion of brief rating scales about the content and activities. It will take about 5 minutes to complete the brief forms, on each occasion. All discussions during individual meetings with ACE coach will be audio recorded and de-identified (all names removed from audiofiles) for research and training. Consenting for your child to participate in this project also indicates your consent for your child to be audio recorded.

Schools in the *control* group will receive the ACE program training and intervention materials for use during the 2018-19 school year. Students in both the *intervention* and *control* groups will be asked to complete a packet of surveys with questions about their ways of coping with academic stress, feelings about school, and emotional well-being (happiness as well as symptoms of emotional or behavioral problems). Surveys also ask about students' demographic features, including two questions about parents' educational attainment. Survey packets will be given near the beginning and end of the school year. Completion of the survey packet is estimated to take about 45 minutes on each occasion. All activities will be during regular school hours and scheduled to be minimally disruptive to your child's academic course schedule. In total, participation will take no more than 2 hours for students in *control* group schools or 2-3 hours for students in *intervention* group schools during the 2017-18 school year.

A final part of participation involves a confidential review of your child's school records. School/district employees will provide the USF team with your child's: demographic details including race/ethnicity, eligibility for free or reduced-price lunch, identification as an English Language Learner or a student with an exceptionality; district student ID numbers; achievement and in-school behavior during 2017-18 (attendance and discipline history [number

Appendix J: Parent Consent Form: District B (cont.)

of office referrals], class performance [grades earned in each course], scores on end-of-course AP and IB exams).

✓ Confidentiality of Your Child's Responses: This research is considered to be minimal risk. That means that the risks associated with this study are the same as what your child faces every day. There are no known additional risks to those who take part in this study. Your child will receive no benefits by participating in this research study. Your child's privacy and research records will be kept confidential to the extent of the law. Authorized research personnel, employees of the Department of Health and Human Services, the USF Institutional Review Board and its staff, and other individuals acting on behalf of USF may inspect the records from this research project, but we will not share your child's individual responses with school system personnel or anyone other than us and our research assistants. Your child's responses during some program activities will be digitally audio recorded, and then assigned a code number to protect the confidentiality of his or her statements. Only we will have access to the locked file cabinet stored at USF that will contain all records linking code numbers to participants' names. All records from the study will be destroyed in five years. Your child's specific responses will not be shared with school staff. However, if your child indicates that he or she intends to harm him or herself or someone else, or if your child's responses on surveys or comments during meetings with an ACE coach indicate extreme emotional distress, we will contact district mental health staff. Those individuals will follow district procedures for ensuring the safety of your child and others and following-up with parents and guardians about concerns for student well-being.

✓ Please Note: Your decision to allow your child to participate in this research study must be completely voluntary. You are free to allow your child to participate in this research study or to withdraw him or her at any time. Your child has the right to withdraw his/her assent or discontinue participation at any time without penalty. Any decision to participate, not to participate, or to withdraw participation at any point during the study will in no way affect your child's student status, his or her grades, or your relationship with your high school, school district, USF, or any other party. Your child does not have to participate in any part of this research. You or your child have the right to inspect the survey instruments before they are administered, if a request is made within a reasonable amount of time. The surveys and directions for administering them will be available at your school prior to the survey administration. Within the intervention schools, the mid-year screening of student academic and emotional status will not occur without prior parent notification. That notification form will describe the screening process, and provide instructions for how to contact the school to opt out your child from the screening if so desired by you or your child.

✓ What We'll Do With Your Child's Responses: We plan to use the information from students to further develop and improve, and determine the effectiveness of, intervention materials intended to support AP and IB students. Results from data collected during this study may be published. However, the data obtained from your child will be combined with data from other people in the publication. The published results will not include your child's name or any other information that would in any way personally identify your child.

✓ Questions? If you have any questions about this research study, please contact us at (813) 974-2223 (Dr. Suldo) or (813) 974-7007 (Dr. Shaunessy-Dedrick). If you have questions about your child's rights as a person who is taking part in a research study, you may contact a member of The Office of Research Integrity and Compliance at the University of South Florida at 813-974-5638, and refer to eIRB # 22787.

✓ Want Your Child to Participate? To permit your child to participate in this study, complete the consent form below (titled "Consent to Take Part in this Research Study"). Have your child return the green paper with the completed form to his or her designated teacher. Keep the other copy of this letter (printed on gold paper) for your records.

Sincerely,
Shannon Suldo (Professor, School Psychology)   Elizabeth Shaunessy-Dedrick (Professor, Gifted Education)
Department of Educational & Psychological Studies   Department of Teaching and Learning

Consent for Child to Take Part in this Research Study

I freely give my permission to let my child take part in this study. I understand that this is research. I have received a copy of this letter and consent form for my records.

_____   _____   _____
Printed name of child taking part in the study   Grade level of child   High school

_____   _____   _____
Signature of parent of child taking part in the study   Printed name of parent   Date

(Portion for USF to Complete): Statement of Person Obtaining Informed Consent

I certify that participants have been provided with an informed consent form that has been approved by the University of South Florida's Institutional Review Board and that explains the nature, demands, risks, and benefits involved in participating in this study. I further certify that a phone number has been provided in the event of additional questions.

_____   _____   _____
Signature of person obtaining consent   Printed name of person obtaining consent   Date

Version 1; July 5, 2017; Page 2 of 2

Appendix K: Sample Parent Screening Notification Form

XX HIGH SCHOOL
Notification of Screening

January 15, 2018

Dear Parent or Guardian,

XX High School is continuing an exciting partnership with USF to deliver the ACE Program (*Advancing Coping and Engagement for AP and IB Student Success*) to 9th grade students in Advanced Placement (AP) and International Baccalaureate (IB) classes. The ACE Program, led by Drs. Shannon Suldo and Elizabeth Shaunessy-Dedrick in the USF College of Education, teaches students effective ways of managing academic stress, as well as how to engage fully at school so students can succeed academically and emotionally.

To monitor students' well-being, in a few weeks many 9th grade students in AP and IB classes will be asked to complete a short survey about their current level of stress and feelings about school. This survey takes about 5 minutes to complete, and students' responses will be kept confidential. These ratings will be considered along with data from students' school records (first semester course grades and attendance), and teacher nominations of students who have shown signs of academic or emotional challenges. Extra support will be offered to students whose screening data indicates signs of challenges with managing academic demands. That support involves 1-2 meetings with an ACE coach from the USF research team. Within each meeting, students describe their values, goals, and strengths, and plan how to further use the coping and engagement skills they learned in the classwide ACE program in order to reach their future goals.

If you would like any additional information, please call the school (xxx) xxx-xxxx and ask for Ms. XX XX (Assistant Principal) or Dr. XX XX (School Psychologist). If you are okay with your student completing the short survey, you do not need to take any further steps. But, feel free to check "yes" below and return the signed form to your child's AP Human Geography or IB Inquiry Skills teacher. If you would prefer that your child not take part in this screening, please check "no" below and return the signed form to your child's AP Human Geography or IB Inquiry Skills teacher by Tuesday, January 24, 2018.

Sincerely,

XX XX
Assistant Principal

_____

_____**YES**, I give permission for my student (_____) to take part in the screening.

_____**NO**, I do not give permission for my student (_____) to take part in the screening
      of AP/IB student academic and emotional well-being.

_____   _____   _____
Parent's Name   Parent's Signature   Date

Appendix L: Teacher Consent Form: Pilot Interviews

Dear Teacher:

This letter provides information about a research study that is being conducted by researchers from the University of South Florida (USF). The goal of the project is to develop and then evaluate a brief teacher-focused feedback session aimed to increase teacher identification of students with signs of emotional and academic risk, and students identified as having signs of risk per self-report and school records. The teacher feedback session aims to improve a screening procedure to identify Advanced Placement (AP) or International Baccalaureate (IB) students for receipt of extra supports at school.

✓ Who We Are: This study is led by Dr. Shannon Suldo, in collaboration with other faculty as well as graduate students (including Elizabeth Storey) in the USF College of Education.

✓ Why We are Requesting Your Participation: This study is part of a project entitled, "Supporting High School Students in College-Level Classes." You are being asked to participate because you (a) teach or have taught an AP or IB class in a school that has received the Advancing Coping and Engagement (ACE) program, and (b) have previously participated in a student screening process that included teacher nominations. A "teacher nomination" is a systematic process wherein teachers review a roster of students in their class and indicate which student(s) have shown signs of academic and/or emotional problems.

