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Predictors of Goal Attainment Among High School Students in Accelerated Academic Curricula Receiving School-Based Motivational Interviewing Intervention

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Predictors of Goal Attainment Among High School Students in Accelerated Academic Curricula

Receiving School-Based Motivational Interviewing Intervention

by

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Abstract

Students enrolled in Advanced Placement (AP) courses and International Baccalaureate (IB) programs represent a unique group of adolescents given the high demands of their rigorous coursework and the elevated stress they experience compared to peers in the general education (Suldo & Shaunessy-Dedrick, 2013). These students are often missed in traditional screening procedures that tend to identify students struggling academically or exhibiting disruptive behaviors. Fortunately, Shaunessy-Dedrick and colleagues (2021) developed a comprehensive school-based intervention program, including universal (Tier 1) and selective (Tier 2) components, which aims to support the well-being of AP/IB students. The Tier 2 component of this program (i.e., the Motivation, Assessment, and Planning [MAP] intervention; O'Brennan et al., 2020; Suldo et al., 2021) is grounded in motivational interviewing (MI) techniques and involves 1-2 individualized meetings between AP/IB students and MAP coaches to help students create a goal and action plan aligned with targets promoted in the universal program. This study examined the level of goal attainment reported by 9th grade AP/IB students following participation in two MAP meetings (*N*= 114) and explored factors that may predict students' level of goal attainment following the first MAP meeting. Using hierarchical linear model (HLM) procedures, results indicated that students generally experienced high levels of goal attainment following MAP Meeting One. In addition, students' level of emotional risk (as indicated by school satisfaction [β = .19, *p* = .03]) and student-reported therapeutic alliance (β = .59, *p* = .02) were found to be significant predictors of their goal attainment following MAP Meeting One. The remaining variables included in the HLM model (i.e., gender, GPA, perceived stress, coach-reported therapeutic alliance, and MAP coaches' perceptions of MI-adherence)

were not found to be significant predictors of AP/IB students' goal attainment. Of note, the

bivariate correlation between one indicator of goal attainment (i.e., average percentage of action

plan completed) and MAP coaches' reports of MI adherence during MAP Meeting One was

statistically significant ($r = .26$, $p < .01$), indicating that coach perceptions of their level of MI-

adherent behaviors in the first meeting had a small, positive relationship with the student's

ultimate progress in the subsequent weeks with carrying out action plan developed

collaboratively in that meeting. In a second HLM model, academic and emotional risk was

entered as a single dichotomous variable to determine whether the presence of dual risk factors

(academic *and* emotional risk) versus a single risk factor (academic *or* emotional risk) predicted

AP/IB students' goal attainment following MAP Meeting One. Results indicated a non-

significant relationship between the presence of dual risk factors and students' goal attainment (β

$= -.27$, $p = .13$). Implication for practice, study limitations, and directions for future research are

discussed.

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Chapter I: Introduction

Statement of the Problem

For many teens, the transition from middle school to high school is a stress-provoking experience. Most incoming high school students are faced with navigating unfamiliar buildings, new teachers and peers, and a faster-paced learning environment with a larger workload. Incoming high school students seeking advanced curricular options, including Advanced Placement (AP) courses and International Baccalaureate (IB) programs, often experience even more stress during this transition compared to their peers enrolled in the general education (Suldo & Shaunessy-Dedrick, 2013; Suldo, Shaunessy, & Hardesty, 2008). Students enrolled in AP and IB curricula represent a unique group of students given the high demands of their rigorous, college-level coursework. Unfortunately, these students are often overlooked by traditional screening methods utilized within multi-tiered systems of support (MTSS) in high school settings. This is because traditional screening methods typically identify students who are struggling academically (e.g., low GPAs or failing grades) or are identified by teachers and staff as exhibiting disruptive or off-task behaviors. However, many AP/IB students experience high levels of stress despite experiencing academic success (Suldo & Shaunessy-Dedrick, 2013). Exploratory research conducted by Suldo, Shaunessy-Dedrick, Ferron, and Dedrick (2018) identified several malleable factors that predicted students' social/emotional and academic well-being using a sample of over 2,300 AP/IB high school students. Aligned with their foundational research, as well as the MTSS framework for service delivery, Drs. Shannon Suldo and Elizabeth Shaunessy-Dedrick (University of South Florida, College of Education) iteratively developed

and piloted (1) a universal social-emotional learning program to promote factors identified in their foundational research (i.e., the Advancing Coping and Engagement [ACE] Program; Shaunessy-Dedrick et al., 2021); (2) screening procedures to identify AP/IB students who may be at-risk for academic and/or emotional difficulties following ACE Program implementation (Suldo, Storey, et al., 2019); and (3) a companion Tier 2 intervention aimed at providing selective supports for AP/IB students demonstrating academic and/or emotional risk after receiving universal supports (i.e., the Motivation, Assessment, and Planning [MAP] intervention; O'Brennan et al., 2020; Suldo et al., 2021). Preliminary research from two MAP implementation trials (O'Brennan et al., 2020; Suldo et al., 2021) revealed that students, MAP interventionists (or "coaches"), and school-based mental health providers found the intervention to be appropriate for supporting the social/emotional well-being of at-risk AP/IB students, as well as highly acceptable for school-based settings. These findings suggest that brief, school-based applications of motivational interviewing – such as the MAP intervention – show promise as an acceptable and cost-effective Tier 2 intervention to support the emotional needs of high achieving high school students.

Given that research examining school-based motivational interviewing (SBMI) interventions among AP/IB students is still in its infancy, additional research evaluating the effectiveness of these interventions, as well as the mechanisms or "active ingredients" of these interventions, is warranted. Although theoretical and clinical research has identified several mechanisms of change within various applications of MI (e.g., Copeland, McNamara, Kelson, & Simpson, 2015; Miller & Rose, 2009), it has been noted that an overall lack of research evidence, along with the inclusion of studies with poor internal validity in systematic reviews, has made it challenging to draw firm conclusions regarding the key ingredients of MI. Thus, additional

research examining predictors of positive responses to school-based applications of MI (i.e., MAP intervention) is warranted. To address this gap in the literature, this study explored several factors that may influence students' level of goal attainment following MAP Meeting One: 1) students' level of academic and emotional risk (GPA, perceived stress, school satisfaction); 2) students' gender; 3) students' and MAP coaches' ratings of therapeutic alliance; and 4) MAP coaches' self-reported perceptions of MI-adherence during MAP Meeting One. In addition, this study examined whether the presence of dual risk factors (academic *and* emotional risk) versus a single risk factor (academic *or* emotional risk) measured prior to MAP Meeting One predicted AP/IB students' goal attainment assessed during MAP Meeting Two.

Aligned with Miller and Rose's (2009) theory positing that the mechanisms of change within MI consists of a *technical* and a *relational* component, this study included indicators of both domains as predictors of AP/IB students' goal attainment following the MAP intervention. Specifically, MAP coaches' self-reported MI adherence (e.g., perceived ability to establish client relationship and strategically utilize open-ended questions, affirmations, reflections, and summarizations [OARS] to cultivate change talk and soften sustain talk) was selected as a predictor because of empirical research to date demonstrating a strong link between technical process factors and increases in client change talk – an important proximal indicator of a positive response to MI (Magill et al., 2014, 2018; Romano & Peters, 2016; Pace et al., 2017).

Therapeutic alliance (an important relational aspect of MI) was selected as a potentially salient mechanism influencing students' response to MI-based interventions given that MI is based on student-centered principles and has therapeutic alliance at its foundation (Miller and Rollnick, 2012). Moreover, therapeutic alliance has been consistently linked to positive student outcomes in a variety of intervention studies among clinical and school-based samples (see

Norcross [2011] for a comprehensive review). A systematic review of MI intervention studies also identified therapeutic alliance as a salient mechanism of change (Copeland, McNamara, Kelson, & Simpson, 2015). Thus, therapeutic alliance shows promise as a potentially salient predictor of MAP outcomes (i.e., AP/IB students' goal attainment), but has yet to be studied in this context.

The presence and level of emotional and/or academic risk exhibited by AP/IB students selected to receive the MAP intervention was selected as a predictor of interest given that this sheds light on the particular types of AP/IB students that would benefit the most from MAP. The level of emotional and/or academic risk was determined based on previously established screening procedures (detailed in Suldo et al., 2019, as well as in Chapter 2 of the present study). Existing research suggests that the particular presentation of symptoms or risk (e.g., symptom severity, presence of comorbid risk factors) plays a role in predicting individuals' response to psychological intervention. For example, a systematic review examining common factors that predict psychological treatment outcomes identified symptom severity, as well as the presence of comorbid mental health disorders, as the most reliable factors predicting individual treatment outcomes in community-based settings (Amati, Banks, Greenfield, & Green, 2018). Moreover, in an international, multi-site study of genetic, clinical, and demographic predictors of response to cognitive behavioral therapy for pediatric anxiety disorders, Hudson et al. (2015) found that the presence of comorbid conditions (mood disturbances and/or externalizing behaviors) predicted a poorer response to treatment. Both of these research studies provide evidence that the type of risk (e.g., severity of symptoms, presence of comorbid mental health symptoms) plays a role in the treatment outcomes of diverse samples receiving diverse psychological treatments. Although the predictors examined in this research were not directly aligned with the type of risk that was

evaluated in the present study (described in further detail in Chapter 2), these findings may suggest that the presence and/or severity of dual-risk factors (i.e., academic *and* emotional risk), may yield different responses to the MAP intervention compared to students with single (i.e., academic *or* emotional risk) or no risk factors present.

Student gender was selected as a predictor given this author's goal to explore a comprehensive range of factors potentially influencing MAP intervention outcomes. Although prior published studies on MI interventions have yet to identify gender as a significant moderator of intervention outcomes (see Lundahl et al., 2009), Moyer et al. (2002) and Vasilaki, Hosier, and Cox (2006) posited that men and women may respond differently to various interpersonal intervention styles (e.g., confrontational, collaborative, affirmational, etc.). Moreover, there is some evidence suggesting that gender moderates outcomes in other types of school-based mental health (SBMH) interventions among adolescents, see Friedrich, Raffaele Mendez, and Mihalas (2010) for a review. Thus, the present study aimed to shed light on potential effects of gender on a proximal outcome of AP/IB student well-being (goal attainment). Taken together, increasing our understanding of which factors predict students' response to MAP is valuable because it offers specific insights into how motivational interviewing interventions for AP/IB students can be better tailored to address their needs.