✓ Why You Should Participate: Schools need evidence-based ways to help detect high school students in college-level courses who are at-risk academically and emotionally. Accurate detection of at-risk students is an important first step in connecting students to needed extra supports to promote their emotional and academic wellness. To address this need, we are developing a feedback session designed to increase the agreement between teacher nominations of *emotional risk* and student self-report of school satisfaction and stress, and agreement between teacher nominations of *academic risk* and students' course grades per school records. The feedback that we collect from teachers will be used to improve how we identify students in college-level curricula who are at-risk academically and emotionally. In particular, your feedback will help to improve the quality and clarity of the teacher feedback session. This refinement process will ensure the feedback session is highly usable with future educators. Please note you will not be paid for participation in the pilot feedback session. However, you will receive a $50 incentive (gift card) if you decide to participate in the feedback session outside of instructional time, and provide your reactions and perspectives on the session content and materials.

✓ What Participation Requires: You are being asked to take part in a pilot of the feedback session protocol. After we lead you through a mock feedback session, we will ask for your reactions to and perspectives on the session protocol and materials. During the pilot session, we will ask you questions on the value of session materials that are in development, and how they may be improved for future use with educators. All role play activities and discussions during the feedback session will be digitally audio recorded and then de-identified (i.e., all participant names removed from the audiofile). This single pilot feedback session will be scheduled to take place outside of instructional time. In total, participation in the pilot feedback session will take no more than approximately 1 hour for teacher participants during the 2017-18 school year.

✓ Confidentiality of Your Responses: This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study. You will receive no benefits by participating in this research study. Your privacy and research records will be kept confidential to the extent of the law. Authorized research personnel, employees of the Department of Health and Human Services, the USF Institutional Review Board and its staff, and other individuals acting on behalf of USF may inspect the records from this research project, but we will not share your individual responses with school system personnel or anyone other than us and our

Appendix L: Teacher Consent Form: Pilot Interviews (cont.)

research assistants. Your responses during interactions in which you provide verbal feedback on session materials will be audio recorded, and then assigned a code number to protect the confidentiality of your statements. Only we will have access to the locked file cabinet stored at USF that will contain all records linking code numbers to participants' names. All records from the study (e.g., transcribed interviews, audio files) will be destroyed in five years.

✓ Please Note: Your decision to participate in this research study must be completely voluntary. You are free to participate in this study or to withdraw at any time. Any decision to participate, not to participate, or to withdraw participation at any point during the study will in no way affect your relationship with your employer, USF, or any other party. You do not have to participate in this research study.

✓ What We'll Do With Your Responses: We plan to use educator reactions and perspectives to improve a feedback session aimed to increase agreement between teacher nominations and student self-report of perceived levels of stress and school satisfaction, and to increase agreement between teacher nominations and school records (e.g., grades). Results from data collected during this study may be published. However, the data obtained from you will be combined with data from other people in the publication. The published results will not include your name or any other information that would in any way personally identify you.

✓ Questions? If you have any questions about this research study, please contact us at (703) 963-0356 (Elizabeth Storey) or (813) 974-2223 (Dr. Suldo). If you have questions about your rights as a person who is taking part in a research study, you may contact a member of The Office of Research Integrity and Compliance at the University of South Florida at 813-974-5638, and refer to eIRB # 22787.

✓ To participate in this study, complete the consent form below (titled "Consent to Take Part in this Research Study"). Please keep the other copy of this consent form for your records.

Sincerely,

Shannon Suldo, Ph.D.   Elizabeth Storey, M.A.
Professor of School Psychology   Doctoral Candidate

Consent to Take Part in this Research Study

I freely give my permission to take part in this study. I understand that this is research. I have received a copy of this letter and consent form for my records.

_____   _____   _____
Signature of adult   Printed name of adult   Date

(Portion for USF to Complete): Statement of Person Obtaining Informed Consent
I certify that participants have been provided with an informed consent form that has been approved by the University of South Florida's Institutional Review Board and that explains the nature, demands, risks, and benefits involved in participating in this study. I further certify that a phone number has been provided in the event of additional questions.

_____   _____   _____
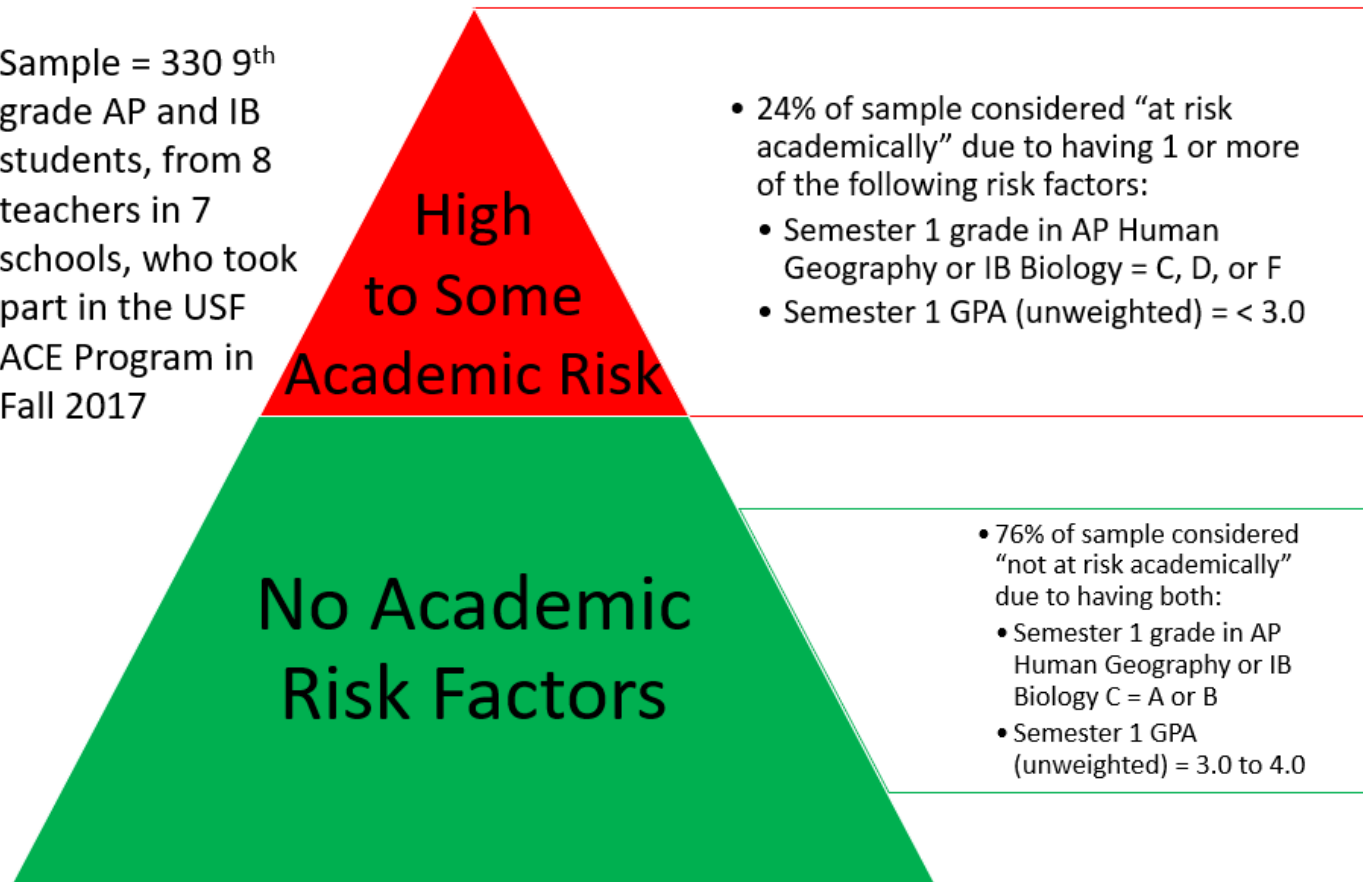Signature of person obtaining consent   Printed name of person obtaining consent   Date

USF

Appendix M: Pilot Study Interview Questions

Pilot Study Interview Questions

1. How comfortable were you throughout the feedback session?
2. Any challenges with the flow or clarity of the feedback session procedures?
3. Any words, phrases, terminology used in the feedback session that you felt were unclear, offensive, or should otherwise be avoided or changed?
4. Any changes to the layout of the MAP screening report you might recommend?
5. Any concerns with teachers maintaining students' privacy regarding their risk status?
6. Any other reactions, concerns, or comments?

Defining "Academic Risk"

Sample = 330 9th grade AP and IB students, from 8 teachers in 7 schools, who took part in the USF ACE Program in Fall 2017

High to Some Academic Risk

- 24% of sample considered "at risk academically" due to having 1 or more of the following risk factors:
  - Semester 1 grade in AP Human Geography or IB Biology = C, D, or F
  - Semester 1 GPA (unweighted) = < 3.0

No Academic Risk Factors

- 76% of sample considered "not at risk academically" due to having both:
  - Semester 1 grade in AP Human Geography or IB Biology C = A or B
  - Semester 1 GPA (unweighted) = 3.0 to 4.0

Defining "Emotional Risk"

Sample = 330 9th grade AP and IB students, from 8 teachers in 7 schools, who took part in the USF ACE Program in Fall 2017

High to Some Emotional Risk

No Emotional Risk Factors

- 29% of sample considered "at risk emotionally" due to reporting 1 or more of the following risk factors:
  - Elevated overall stress
  - Low school satisfaction

- 71% of sample considered "not at risk emotionally" due to having both:
  - Low to moderate stress
  - Moderate to high school satisfaction

241

Appendix O: Screening Instructions for Interventionists

Purpose: To gather information on student emotional well-being, we are asking 9th grade students taking AP/IB classes to complete this brief survey. Students' responses on this survey will help us determine who would benefit most from taking part in the Motivation, Assessment, and Planning (MAP) program.

Directions to students:
- Distribute the survey to the students and read aloud these instructions:
- *Hello! Today we will be asking you to take part of a brief survey which asks you about your current level of stress and satisfaction with school.*
- *At the top of your page, please print the name of your teacher and class period in clear writing.*
- *Please respond to the following questions honestly, keeping in mind that your responses are private. The only people who will see your overall scores (not what you said on individual items) are the ACE USF Research team and important educators and staff at school (including your teacher). We will use this information to identify students who will be offered an individual one-on-one coaching session to map your road to success in your AP/IB classes.*
- *If you have a question about any of the words in the items, please raise your hand and I will come help you. Please do not skip any items. If you do not want to take part in the survey, you do not need to complete any items, and a research team member will collect your blank survey.*
- *When you are finished answering all the questions you can raise your hand and I will come around to collect your paper.* (Check to make sure students, if they assented to the screening by beginning to complete the form, answered all 16 items, with only 1 response per item).

*Note:
DISTRICTS A AND B: Give the 1-page survey to all students except those whose parents (a) did not return the original consent form, or (b) opted out of the screening.
DISTRICT C: Give the 1-page survey to all students whose parents signed consent to take part in the screening.

Appendix O: Screening Instructions for Interventionists (cont.)

Directions to teachers IN DISTRICTS A AND B :
- Distribute the "Next Phase of the ACE Student Program" packet at the start of the class period.
- Class roster identification form
    - o While students are completing the screener, direct their attention to page 2 of the packet which includes instructions for how to complete the Educator Identification Form.
    - o *Please review the roster list of HALF OF 9th grade students in your AP/IB class who are eligible to take part in the screening (i.e., have parent consent to be in the larger USF research AND parents did not opt out of the screening). Identify students that, based on your knowledge of this student and his/her typical behavior, demonstrate academic or emotional challenges in AP/IB. Example student behaviors that may indicate academic and emotional risk are listed on page 2 of your packet.*
    - o *Check "yes" for students you feel fit the criteria for being at-risk for diminished success in AP/IB, either academically, emotionally, or both. Approximately 30% of AP/IB students had been identified as at-risk academically or emotionally in past years, thus we ask that you nominate at least 4 students within each category.*
    - o *If you do not know the student well enough to judge their academic and/or emotional challenges (e.g., recently enrolled student)- check the far right column. Try not to use that option frequently, its only there in case you have had few contacts with him or her.*
    - o Collect the class rosters; check to make sure the teacher checked one box for every student listed.
    - o Have teacher complete the Educator Identification Form for <u>each class period, at the same time students are completing the survey</u>.

Immediately enter data into Excel file for the school.

Appendix P: Educator Nomination Form

The Next Phase of the ACE Student Program:
Motivation, Assessment, and Planning (MAP) for AP/IB Student Success

- **Intervention Goal**: The Motivation, Assessment, and Planning (MAP) meetings are intended to help students reflect on and further develop healthy coping, engagement, and parenting practices that are linked to emotional and academic success in AP/IB courses.
- **Intended Student Population**: Students who, at mid-year, show or report signs of academic or emotional risk in AP/IB and thus may benefit from brief, individualized support to address academic or emotional challenges in AP/IB.
    - *Academic risk:* GPA < 3.0, grades of C or lower in AP/IB classes; scores < 3 (AP) or 4 (IB) on end-of-course exams
    - *Emotional risk:* elevated stress, negative feelings about schooling experiences
- **What the Intervention is NOT**: Long-term therapy; Crisis intervention; Mental health support to address issues beyond the ACE Program targets.
- **Eligibility Process:** The screening to identify students appropriate for MAP includes: student report of emotional health, review of academic records, and educator nomination.

Student self-report of emotional health includes:	Review of academic records includes:	Educator nomination involves:
• Ratings on brief surveys of stress and school satisfaction	• Grades in select AP/IB classes • Semester GPA • Other indicators suggested by the school (e.g., attendance)	• Teacher identifies students with academic or emotional difficulties who may benefit from further supports

- **MAP Intervention Process**:
    1. In the MAP pre-meeting, <u>students with parent permission</u> fill out a survey packet on their current coping strategies, school engagement, and perceived parenting practices.
    2. Next, an ACE coach (member of the USF team) enters each student's survey data into a computerized scoring system to compare his or her responses to a sample of 2000+ AP/IB students across the state of Florida.
    3. Then, students meet individually with a MAP coach for a 1-hour motivational session (MAP meeting) to decide on a target to increase for the student's success. Within the meeting, students describe their personal values, goals, and strengths, connecting the targets in the ACE Program to their future goals.
    4. Next, students review norm-referenced scores on their levels of coping, engagement, and parenting factors and collaboratively decide alongside the coach on a target for positive change.
    5. Finally, the student and ACE coach create an Action Plan to improve that target, and consider barriers and people to hold the student accountable to their plan. Students can elect to meet with the ACE coach at a later date to review progress with the plan, and/or select another target for improvement.

Appendix P: Education Nomination Form (cont.)

Educator Identification Form

The USF ACE Program is identifying AP/IB students with signs of academic or emotional risk. Those students will be offered additional supports intended to help them be successful in AP/IB.

Directions: Please review the attached roster list of HALF OF YOUR eligible 9th grade students in your AP/IB class. Then, identify which of students who, based on your knowledge of this student and his/her typical behavior, demonstrate academic or emotional challenges in AP/IB. Example student behaviors that may indicate academic or emotional risk are listed below. You may check "yes" for as few or as many students as you feel fit the criteria below for being at-risk for diminished success in AP/IB. Approximately 30% of AP/IB students had been identified as at-risk academically or emotionally in past years, thus we ask that you nominate *at least* 4 students within each category

Complete this form independently, without conversing with colleagues, by checking "yes," or circling the names, for the students who are demonstrating academic or emotional challenges. Thank you!

At-Risk for Diminished Success in AP/IB

Examples of Signs of Emotional Challenges in AP/IB	
Misses class (e.g., signs in and out of school, skips school, stays in bathroom during class)	Appears burnt out on schoolwork
Does not turn in assignments on time (may make frequent requests for extended time)	Seems unhappy during class (e.g., tearful)
Seems disinterested during class	Makes negative statements about AP/IB or school
Difficulty coping effectively with academic demands	Appears lonely or socially isolated (no friends in AP/IB)
Gives up or stops trying on schoolwork	Expresses extreme or frequent worry about performance on assignments or exams
Expresses frequent or extreme self-doubt about ability to achieve in AP/IB	Complains excessively about workload or particular assignments
Does not seem to take schoolwork seriously (e.g., plays around during class)	Does not show interest in joining or participating in extracurricular activities
Does not attend school activities, such as pep rallies, club meetings, sports events, theater performances, etc …	Other: _____
Examples of Signs of Academic Challenges in AP/IB	
Poor test, quiz, and exam grades	Substandard course grades (semester grades of C, D, or F)
Fails to turn in or complete assignments	Cheats or copies peers' classwork

Appendix P: Education Nomination Form (cont.)