Purpose of the Study

The broad purpose of this study was to expand on existing literature investigating the effectiveness of school-based applications of MI interventions in improving proximal indicators of behavioral change (i.e., goal attainment), as well as the critical process elements that may or may not predict these proximal outcomes. Specifically, this study explored several factors that may influence students' level of goal attainment following MAP Meeting One: 1) students' level

of academic and emotional risk (GPA, perceived stress, school satisfaction); 2) students' gender; 3) students' and MAP coaches' ratings of therapeutic alliance; and 4) MAP coaches' self-reported perceptions of MI-adherence during MAP Meeting One. In addition, this study examined whether the presence of dual risk factors (academic *and* emotional risk) versus a single risk factor (academic *or* emotional risk) measured prior to MAP Meeting One predicted AP/IB students' goal attainment assessed during MAP Meeting Two. This study involved secondary analyses of data obtained from a larger research project led by Drs. Shannon Suldo and Elizabeth Shaunessy-Dedrick (project carried out by a university-based research team that included the researcher for the present study[1]) and funded by the Institute of Education Science (IES; R305A100911; Suldo et al., 2021).

Definition of Key Terms

      Accelerated curricula programs in high school. In the present study, accelerated curricula programs refers to both Advanced Placement (AP) courses and International Baccalaureate (IB) programs. A comprehensive overview of AP courses and IB programs is provided in Chapter 2.

      Student success. Complete mental health and adolescent psychosocial functioning has been previously described as a multidimensional construct including academic and social-emotional domains (Roeser, Eccles, & Sameroff, 2000; Suldo, Thalji-Raitano, Kiefer, & Ferron, 2016). Aligned with these conceptualizations of student success, this study conceptualized AP/IB student success in terms of proximal indicators of emotional well-being (e.g., school satisfaction, negative indicators of mental health problems (e.g., perceived stress relating to academic

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[1] Camille Hanks was involved in the larger IES-funded research study as a graduate research assistant (duties included program material development, data collection, and data entry), as well as a program interventionist (duties included ACE Program facilitation and MAP coach).

workload), and high levels of academic achievement (e.g., overall GPA, semester course grades).

Students were identified as at-risk, and invited to participate in selective interventions, if they

met the below criteria for emotional and/or academic risk:

Indicators of academic risk. In this study, academic risk refers to the extent to which

high school students were not making progress in their schoolwork and achieving their academic

goals. This construct was measured using proximal indicators of academic risk, which included

unweighted semester GPA and semester grades. For this study, students were identified as

academically at-risk if they had a Fall 2018 semester GPA less than 3.0 or a Fall 2018 semester

course grade (AP Human Geography or IB Biology) less than a B.

Indicators of emotional risk. Aligned with Roeser, Eccles, and Sameroff's (2000)

framework of adolescent well-being (described above), student success relating to mental health

refers to the *presence* of emotional well-being, as well as the *absence* of emotional distress. For

this study, proximal indicators of emotional risk include perceived stress and school satisfaction.

Specifically, students were identified as emotionally at-risk if they had a Perceived Stress Scale

(Cohen, Kamarck, & Mermelstein, 1983) greater than or equal to 3.5, (range: 1-5) or a score less

than or equal to 3.5 (range: 1-6) on the school satisfaction subscale of the Multidimensional Life

Satisfaction Scale (MSLSS; Huebner, 1991, 1994; Huebner et al., 1998).

Motivational interviewing (MI). Motivational interviewing (MI) is a person-centered

counseling approach that has been defined as "a collaborative conversational style for

strengthening a person's own motivation and commitment to change" (Miller & Rollnick, 2012,

p. 12). As described by Herman, Reinke, Frey, and Shepard (2014), motivational interviewing

was developed in order to help individuals overcome barriers to motivation, increase compliance

and/or engagement with services or resources, and increase the likelihood that positive behavior

change will occur. MI has demonstrated promise as both an adjunctive component to established therapies (i.e., to increase individuals' motivation to use specific skills learned in psychotherapy) and a stand-alone intervention approach to increase the motivation to use pre-existing knowledge and skills. Chapter 2 of this document will detail the theoretical foundations of motivational interviewing, the *spirit of MI*, the four *processes of MI* (i.e., engage, focus, evoke, and plan), the *core skills* of MI (i.e., open-ended questions, affirmations, reflections, and summarizations), and the *process factors* that may play a role in how MI promotes behavior change (e.g., competency of interventionist, technical and relational factors, etc.).

Therapeutic alliance. Therapeutic alliance represents three dimensions of therapist-client relationships: the degree to which there is collaboration between therapist and client, the affective bond between therapist and client, and the ability for therapist and client to agree on treatment goals and tasks (Norcross, 2011). According to Miller and Rose's (2009) causal theory of MI, a strong therapeutic alliance promotes the frequency of clients' change talk and ultimately leads to positive behavior change. Therapeutic alliance has consistently been linked to positive outcomes in a variety of intervention studies among diverse clinical and school-based samples (Norcross, 2011). In a systematic review of MI intervention outcomes (Copeland et al., 2015), therapeutic alliance was cited as a potential mechanism of change in a variety of MI intervention contexts. The present study examined student- and coach-reported therapeutic alliance as separate predictors of students' goal attainment following the first of two MAP meetings. Measures included the youth-reported Therapeutic Alliance Quality Scale (TAQS; Bickman et al., 2010) and the corresponding clinician-reported Therapeutic Alliance Quality Rating (TAQR; Bickman et al., 2010) to assess the quality of therapeutic alliance from both perspectives.