Note. No names used in the table below are the names of children in the study.

	Student to Consider		At-Risk for ACADEMIC Challenges in AP/IB? *(check one column per student. Nominate at least 4 students)* Example symptoms: Misses class, seems unhappy, appears lonely or socially isolated			At-Risk for EMOTIONAL Challenges in AP/IB? *(check one column per student, Nominate at least 4 students)* Example symptoms: Poor test, quiz, exam grades, cheats, poor class grades		
Period	*Last Name*	*First Name*	*No*	*Yes*	*DK**	*No*	*Yes*	*DK**
Period 1	Suldo	Shannon	✓				✓	
	O'Brennan	Lindsey	✓			✓		
	Wang	Joy	✓			✓		
	Moseley	Amanda			✓			✓
	Shaunessy	Elizabeth	✓				✓	
	Doe	John		✓			✓	
Period 2	Storey	Elizabeth		✓			✓	
	Shum	Kai	✓			✓		
	Shakir	Amarah	✓			✓		
	Aguirre	Melissa		✓		✓		
	Wingate	Emily	✓			✓		
	Doe	Jane		✓		✓		

*DK = Do not know student well enough to judge (new to class, etc.)

Appendix Q: MAP Screening Report: Students Identified

MAP Screening Report: Students Identified

Note. No names used in this report are the names of children in the study.

<div align="center">

CONFIDENTIAL INFORMATION
Motivation Assessment Planning (MAP) Screening, AP/IB Program Report

</div>

Name: Mr. Real   **School**: Sunshine High School (AP)
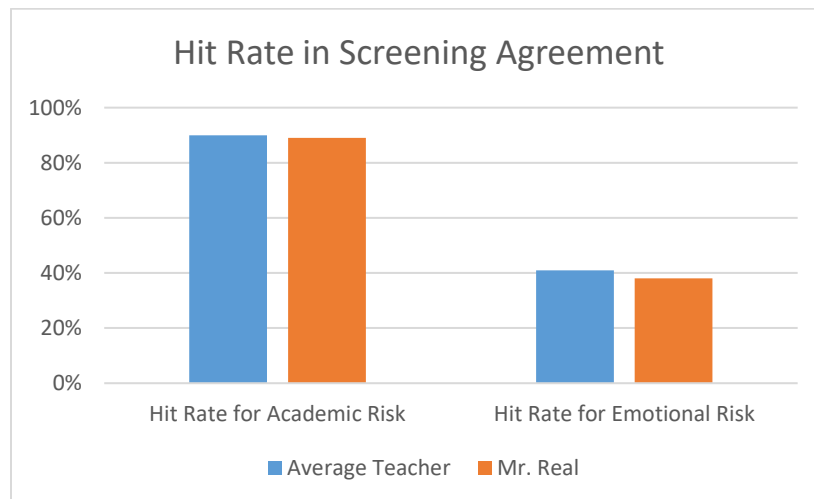**Date**: 2/7/2018   **ACE Team Member**: Elizabeth Storey

Agenda for Meeting:
   A. Introduction
   B. Purpose of Meeting/Prevalence Rates
   C. Strengths and Areas for Focus in Screening Performance
   D. Review Screening Process/Time for Questions
   E. Complete Screening Phase II and Feedback Forms

<div align="center">

Prevalence Rates in Screening

</div>

Prevalence Rates for Academic Risk
- Across 8 AP/IB programs (330 students, 8 teachers), **24%** of students were at-risk academically   16% of students were at-risk due to semester GPA   22% of students were at-risk due to course grade   14% of students were at-risk due to BOTH course grade <u>and</u> semester GPA   - For students in half of Mr. Real's classes (Periods 4 and 6; 29 students total), 9 students **(31%)** were at-risk academically   0 students were at-risk due to semester GPA   1 students were at-risk due to course grade   8 students were at-risk due to course grade <u>and</u> semester GPA

Prevalence Rates for Emotional Risk
- Across 2 AP/IB programs (330 students, 8 teachers), **29%** of students were at-risk emotionally   21% students were at-risk due to high perceived stress   15% students were at-risk due to low school satisfaction   7% students were at-risk due to low school satisfaction <u>and</u> high perceived stress   - For students in half of Mr. Real's classes (Periods 4 and 6; 29 students total), 16 students **(55%)** were at-risk emotionally   11 students were at-risk due to high perceived stress   1 student was at-risk due to low school satisfaction   4 students were at-risk due to low school satisfaction and high perceived stress

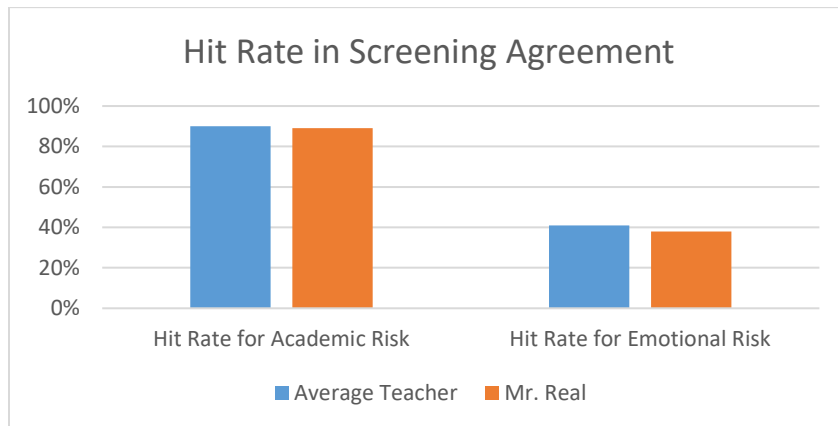| Prevalence Rates for Academic and Emotional Risk |
| --- |
| Across 2 AP/IB programs (330 students, 8 teachers), **12%** of students were at-risk emotionally AND academically based on student survey responses and report card data For students in half of Mr. Real's classes (Periods 4 and 6; 29 students total), 6 students **(21%)** were at-risk emotionally AND academically based on student survey responses and report card data |

Strengths in Screening Agreement

Students Identified for Academic Risk
• Average hit rate (across 6 AP/IB teachers) for students with academic risk: **90%**
• Mr. Real's hit rate for academic risk: **89%**

• Out of the total of 9 students who was at-risk academically per report card data, Mr. Real correctly identified 8 <u>students</u>:
    o Elizabeth Storey
    o Lindsey O'Brennan
    o Shannon Suldo
    o John Ferron
    o Camille Hanks
    o Amanda Moseley
    o Kai Shum
    o Hannah Gilfix

Students Identified for Emotional Risk
• Average hit rate (across 6 AP/IB teachers) for students with emotional risk: **41%**
• Mr. Real's hit rate for emotional risk: **38%**

• Out of the total of 16 students who were at-risk emotionally per their survey responses, Mr. Real correctly identified 6 <u>students</u>:
    o Elizabeth Storey
    o Kai Shum
    o Melissa Aguirre
    o Amarah Shakir
    o Emily Wingate
    o Shannon Suldo

Hit Rate in Screening Agreement

Areas for Focus in Screening Agreement

Students with Academic Risk who were Missed
• Average miss rate (across 6 AP/IB teachers) for students with academic risk: **10%**
• Mr. Real's miss rate for academic risk: **11%**
• Out of the total of 9 student(s) who was at-risk academically per report card data, Mr. Real missed 1 student: o Natalie Romer

Students Misidentified *(GPA ≥ 3.0 and IB Biology is A or B, but identified at "at-risk" academically by Mr. Real)*
• Linda Raffaele Mendez
• Melissa Aguirre
• Amarah Shakir

Students with Emotional Risk who were Missed
• Average miss rate (across 6 AP/IB teachers) for students with emotional risk: **59%**
• Mr. Real's miss rate for emotional risk: **63%**

• Out of the total of 16 students who were at-risk emotionally per their survey responses, Mr. Real missed 10 students:
      o Lindsey O'Brennan
      o Linda Raffaele Mendez
      o John Ferron
      o Bob Dedrick
      o Camille Hanks
      o Amanda Moseley
      o Hannah Gilfix
      o Jane Doe
      o John Doe
      o Jon Lee