Goal attainment. Although the current use of goal attainment as an outcome variable in various MI contexts is relatively rare (Lewis, Larson, & Korcuska, 2017), this outcome measure demonstrates promise as a valid and efficient indicator of positive outcomes in the context of SBMI interventions for several reasons. First, goal attainment represents a general outcome measure that can be applied across myriad behavioral change targets (e.g., increasing use of time and task management, support-seeking, or positive thinking strategies) linked to superior academic and emotional functioning among AP/IB students (Suldo et al., 2018). Moreover, outcome variables that only assess distal changes in functioning improvements can miss small or nuanced changes in behavior or functioning that may serve as proximal indicators of future success. In the present study, the use of overall goal attainment as an outcome indicator is useful given the large number of behavioral change targets that could serve as proximal indicators of students' future academic/emotional success. Specifically, students' self-reported progress towards completing steps on their action plan (developed during the "plan" stage of MAP Meeting One in order to increase use of effective coping/engagement factors identified during the "focus" stage) represents an indicator of their future academic/emotional well-being in the present study.

Research Questions

This study addressed the following research questions:

1. What are the overall levels of AP/IB students' self-reported goal attainment (assessed during MAP Meeting Two) following participation in MAP Meeting One?

2. To what extent do the following variables predict AP/IB students' self-reported level of goal attainment assessed during MAP Meeting Two:

a. Students' level of academic (GPA) and emotional risk (school satisfaction, perceived stress) prior to receiving MAP;

b. Students' gender;

c. Students' and MAP coaches' ratings of therapeutic alliance; and

d. MAP coaches' perceptions of MI-adherence during MAP Meeting One?

3. When controlling for students' gender, therapeutic alliance, and perceived MI adherence, to what extent does the presence of dual risk factors (academic *and* emotional risk) versus single risk factors (academic *or* emotional risk) predict AP/IB students' goal attainment following MAP Meeting One?

Significance of the Study

Preliminary research indicates that a school-based application of motivational-interviewing (i.e., the MAP intervention) shows promise as acceptable time-limited Tier 2 intervention aimed at supporting the social/emotional well-being of AP/IB students (O'Brennan et al., 2020; Suldo et al., 2021). Given the lack of research examining the effectiveness and potential active ingredients of SBMI interventions among AP/IB students, the present study helps to fill this gap in the research literature. This study provides valuable information to school psychologists and educational stakeholders seeking recommendations for brief and effective Tier 2 interventions that can help support their at-risk AP/IB students. Specifically, this study sheds light on the overall levels of students' goal attainment following 1-2 MAP meetings, and whether the following factors predict AP/IB students' self-reported level of goal attainment following MAP Meeting One: 1) students' level of academic and emotional risk (GPA, perceived stress, school satisfaction); 2) students' gender; 3) students' and MAP coaches' ratings of therapeutic alliance; and 4) MAP coaches' self-reported perceptions of MI-adherence during MAP Meeting

One. In addition, this study examined whether the presence of dual risk factors (academic *and* emotional risk) versus a single risk factor (academic *or* emotional risk) measured prior to MAP Meeting One predicted AP/IB students' goal attainment assessed during MAP Meeting Two. Information gleaned from this research allows potential end-users of MAP (e.g., school psychologists, school counselors, school social workers) to better understand the key ingredients of this intervention so that it can be better tailored to fit the needs of individual AP/IB students. This research also helps to expand the MI literature by shedding light on the utility of brief measures of relational and technical process factors in educational applications of MI.

Chapter II: Review of the Literature

Overview

This review of the literature will begin by presenting background information regarding students enrolled in advanced curricula programs, including the need for comprehensive school-based social/emotional supports for AP/IB students. Second, an overview of the multi-tiered systems of support (MTSS) approach to support secondary students' academic and social/emotional well-being will be presented, including current gaps in the intervention literature. Third, rationale for use of brief school-based motivational interviewing (SBMI) interventions as potentially effective selective (Tier 2) supports for AP/IB youth will be provided. A promising new SBMI intervention designed to support the unique social/emotional needs of AP/IB students, called the Motivation, Assessment, and Planning (MAP) intervention; Suldo et al., 2021) will then be introduced. Then, current challenges in the measurement of process factors and indicators of positive outcomes of educational applications of MI will be discussed, followed by a rationale for using goal attainment an indicator of a positive response to the MAP intervention. Finally, potentially salient mechanisms influencing students' response to SBMI interventions will be discussed.

High School Students Enrolled in Accelerated Curricula

For high school students seeking advanced curricular options, Advanced Placement (AP) courses and International Baccalaureate (IB) Programs are currently among the most popular options in the United States. Over the past several decades, there has been a significant increase in the number or high school students seeking these accelerated curricular options. For instance,

IB program participation in the United States have steadily increased each year since the first official IB Diploma Program exams were taken in 1970 (International Baccalaureate Organization [IBO], 2020). In 2020, there was a total of 3,444 IB Diploma Programs offered around the globe, which represents a nearly 38% rate of growth from 2015 (IBO, 2020). With the exception of the 2019-2020 school year, the number of students enrolled in AP courses has also increased steadily each year since its inaugural year in 1955, at which time only 1,229 students were enrolled in at least one AP course (College Board, 2019). During the 2019-2020 school year, approximately 2.6 million students were enrolled in at least one AP course across the United States, with students taking nearly 4.8 million AP exams (College Board, 2021). For the first time since its inception, overall AP program enrollment for the 2019-2020 school year was slightly lower than the preceding year, which had over 2.8 million students enrolled (College Board, 2021). Figure 1 depicts the total number of students enrolled in at least one AP course in the United States from 1956 to 2020.
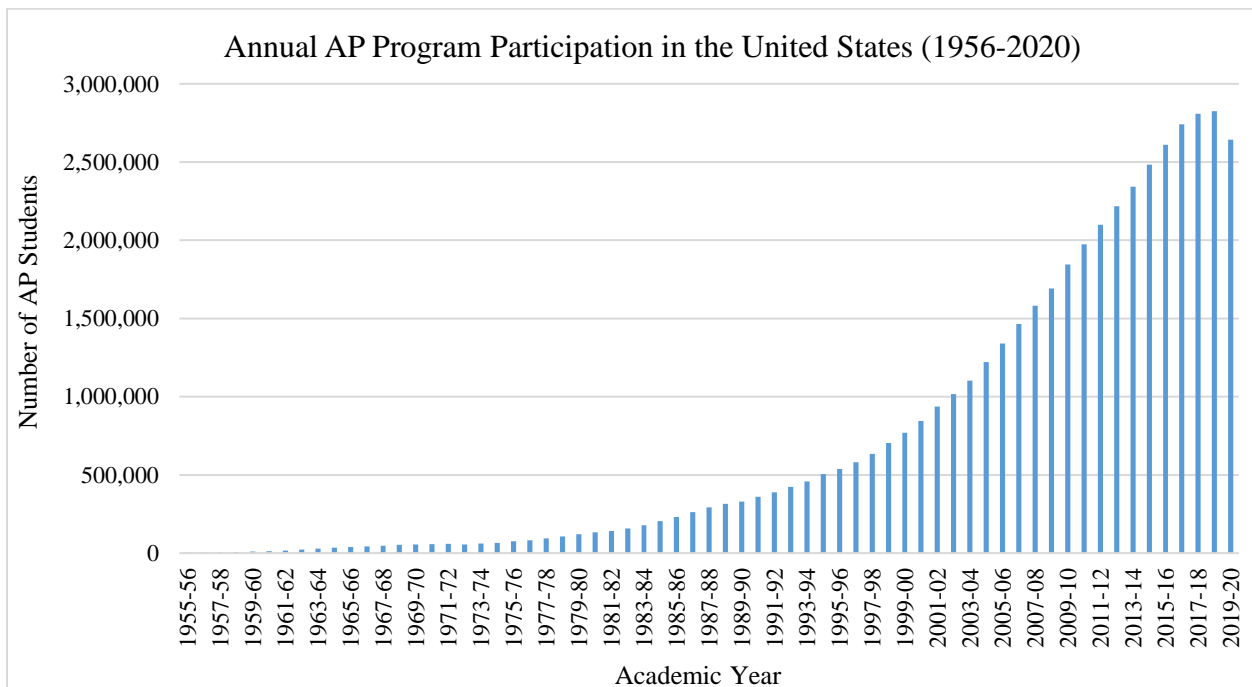
Figure 1. Annual AP program participation, as indicated by total number of students enrolled in at least one AP course by school year (1956-2020; College Board, 2021).

Advanced Placement (AP). After being established by the College Board in 1955, AP

courses are offered in many high schools to students seeking college-level curricula. According

to the College Board website (apstudents.collegeboard.org), students benefit from taking AP

courses because it (1) gives them a head start in high school by giving them "a taste of college-

level work while developing the academic skills [they will] need for college success" and (2)

gives them an edge in college by potentially earning college credits for scoring above a particular

threshold on end-of-course AP exams. Students can select from available AP courses offered at

their high school, out of 38 total AP courses from seven different subject areas.

International Baccalaureate (IB). Similar to the AP curricular option, the IB Diploma

Program offers accelerated curricula to high school students seeking college-level coursework

and potential for college course credit. However, the program philosophy, design, and pre-

requisite requirements for IB programs differ from those for AP courses. While AP courses are

offered by most high schools in an *a la carte* style, the IB Diploma Program offers a

comprehensive, multi-year curriculum designed for students ages 3-19 years old, including the

Primary Years Program (ages 3-12), the Middle Years Program (ages 11-16), and the Diploma

Program (ages 16-19). Each of these programs can be offered to students individually or as a

continuum of programs. The IB Diploma Program is comprised of six subject areas requiring

students to pass end-of-course exams, write an extended essay describing an independent

research project, participate in at least 150 hours of creative, action, and service activities (CAS),

and completion of a critical thinking class called Theory of Knowledge (TOK; IBO, 2020).