Students Misidentified *(Did not report elevated stress or low school satisfaction, but identified at "at-risk" emotionally by Mr. Real)*
• Jose Castillo
• George Batsche

Appendix R: MAP Screening Report: Students De-Identified

Motivation Assessment Planning (MAP) Screening, AP/IB Program Report

Name: Mr. Real   **School**: Sunshine High School (AP)
Date: 2/7/2018   **ACE Team Member**: Elizabeth Storey

Agenda for Meeting:
  A. Introduction
  B. Purpose of Meeting/Prevalence Rates
  C. Strengths and Areas for Focus in Screening Performance
  D. Review Screening Process/Time for Questions
  E. Complete Screening Phase II and Feedback Forms

<div align="center">Prevalence Rates in Screening</div>

Prevalence Rates for Academic Risk
- Across 8 AP/IB programs (330 students, 8 teachers), <u>**24%**</u> of students were at-risk academically   16% of students were at-risk due to semester GPA   22% of students were at-risk due to course grade   14% of students were at-risk due to BOTH course grade <u>and</u> semester GPA   - For students in half of Mr. Real's classes (Periods 4 and 6; 29 students total), 9 students **(31%)** were at-risk academically   0 students were at-risk due to semester GPA   1 students were at-risk due to course grade   8 students were at-risk due to course grade <u>and</u> semester GPA

Prevalence Rates for Emotional Risk
- Across 2 AP/IB programs (330 students, 8 teachers), <u>**29%**</u> of students were at-risk emotionally   21% students were at-risk due to high perceived stress   15% students were at-risk due to low school satisfaction   7% students were at-risk due to low school satisfaction <u>and</u> high perceived stress   - For students in half of Mr. Real's classes (Periods 4 and 6; 29 students total), 16 students **(55%)** were at-risk emotionally   11 students were at-risk due to high perceived stress   1 student was at-risk due to low school satisfaction   4 students were at-risk due to low school satisfaction and high perceived stress

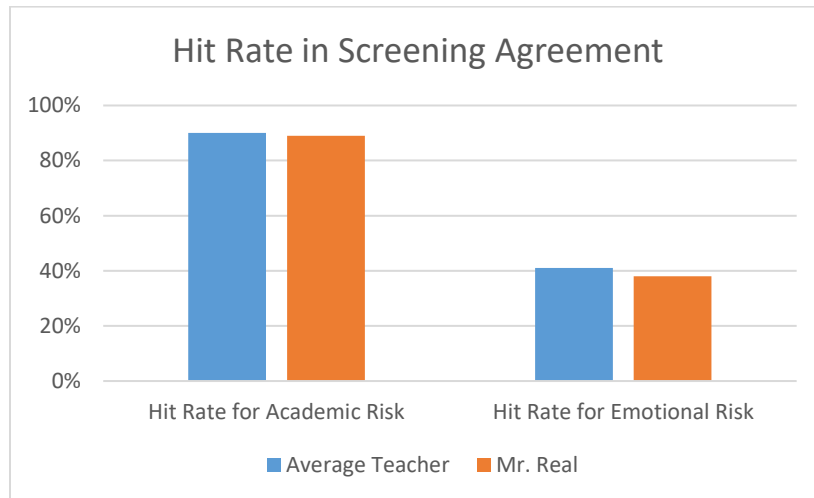| Prevalence Rates for Academic and Emotional Risk |
| --- |
| Across 2 AP/IB programs (330 students, 8 teachers), <u>**12%**</u> of students were at-risk emotionally AND academically based on student survey responses and report card data For students in half of Mr. Real's classes (Periods 4 and 6; 29 students total), 6 students **(21%)** were at-risk emotionally AND academically based on student survey responses and report card data |

Appendix R: MAP Screening Report: Students De-Identified (cont.)

Strengths in Screening Agreement

Students Identified for Academic Risk
• Average hit rate (across 6 AP/IB teachers) for students with academic risk: **90%**
• Mr. Real's hit rate for academic risk: **89%**
• Out of the total of 9 students who was at-risk academically per report card data, Mr. Real correctly identified 8 students

Students Identified for Emotional Risk
• Average hit rate (across 6 AP/IB teachers) for students with emotional risk: **41%**
• Mr. Real's hit rate for emotional risk: **38%**
• Out of the total of 16 students who were at-risk emotionally per their survey responses, Mr. Real correctly identified 6 students

Appendix R: MAP Screening Report: Students De-Identified (cont.)

Areas for Focus in Screening Agreement

| **Students with Academic Risk who were Missed** |
| --- |
| • Average miss rate (across 6 AP/IB teachers) for students with academic risk: **10%** |
| • Mr. Real's miss rate for academic risk: **11%** |
| • Out of the total of 9 student(s) who was at-risk academically per report card data, Mr. Real missed 1 student |
| **Students Misidentified** *(GPA ≥ 3.0 and IB Biology is A or B, but identified at "at-risk" academically by Mr. Real)* |
| • 3 students |

Students with Emotional Risk who were Missed
• Average miss rate (across 6 AP/IB teachers) for students with emotional risk: **59%**
• Mr. Real's miss rate for emotional risk: **63%**
• Out of the total of 16 students who were at-risk emotionally per their survey responses, Mr. Real missed 10 students
Students Misidentified *(Did not report elevated stress or low school satisfaction, but identified at "at-risk" emotionally by Mr. Real)*
• 2 students
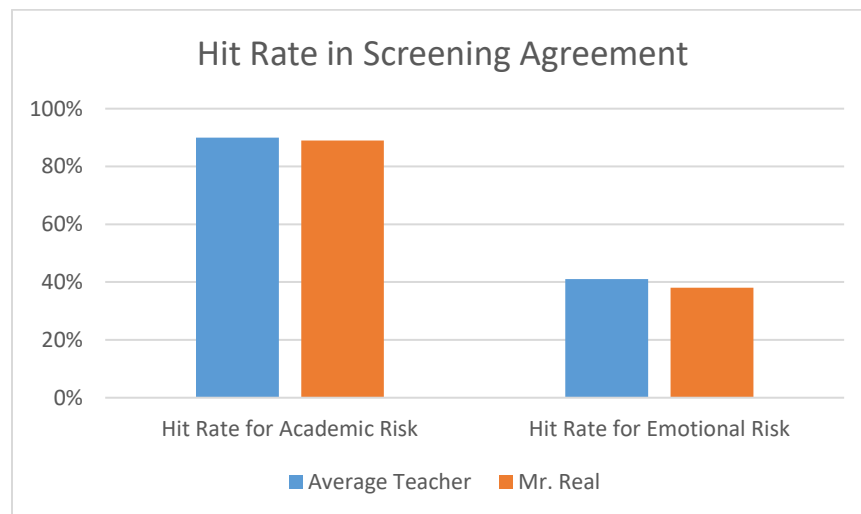
Appendix S: MAP Screening Teacher Intervention Protocol

**Motivation Assessment Planning (MAP) Screening
Teacher Feedback Session Guide**

Session Goals:
- Share with teachers the importance of including teachers in screening process and the prevalence of students at-risk emotionally and/or academically in their classes and in a large sample of AP/IB 9th grade students
- Provide teachers feedback on agreement between their identification of students at-risk and students' risk status emotionally and academically (Hit Rate), discuss patterns across students
- Provide teachers feedback on misses when identifying students at-risk emotionally and academically (Miss Rate), discuss patterns across students
- Review teacher identification form and offer teachers opportunity to ask questions as needed
- Provide teachers time to complete teacher identification forms for Screening Phase II

Materials Needed:
- MAP Screening Teacher Feedback Session Guide
- MAP Screening Score Report for Teacher (IN COLOR; 2 versions, De-Identified and Identified) Copy of Student Risk Prevalence Graphic (IN COLOR)
- Copy of blank student screening measures (PSS and SS)
- Teacher identification forms for Screening Phase II
- Teacher feedback forms (Treatment Acceptability Form)
- Consent form
- Gift card (If teacher is in DISTRICT A)
- Gift card documentation forms (If teacher is in DISTRICT A)

Agenda:
A. Introduction
B. Purpose of Meeting/Prevalence Rates
C. Strengths and Areas for Focus in Screening Agreement
D. Review Screening Process/Time for Questions
E. Complete Screening Phase II and Feedback Forms

Session Protocol:

A. Introduction (2-3 minutes)

a. Introduce self if needed; review purpose of meeting
  i. Sample script: *Hello, my name is Elizabeth Storey and I am a member of the ACE Team from USF. The purpose of this meeting today is to discuss the identification form you filled out a week or so ago to help identify which of the students in your class are at emotional or academic risk who may benefit from extra supports (specifically, the MAP meetings),*

when only considering half of your students. As you may remember, when you completed these forms we also asked students how they felt in terms of their stress and feelings of happiness at school. We also gathered information from their course and school grades. Before this meeting, we entered all of the data from student ratings, school records, and your identification form. We have some results to share on how many students you identified as at risk emotionally or academically also appeared that way according to students' survey responses and report cards, and more.

b. Thank teachers for participation in Screening Phase 1; Validate teachers' consistent efforts in promoting academic and emotional success in students

    i. <u>Sample script:</u> *First, thank you so much for completing the 'teacher identification form' when our research team gathered the other screening data last week! Although I was not working in your classroom on a weekly basis, I always heard such positive examples from Dr./Ms. XXX who you worked with as part of the ACE Program; she spoke so highly of your amazing connections with your students and commitment to supporting students not only in their coursework, but also as well-rounded and adjusted individuals.*

    ii. *I understand you probably have a lot on your plate as a teacher, and probably outside of the school building as well, and although you already gracefully balance and wear many hats as a teacher, completing forms asking you to identify students with emotional and academic problems may be something you are not as familiar with. I am not here today to grade or judge your performance in the agreement between your identifications of students as at-risk who also emerged as at-risk through another data source, but to review your strengths and maybe some areas to focus on in the next screening round which will also take place today.*

    iii. *As a teacher, you have unique and special insight that others probably do not have into how your students are doing, emotionally and academically. Teachers interact with students the most of any other adult in the school building! That's why we are meeting briefly today to support you through this process, to best identify students at-risk in order to give them the opportunity to receive extra supports.*

c. Review agenda

    i. <u>Sample script:</u> *Here is a brief review of what we will cover in this meeting.* [Refer to agenda on score report] *I will first review why we are conducting this screening, and then share the current prevalence of students with signs of risk in your classes as well as across all 8 AP and IB programs that took part in our recent ACE screening.*

    ii. *Next, we will turn to the agreement between the identification form you completed last week and student self-report and school records, reviewing your strengths and then some potential areas for focus to increase that agreement when you complete the next identification form.*

    iii. *Then, we will review the screening process and give you some time to ask any questions you may have.*

    iv. *Finally, we will give you time to complete the final screening phase and some other forms asking you for some feedback on how this meeting went.*

    v. *As we proceed, we will follow along together with this score report I will give you a copy of to hold onto. We will review this report* [Refer to report with class-specific information] *during our session, but this will not be left with you as it contains identifiable student information. What you will be able to take with you at the end of this session is this report* [Refer to report with prevalence rates obtaining in recent screening, which reflects

254

compiled data and does not contain identifiable student information] *without student names.* [Refer to score reports, but discourage teachers from going through their accuracy data before reviewed together in feedback sessions]

    vi. Ask: *As I go through this information, there probably will be some new concepts and terms you are unfamiliar with, particularly within the student survey data. Please feel free to stop me at any time to ask me anything!* ***Do you have any questions now before we begin?***

    vii. Introduce recording device: *I am recording our discussion because your participation today is part of a research project and members of the research team will review the audio file to make sure I'm doing a good job. The file will not be shared with anyone at your school, and my research team will destroy it as soon as our project is complete.* ***Do you have any questions or concerns with this?***

B. Purpose of Meeting/Prevalence Rates (3-5 minutes)

a. Review the importance of teacher involvement in a multi-informant screening procedure to identify students at-risk academically and emotionally

    i. Sample script: *When we asked you to participate in the mid-year screening, you may have asked yourself why we were asking you to help us identify students at-risk academically or emotionally. Research has found that teachers are important pieces of the puzzle in supporting students' emotional and academic wellness at school.*

    ii. *We are still exploring as a research team what the best method is to identify which students would benefit from extra support (MAP). For example, we don't know if we need all students to self-report their wellness in AP/IB or if we can just ask you as teachers which students are most important to connect to further supports. We're exploring that by examining the agreement between teacher reports of which student are "at risk" and "at risk" status as determined by student report and report cards. We use school records to identify students at-risk academically, and student self-report to determine students at-risk emotionally.*

b. Review current 'gold standard' of accuracy in screening adolescents with emotional risk (student self-report)

    i. *What we do know right now when looking at our 'gold standard' of identifying adolescents with emotional concerns, large research studies of how to best identify students with emotional problems have found that student self-report of feelings and perhaps emotional distress is our best way of findings these students.*

    ii. *We realize that asking students about their well-being is subject to some error; if a student is having a particularly difficult or great day, or if they are distrustful of how their ratings will be used, they may not answer truthfully about their typical feelings and emotional status. But, the field of psychology has established that asking students directly about how they feel is currently considered the best way to identify those showing signs of emotional problems.*

    iii. Interventionist Note: This data comes from research on best practices in identifying adolescents with emotional concerns (Kamphaus et al., 2010)

c. Review screening process for students, teachers, and obtaining school records

    i. Ask: ***What is your understanding of how students are identified for participation in the MAP intervention?***

    ii. Sample script, depending on teacher knowledge

1. Low teacher knowledge of screening process: *The screening process we are conducting in these few weeks includes information from teachers, students, and school records. First, we asked our teachers to indicate students who you believe to be at-risk for academic or emotional challenges in AP/IB.*

a. *We also came to your classroom and asked students themselves to complete short measures that asked students about their stress levels and how happy they felt in school.* [If teacher is interested, direct them to blank copy of the student screening measures]

b. *Finally, we obtained students' grades in either their IB Biology class or AP Human Geography, and their unweighted GPA from first semester, from school records with the help of your Assistant Principal.*

2. High teacher knowledge of screening process: *That is correct! We took a combination of your identifications, student rating scales, and school records to identify students for the MAP intervention.*

iii. Ask: ***Do you have any questions about the general MAP screening process?***

1. *At the end of our time today, we will review your identification forms again; you can let me know if you have any specific questions on the form you completed last week and will complete again today.*

d. Review prevalence rates for academic and emotional risk, both within the teacher's class and across all participating AP/IB schools

1. Sample script: *In the past week, we've entered and scored the data from students' surveys and report cards. Now we will share how many students we found at-risk across all 8 AP/IB programs participating in the ACE and MAP programs this year, and then focus on prevalence of risk in your classes, within the roster of students you considered for identification.*

ii. Review prevalence data from score report, and the definition of emotional and academic "at-risk" status as operationalized in this project.

1. Sample script: *First we will look at the prevalence of students who met the ACE team's definition of "academic risk" across all classes participating in the ACE and MAP programs, and the prevalence of academic risk in* your class. *We defined 'At-Risk' as having a C or lower in AP Human Geography or IB Biology or having less than a 3.0 overall unweighted GPA.* [Pull out Student Risk Prevalence Graph]

2. *Across a large number of AP/IB 9ᵗʰ grade students, we found that 24% of students were at-risk academically, labeled as such because their course grade was below a C in the fall or their unweighted fall semester GPA was below a 3.0.*

3. *You can see the percentage of students that did not meet criteria for any academic risk factors* [Refer to Prevalence Graphic], *and the percentage of students that are at-risk. As part of the ACE and MAP programs, we want to identify students that are showing any signs of risk in their AP/IB classes early on in their high school careers and connect them to supports such as the MAP intervention. Therefore, a student we label "at-risk" may be a few points below a C in your class, or a student at-risk may have an F in your class. We group all of these students as simply "at-risk" for the purposes of our project, but acknowledge they have different levels of risk in reality.*

4. Review prevalence of risk for academic risk for teacher's class

5. Interventionist Note: If teacher has low numbers of students at-risk academically in his/her classes: *Something important to note here is that there aren't a lot of your students who were found at-risk academically due to their GPA and course grade in*

the fall. While this is great news in terms of your students' health, this is important to keep in mind when we turn to the agreement between your identifications and student academic risk because of the low base rate of academic risk at your school.

    iii.   Transition into prevalence of risk for emotional risk

        1. <u>Sample script</u>: *How we defined 'At-Risk' emotionally is based on a student's score meeting a criteria that indicates the student had an elevated stress level or the student didn't feel very connected to and happy with their school experience.*