Unique experiences of AP/IB students. Students enrolled in accelerated curricula –

namely AP classes and IB programs – represent a unique group of students given the high

demands that their rigorous, college-level coursework places on their schedules. Moreover,

AP/IB students often fall through the cracks of traditional methods of screening for extra

academic and social/emotional supports used in schools. This is because traditional screening

methods typically identify students who are struggling academically (e.g., low GPAs, exam

scores, etc.) or are identified by teachers and staff as exhibiting externalizing and/or disruptive

behaviors. However, compared to non-AP/IB students, many AP/IB students function at high

levels both academically (e.g., higher high school GPAs [Suldo & Shaunessy-Dedrick, 2013],

higher educational attainment [Bergeron, 2015; Chajewski, Mattern, & Shaw, 2011], higher ACT

scores [Warne, Larsen, Anderson & Odasso, 2015], and higher college GPAs [Patterson,

Packman, & Kobrun, 2011]) and behaviorally (e.g., better attendance, fewer behavioral concerns

in the classroom [Suldo & Shaunessy-Dedrick, 2013]), while simultaneously experiencing high

levels of distress. For example, cross-sectional research conducted by Suldo and Shaunessy-

Dedrick (2013) found that AP/IB students (*n*= 347), compared to non-AP/IB students in the

general education setting (*n*= 113), experienced higher levels of perceived stress while

simultaneously exhibiting high levels of academic functioning. In addition, they found that even

after their first semester of 9th grade, IB students already reported higher levels of perceived

stress compared to same-aged non-IB students (Suldo & Shaunessy-Dedrick, 2013). Many AP

and IB students entering 9th grade were likely top-achieving students in their middle school

classrooms, so the transition to a classroom full of "top-achievers" with increased academic rigor

is often overwhelming and stress-provoking. More recent cross-sectional research conducted by

Suldo et al. (2018) also found that among over 2,300 AP and IB students, the vast majority

(approximately 70%) of AP/IB students reported symptoms of school burnout (e.g., sense of

inadequacy at school, feelings of exhaustion due to schoolwork). Thus, despite the absence of

typical social/emotional and/or academic risk factors that often signal a need for additional

supports (e.g., poor grades, off-task/disruptive behaviors, etc.), many AP/IB students experience unique social/emotional risk-factors (e.g., high levels of stress, challenging transition from middle school, etc.) that warrant universal screening, early identification, and intervention in the school setting.

Defining AP/IB student success. Despite the historical view that student success is defined solely as academic achievement, more recent conceptualizations of students' functioning focuses on both mental health *and* academic achievement (Suldo, Gormley, DuPaul, & Anderson-Butcher, 2014). These domains, though measured as separate indicators of functioning, are interrelated domains that both warrant attention. Indeed, existing research has established that mental health problems create a barrier to learning, negatively influencing academic outcomes. Conversely, poor academic achievement has been found to negatively impact mental health. Thus, examining both indicators of functioning is warranted (see Suldo et al. [2014] for a comprehensive review).

Academic indicators. Academic indicators of success have recently been conceptualized as multidimensional, including both academic skills (e.g., exams, course grades, GPA, etc.) as well as academic behaviors and attitudes that enable academic skills (e.g., attendance, engagement, time on task, etc.). Indeed, Doll, Spies, and Champion (2012) argue that rather than measuring students' academic success by looking at dropout rates, research should redirect their attention to school completion and students' active engagement in the learning process. Similarly, Suldo et al. (2014) argued that measuring students' academic success should go beyond solely examining academic skills (e.g., exams, course grades, GPA, etc.), but also the behaviors and attitudes that have been shown to predict more engagement in learning and ultimately enable future academic skills. These attitudes and behaviors include behavioral (e.g.,

on-task behaviors in the classroom) and affective (e.g., feeling connected to teachers and school) forms of student engagement (Suldo et al., 2014).

Social/emotional indicators. As with academic indicators of functioning, social/emotional functioning has more recently been described as a multidimensional construct, including not only the absence of psychopathology, but also the presence of positive emotions. This more modern definition of social/emotional well-being goes beyond the traditional *pathological* or *deficit* model of mental health, which focused only on the absence of psychopathology, and instead considers social/emotional *flourishing* to include both the absence of distress and the presence of positive emotions, such as life satisfaction (see Howell, Keyes, and Passmore [2013] for a review). Suldo and Shaffer's (2008) research on a dual-factor model of mental health indicated that students with complete mental health (i.e., low psychopathology, high subjective well-being) had significantly better outcomes, including academic skills, school attendance, academic self-perceptions, academic-related goals, peer and adult support, self-perceived physical health, and fewer social problems, than their *vulnerable* peers who also had low psychopathology (but in combination with low subjective well-being). Thus, it can be argued that positive indicators of mental health (including life satisfaction) can serve as promotive factors for students with similar levels of psychopathology.

More specifically, life satisfaction in children and teens has been conceptualized as a multidimensional construct involving students' appraisal of their satisfaction in five domains: school, self, family, friends, and living environment (Huebner & Gilman, 2002). During the initial development of the Multidimensional Life Satisfaction Scale (MLSS) for youth, Huebner and Gilman (2002) conducted literature reviews, engaged in pilot interviews with students, read student essays, and conducted pilot research (e.g., Huebner, 1991), in order to determine the

most salient factors relating to life satisfaction. Since then, research has consistently identified school satisfaction as a key dimension of youths' multidimensional life satisfaction. In a study investigating the relationship between high school students' (*N*= 341) ratings on the School Satisfaction subscale of the MSLSS and various social/emotional and academic outcome measures, Huebner and Gilman (2006) found that students with higher ratings of school satisfaction demonstrating higher functioning on several indicators of academic and social/emotional well-being (compared to students who reported disliking school). Students who had the highest 20% of scores on the school satisfaction subscale of the MSLSS, when compared to students with scores in the lowest 20%, reported higher levels of global life satisfaction, hope, internal locus of control, and academic performance (GPA). Students in the very low satisfaction group were also more likely to experience clinical levels of psychological symptoms. Thus, high school students' self-reported rating of their school satisfaction represents a promising indicator of well-being in both social/emotional and academic domains. Taken together, existing literature to date provides considerable rationale to utilize self-reported school satisfaction as an indicator of academic and social/emotional functioning when conducting mid-year screenings of mental health or assessing ultimate student outcomes.