        2. *Again, you can see the percentage of students that are not at-risk emotionally* [Refer to other side of Prevalence Graphic], *and the students that did not report any emotional risk factors. Every student who is at-risk either emotionally or academically may have more or less severe levels of risk, but we make it into a yes or no category to identify* <u>any</u> *students who may benefit from MAP.*

        3. <u>Interventionist Note</u>: If teacher has low numbers of students at-risk emotionally in his/her classes, be sure to point this out using script above.

    iv.   Give opportunity for teacher to ask questions about the prevalence rates of emotional and academic risk across all classes and across the teacher's classes

        1. <u>**Ask:**</u> ***Any questions about the number of students that were found at risk, across all students participating in the ACE program in the fall and in your classes?***

        2. <u>**Ask:**</u> ***After reviewing how many students both in your class and across classes in 8 AP/IB programs are in the at-risk range, how might this affect your identifications today, if at all?***

        3. <u>Sample script:</u> *Great insight! We are providing this prevalence data today not to overwhelm you with statistics and numbers, but to give you some ideas on how many students might be at-risk in your class and perhaps how many students you might aim to identify as at-risk emotionally and/or academically (if we assume that you could pick-up on all students with emotional or academic problems).*

C. Strengths and Areas for Focus in Screening Performance (10-15 minutes)

  a. Review teacher's strengths in screening performance (hit rate)

    i. <u>Sample script:</u> *Now that we have your identifications for the first half of your class, all of your students' data from the measures they completed, and their grades, we can turn to how many students you identified at-risk academically and emotionally were also the students who had signs of academic or emotional risk based on student ratings and school records.*

    ii. *We also have data from across all AP/IB classes, teachers' average hit rate of identifying students who report emotional risk or whose report cards indicate academic risk. We will note which students who you identified at-risk academically or emotionally whose other data also indicated were at-risk.*

  b. Remind teacher of their role with supporting at-risk students, including maintaining confidentiality of their risk status

    i. *Although we know you would not violate these students' confidentiality, we thank you in advance for keeping the names of these students' private. Of course, Ms.* (assistant principal) *and Ms.* (school mental health provider) *have this same list since this is a service project we are providing to your school… your school mental health team is using the data to keep the students with signs of challenges on your team radar, and the USF team will be offering the students who emerged in the screening with extra support through the MAP*

program. At this point, we are not charging you with "fixing" the students we identified as "at-risk"; actually, the MAP coaches have that as their goal!

    ii. <u>Interventionist Note:</u> Throughout the feedback session, if teacher is curious, have handy the MAP Screening Score Report (Interventionist Version) to let teachers know about the students they "misidentified" for academic/emotional risk given that the student did not have a positive risk status.

        1. <u>Sample script:</u> *While it might seem like you only identified girls in your class, I have some extra data that shows what students you identified as having academic and/or emotional risk, but they either were found to have no risk, or a different risk type. If it would be helpful for you to look at patterns across your student identifications, we can review that data at some point.*

e. Review teacher's rate of correctly identified students for academic risk, average rates across 6 AP/IB teachers of correctly identified students for academic risk, and students correctly identified at-risk academically

    i. <u>Sample script:</u> *Again, we defined 'At-Risk' as having a C or lower in AP Human Geography or IB Biology or having less than a 3.0 overall unweighted GPA.*

    ii. *We have here the agreement across all 6 AP/IB teachers in our high schools that are completing identifications, with the average teacher hit rate in identifying students with academic risk per report cards.*

    iii. *In your classes, of the students that were eligible for you to "check" last week (half of your classes), you correctly identified 5 out of the 7 students that were at academic risk, which means your hit rate was 71%.*

    iv. *Let's consider the students you identified as at-risk academically who were also found at-risk due to grades on their first semester report cards.*

f. Review teacher's rate of correctly identified students for emotional risk, average rates across 6 AP/IB teachers of correctly identified students for emotional risk, and students correctly identified at-risk emotionally

    i. <u>Sample script:</u> *How we defined 'At-Risk' emotionally is based on a student's score meeting a criteria that indicates the student had an elevated stress level or the student didn't feel very connected to and happy with their school experience.*

    ii. *Across all 6 AP/IB teachers, the average agreement between identifying students with emotional risk and students also self-reporting this emotional risk was 41%.*

    iii. *Now, we will look at how many students <u>you</u> indicated were at-risk for emotional challenges in AP/IB. Of the students that were eligible for you to identify last week (half of your classes), you identified X out of a total of X students who also self-reported at risk emotionally, which means your agreement with students who also self-reported emotional risk was X%.*

    iv. *Let's consider the students you identified as at-risk emotionally who were also found at-risk due to their ratings of stress and connectedness.*

g. **<u>Ask:</u>** ***What surprised you, if anything, on your rate of agreement with the students' ratings of emotional status or their actual grades?***

h. Review potential areas for focus in screening performance (miss rate)

i. <u>Sample script:</u> *As we turn to potential areas for focus in the next screening, I want to remind you that this is not an evaluation on your performance as a professional or teacher, and no one (except USF research team members reviewing my performance working with others) will have access to your individual data identifying students. We acknowledge that*

identifying which students in your class are at-risk is very difficult task, and that is why we are focusing on celebrating your involvement in the process and any catches- either in the academic or emotional domain- and supporting through any changes you may want to make when you complete the identification process for the second half of your students. Review average miss rates across 6 AP/IB teachers of at-risk academically and emotionally and teacher's miss rate of students for academic and emotional risk

    i. <u>Sample script:</u> *First we will look at across the 6 teachers who participated in the MAP screening, what was the average rate of mismatch between students' whose grades or GPA placed them as at-risk but were not identified by teachers. The average teacher had a miss-rate of 10%.*

    ii. *Let's turn to how many students with school records of academic risk did not match with your identifications of which students may be at-risk academically in AP/IB. Because you caught X out of the X students that were at academic risk per report cards, this means X students were missed out of a total of X who were at risk, which is a miss rate of X%. The average teacher had a miss-rate of 10%.*

    iii. *Let's consider the academically at-risk students in your class that were missed in the identification process.*

    iv. *Here we have some names of students who you reported as at-risk academically, but school records showed the students had a GPA of a 3.0 or above and had a B or A in IB Biology/AP Human Geography.*

    v. <u>Ask:</u> *What patterns, if any, do you notice across students you may have missed academically in terms of the grades on their report card being perhaps lower than you guessed, or misidentified as having academic risk?*

    vi. <u>Ask:</u> *How might that affect your identifications in the future?*

        1. Respond with reflections that direct attention to teachers' insights

j.   Review average rates across 6 AP/IB teachers of nonagreeances between teacher identifications and students at-risk emotionally, teacher's miss rate of students at-risk emotionally, and students who self-reported emotional risk who was not identified by the teacher as such

    i. <u>Sample script:</u> *The average teacher had a miss rate of 59%. Let's consider the 5 students missed in your classes. We frequently see that teachers tend to have higher rates of identifying students at academic risk than emotional risk, which makes sense considering you have regular data on your students' academic progress and likely fewer opportunities to monitor how stressed or happy they feel in school! Next we will look at which students' self-report of emotional status did not match with your identifications of which students may be at-risk emotionally in AP/IB.*

    ii. *Because you identified X out of the X students whose own ratings of stress and happiness at school indicated were at emotional risk, this means X students out of a total of X who were at risk were not identify, which is a miss rate of X%.*

    iii. *Let's consider the students in your class who reported signs of emotional challenge that were missed in the identification process.*

    iv. *Here we have some names of students who you reported as at-risk emotionally, but the students did not rate themselves as being particularly stressed or being dissatisfied at school.*

k.   <u>Ask:</u> *What patterns, if any, do you notice across students you may have missed as having signs of emotional problems, or misidentified as having emotional risk?*<u>Ask</u>: *Now that we*

have reviewed prevalence of emotional and behavior problems in AP/IB, and which students were missed through teacher identification in the first round of screening, is there anything that surprised you?

l. Ask: *After reviewing all of the data we discussed today, your strengths, and areas for focus, what if anything would do differently (or keep the same) in the next round of identifications today?*

    1. Respond with reflections that direct attention to teachers' insights

D. Review Screening Process/Time for Questions (3-5 minutes)

a. Review the educator identification forms briefly, in case teacher has questions

  ii. Sample Script: *Now that we have reviewed the prevalence of the students who are at-risk for diminished success in AP/IB, and how many students you identified as at-risk academically or emotionally, we wanted to briefly review the screening process in case there was some clarification issues we could clear up today.* [Refer to the blank Education Identification Form the teacher will fill out at the end of the session]

    1. *The first page of this packet includes directions on how to identify eligible students in your class who you believe to be at-risk emotionally and/or academically. The directions include example student behaviors that may indicate a student is at emotional risk (e.g., seems unhappy; appears lonely or socially isolated; gives up easily) or at academic risk (e.g., poor test, quiz, exam grades; cheats; poor class grades).*

    2. *The back of that page includes a sample completed roster list of students in an AP/IB class to give you a picture of how a completed identification list might look. As illustrated in this example, you will check "Yes," "No," or "DK (Don't Know)" for both the emotional risk column and academic risk column.*

    3. *The next page is a roster of the other HALF of the 9th grade students in your AP/IB class who are eligible to take part in the screening* [Make sure teachers ONLY receive the Time 1 class roster]. *I'll explain when you'll identify the second half of students in a moment. Students who do not have parent consent to be in the larger USF research are NOT on this list. As you review this roster identify students that, based on your knowledge of this student and his/her typical behavior, show emotional or academic challenges in AP/IB. Feel free to have the list of example student behaviors (page 2) next to your roster list to help you.*

    4. *Check "yes" for students you feel fit the criteria for being at-risk for diminished success in AP/IB, either emotionally, academically, or both.*

  iii. Ask: *Do you have any questions on the example signs of emotional and academic risk?*

  iv. Ask: *What questions do you have on the teacher identification forms?*

E. Complete Screening Phase II and Feedback Forms (Teacher dependent, 7-10 minutes)

a. Give teacher time to complete screening form for second half of classes

  v. Sample script: *Please complete the identification form. You will see that you have a roster list for each participating AP/IB class that contains the names of the second half of your classes. If you have any questions I will be here while you complete the forms.*

m. Give teacher time to complete short feedback forms

  i. Sample script: *As the ACE Program is part of a research project we are always trying to evaluate and improve the program. At this time we would like you to fill out a short*

feedback form on your experience today. Please do not hesitate to share your honest feedback on how we can improve this feedback session for any future teachers who may participate! Thank you again for your time.

Distribute gift cards and complete gift card documentation forms, if applicable for district.

Reference

Kamphaus, R. E., DiStefano, C., Dowdy, E., Eklund, K., & Dunn, A. R. (2010). Determining the presence of a problem: Comparing two approaches for detecting youth behavioral risk. *School Psychology Review, 39*, 395-407.

Appendix T: MAP Teacher Feedback Session Fidelity Checklist

MAP Coach: ES   **Location**:_____

Fidelity Coder:_____   **Teacher Initials**:_____   **Date**: _____

Item No.	Key Elements in Session	Content Covered? Y/N		Change, Omission, or Addition? Y/N		Comments
A. INTRODUCTION (Approx. 2-3 minutes) Start Time:_____; End Time: _____						
1.	Introduction to interventionist	Y	N	Y	N	
2.	Validate teachers' efforts in promoting academic and emotional success in students.	Y	N	Y	N	
3.	Review meeting agenda	Y	N	Y	N	
4.	Acknowledge meeting is being audio recorded.	Y	N	Y	N	
B. PURPOSE OF MEETING/PREVALENCE RATES (Approx. 3-5 minutes) Start Time:_____; End Time: _____						
5.	Review purpose of teacher involvement in screening.	Y	N	Y	N	
6.	Note student self-report is current 'gold standard' of accuracy in screening adolescents with emotional risk	Y	N	Y	N	
7.	Review multi-informant screening process (data from students, teachers, and school records) used to examine AP/IB student success mid-year	Y	N	Y	N	
8.	Review prevalence rates for academic risk both within the teacher's class and across all participating AP/IB schools	Y	N	Y	N	
9.	Review prevalence rates for emotional risk both within the teacher's class and across all participating AP/IB schools	Y	N	Y	N	
10.	Ask teacher how reviewing prevalence rates might affect a teacher's future nominations	Y	N	Y	N	
C. STRENGTHS AND AREAS FOR FOCUS IN SCREENING (Approx. 10-15 minutes) Start Time:_____; End Time: _____						
11.	Remind teacher of the importance of keeping	Y	N	Y	N	

262

		Y	N	Y	N	
	students' names and risk status confidential					
12.	Review teacher's rate of agreement between teacher nomination and school records for students at-risk *academically*	Y	N	Y	N	
13.	Review teacher's rate of agreement between teacher nomination and student self-report for students at-risk *emotionally*	Y	N	Y	N	
14.	Review students missed for academic risk	Y	N	Y	N	
15.	Review students misidentified for academic risk	Y	N	Y	N	
16.	Teacher prompted to examine patterns in students missed and/or misidentified for *academic* risk, and how this may affect their nominations in the future	Y	N	Y	N	
17.	Review students missed for emotional risk	Y	N	Y	N	
18.	Review students misidentified for emotional risk	Y	N	Y	N	
19.	Teacher prompted to examine patterns in students missed and/or misidentified for *emotional* risk, and how this may affect their nominations in the future	Y	N	Y	N	
D. REVIEW SCREENING PROCESS (Approx. 3-5 minutes) Start Time:_____; End Time: _____						
20.	Review instructions educator identification forms briefly, in case teacher has questions	Y	N	Y	N	
21.	Ask if teacher has any questions regarding the nomination task, such as questions about symptoms of academic and emotional risk, how to complete the educator identification form	Y	N	Y	N	
E. COMPLETE SCREENING PHASE II AND FEEDBACK FORMS (Approx. 7-10 minutes) Start Time:_____; End Time: _____						
22.	Teacher completes screening form for second half of roster of students in classes	Y	N	Y	N	
23.	Teacher completes short feedback forms	Y	N	Y	N	
24.	Distribute gift cards and complete gift card documentation forms, if applicable for district	Y	N	Y	N	

Appendix U: Social/Behavioral Investigators and Key Personnel Refresher Course

Certificate of Completion

Elizabeth Storey

Completed the Social / Behavioral Investigators and Key Personnel
Refresher Course

on Sunday, June 19, 2016

USF
UNIVERSITY OF
SOUTH FLORIDA

CITI Certificate ID#: 47047

Appendix V: IRB Amendment Approval

1/18/2018

Shannon Suldo, Ph.D.
Educational and Psychological Studies
4202 East Fowler Ave., EDU 105
Tampa, FL 33620

RE: **Expedited Approval of Amendment**

IRB#: Ame13_Pro00022787

Title: Facilitating Academic Success and Emotional Well-Being Among High School Students in Accelerated
Curricula

Dear Dr. Suldo:

On 1/17/2018, the Institutional Review Board (IRB) reviewed and **APPROVED** your Amendment. The
submitted request and all documents contained within have been approved, including those outlined below, as
described by the study team.

In an earlier stage of this project, in line with stated research objectives, they examined the accuracy of teacher
nominations during a mid-year screening process to identify students with signs of academic and emotional
challenges. In analyzing that data, they learned that teachers were reasonably effective at identifying students
with academic risk, but were not able to identify a majority of students that self-reported signs of emotional
risk. In an effort to improve the accuracy of teacher nominations, they have developed a brief intervention that
they seek permission to evaluate. The purpose of this amendment is to describe the procedures to pilot and
evaluate the teacher feedback intervention, upload the interview protocol that guides the performance feedback
sessions as well as the related measures (teacher demographic, fidelity to interview form, teacher acceptability
form), and submit for approval the recruitment script and consent form for use with teacher participants.

Also, since final approval from one of our three partner school districts- Pinellas- was sent to them after they
received USF IRB approval for Year 3 research activities (Pinellas would provide documentation of only
provisional approval until receipt of documentation that USF IRB approved the research activities to transpire),
they uploaded the final approval letter for Pinellas so that USF has on file the most current correspondence from
all district partners.

Appendix V: IRB Amendment Approval (cont.)

*Please use only the official IRB stamped informed consent/assent document(s) found under the "Attachments" tab on the main study's workspace. Please note, these consent/assent document(s) are valid until they are amended and approved.

The IRB does not require that subjects be reconsented.

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with USF HRPP policies and procedures and as approved by the USF IRB. Any changes to the approved research must be submitted to the IRB for review and approval via an amendment. Additionally, all unanticipated problems must be reported to the USF IRB within five (5) calendar days.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

Kristen Salomon, Ph.D., Vice Chairperson
USF Institutional Review Board