Predictors of AP/IB student success. Research conducted by Suldo et al. (2018) has shed light on a myriad of intrapersonal and environmental factors that predict AP/IB student success in particular, both in terms of academic and social/emotional functioning. These included students' use of approach/problem-focused coping styles (e.g., time and task management, positive thinking, seeking academic support, etc.), high levels of engagement in school (e.g., participation in extracurricular activities, positive appraisals of their teachers, etc.), and their motivation to achieve. Family factors, including the presence of authoritative parenting practices

in the home, were also significantly correlated with students' academic and social/emotional success (Suldo et al., 2018). In contrast, Suldo and colleagues found that worse academic and social/emotional outcomes were associated with avoidant coping styles (e.g., social withdrawal, attempting to handle problems alone). These findings, consistent with previous research among high school students (Casillas et al., 2012; Wang & Sheikh- Khalil, 2014) and college students (Krumrei-Mancuso et al., 2013; Richardson, Abraham, & Bond, 2012), indicated that their academic and social/emotional success is predicted by both non-malleable (e.g., prior academic achievement, socioeconomic status) and malleable factors (e.g., school engagement, motivation to achieve, approach/problem-focused coping styles).

As will be described in subsequent sections, the present study utilized proximal outcome data from an implementation study of the Motivation, Assessment, and Planning (MAP) intervention, a promising new Tier 2 intervention designed for at-risk AP/IB students. The primary aim of MAP is to guide AP/IB students to make behavioral changes aligned with this foundational research by Suldo et al. (2018) which identified predictors of academic/emotional success (e.g., use of active coping strategies, high levels of engagement in school, etc.). MAP in particular was designed as a targeted intervention for at-risk AP/IB students with the goal of guiding students towards developing a step-by-step action plan aimed at increasing their use of effective coping and engagement skills. The purpose of the present study was twofold: to assess the degree to which AP/IB students met their behavioral change goals (aligned with predictors of AP/IB student success) after participating in MAP Meeting One; and 2) determine whether particular factors, including intervention process factors (ratings of perceived MI-adherence, perceptions of therapeutic alliance) and student characteristics (level of academic and/or

emotional risk prior to MAP, student gender), predict AP/IB students' level of goal attainment following MAP Meeting One.

MTSS for Maximizing AP/IB Academic and Social/Emotional Success

Despite existing literature suggesting that AP and IB high school students face unique social/emotional challenges and demanding academic workloads, there are minimal evidence-based interventions that have been evaluated among this population beyond the work of Suldo and colleagues (2019, 2020). AP and IB student receive the same academic and mental health supports that are available to all students at their respective high schools. School-based social/emotional prevention and intervention programs are unique and important because they help reduce the barriers that often preclude students from accessing appropriate social/emotional supports outside of the school setting. Barriers that often get in the way of community-based mental health treatment include a lack of transportation, a lack of access to appropriate providers, high treatment costs, and stigma associated with receiving mental health services (Doll, Cummings, & Chapla, 2008). Hoover et al. (2019) stated that "schools are a natural and logical setting in which to employ a public health framework that focuses on promoting student well-being and healthy behaviors and preventing mental health problems before they occur" (p. 16). In fact, children and adolescents are 6 times more likely to receive evidence-based mental health interventions in school settings compared to other community-based settings (Hoover et al., 2019). Schools also offer a natural setting for social/emotional skill development, practice in naturally occurring settings, and generalization of skills. In addition, research suggests that social and emotional competence (commonly called "non-cognitive skills") provides an important foundation for students to succeed academically (Durlak et al., 2011; Zins, 2004).

Providing a multi-tiered continuum of mental health supports is particularly important for adolescent students, given their unique developmental stage marked by many internal and external transitions. According to the 2015 CASEL Guide for Effective Social and Emotional Learning Programs (Middle and High School Edition):

> The knowledge, skills, and attitudes within the CASEL five competency clusters [self-awareness, self-management, social awareness, relationship skills, and responsible decision-making] are especially critical during adolescence because youth at this stage are going through rapid physical, emotional, and cognitive changes. These changes create unique opportunities for personal and social skill development. Adolescents also engage in more risky behavior than younger students and face a variety of challenging situations, including increased independence, peer pressure, and exposure to social media. (p. 6).

Not only do AP and IB students experience the social, emotional, and developmental changes that accompanies all youths' transition into adolescence, but also experience a high level of academic stress relating to workload. Thus, in order to promote and maximize the academic and social/emotional well-being of AP and IB students, current best practices in population-based school mental health services states that schools should engage in universal screening to identify the unique social/emotional needs of their AP/IB students, identify all available resources within their school and community, and create a plan to maximize available resources so that they maximize student well-being (Doll et al., 2008). This can be best accomplished through integrated multi-tiered systems of support (MTSS). As described in Chapter 1 (and more comprehensively in Christner et al., 2008; Cook et al., 2015; and Hoover et al., 2019), MTSS is a service delivery model that utilizes data-based decision making to provide academic, social/emotional, and academic supports across at least three levels – or *tiers* – of support:

universal (Tier 1), targeted (Tier 2), and intensive (Tier 3). Universal prevention/intervention supports are those provided to all students. Targeted prevention/intervention supports are those provided to students who are identified as "at-risk" despite receiving universal supports (approximately 15-20% of students). Intensive prevention/intervention supports are those provided to students with severe needs who require additional support above and beyond Tier 1 and 2 (approximately 5% of students).

        Tier 1 (universal) supports for secondary students. For secondary students, universal social/emotional learning (SEL) programs have historically focused on preventing or decreasing problematic student outcomes (e.g., substance use, academic failure/dropout, teen pregnancy), or on teaching and promoting social/emotional skills, such as strategies to cope with stress and academic demands (see CASEL [2015] for a comprehensive review of SEL programs for secondary students). In general, research suggests that universal SEL programs can improve the academic and social/emotional outcomes of students. For example, a meta-analysis conducted by Durlak, Weissberg, Dymnicki, Taylor, and Schellinger (2011) found that compared to students in control conditions, kindergarten through 12-grade students who received universal SEL programs (*N*= 270,034 students, 213 school-based SEL programs) demonstrated increased academic performance as well as social/emotional skills, attitudes, and behaviors compared to students in control conditions. However, among the school-based SEL programs that were analyzed for this study, less than a third (27%) were aimed at improving outcomes among high school students, and no SEL programs were designed to support the unique social/emotional needs of AP/IB students in particular. This gap in the research literature sheds light on the unmet social/emotional needs that exist among our high-achieving, emotionally at-risk secondary students.

Advancing Coping and Engagement (ACE) Program (Shaunessy-Dedrick et al., 2021).

In response to the lack of research evaluating SEL programs among high school students, and in

particular high-achieving students enrolled in AP/IB classes, Drs. Suldo and Shaunessy-Dedrick

developed a multi-tiered program aimed at providing supports to this unique group (Shaunessy-

Dedrick et al., 2021; Suldo et al., 2021). Their program is composed of a universal (Tier 1) SEL

curriculum (the Advancing Coping and Engagement [ACE] program; Shaunessy-Dedrick et al.,

2021), as well as a targeted Tier 2 intervention (the Motivation, Assessment, and Planning

[MAP] intervention; O'Brennan et al., 2020; Suldo et al., 2021). The ACE Program is a 10-12

week (including 2 optional or "capstone" modules), universal SEL curriculum that aims to teach,

practice, and reinforce skills and strategies to support AP/IB students' social/emotional and

academic functioning. The content of the ACE curriculum is grounded in the aforementioned

foundational work by Suldo et al. (2018), which identified several malleable factors that were

uniquely associated with AP/IB student success, both academically and emotionally. These

factors fell within several broad categories, including: 1) increasing the use of effective coping

strategies (e.g., time and task management, seeking academic support); 2) limiting the use of

ineffective coping strategies (e.g., cheating on assignments, self-isolating in times stress,

procrastination); and 3) increasing school engagement behaviors (e.g., involvement in

extracurricular activities, having a positive appraisal of school or program). The ACE program

also includes a teacher and a family component that aligns with and supports the ACE student

program content and curriculum. The teacher component includes 12 online webinars that

directly correspond (1:1) to the 12 ACE student program modules. The family component

includes two in-person, research-based presentations that provide an overview of program

content, as well as strategies for families to support AP/IB students' academic and emotional

well-being at home. An overview of the content covered by the ACE student program, organized

by factor (e.g., coping, engagement, and family support), specific module content, and

stakeholder, is presented in Table 1.

Table 1

Advancing Coping and Engagement (ACE) Program Content Overview, by Stakeholder

Factors	Module Content	Student Program	Teacher Program	Family Program
Background Research	Module 1: Adjusting to AP/IB: Role of Stress	X	X	*Parents receive weekly handouts that summarize content taught in student modules
	Module 2: Factors Related to AP/IB Success	X	X	
Engagement	Module 3: Forming School Pride	X	X	
	Module 4: Engagement: Forming Strong Connections to AP/IB Teachers	X	X	
	Module 5: Extracurricular Activities at School and Community	X	X	
Coping	Module 6: Time & Task Management (Part 1)	X	X	
	Module 7: Time & Task Management (Part 2)	X	X	
	Module 8: Relaxation & Positive Thinking	X	X	
	Module 9: Seeking Support from School and Beyond	X	X	
	Module 10: Minimizing Use of Ineffective Strategies	X	X	
Capstone (Optional Modules)	Module 11: Promoting Eustress & Review of Coping and Engagement Tools	X	X	
	Module 12: Strengths, Values, and Goals	X	X	
Family Support	Family Module 1: Overview of the ACE Program			X
	Family Module 2: Features of Supportive Families			X

Tier 2 (targeted) supports for secondary students. For students who continue to

experience social/emotional difficulties (i.e., continue to be "at-risk" for developing emotional,

behavioral, and/or academic problems) despite receiving Tier 1 supports, targeted (Tier 2) and

intensive (Tier 3) school-based interventions may be warranted. School-based mental health

providers can expect approximately 15-20% of their students to require and benefit from Tier 2

supports (Hoover et al., 2019). Hoover et al. (2019) described Tier 2 mental health interventions

as appropriate for at-risk students who have been "identified through needs assessments,

screening, referral or other school teaming processes as experiencing mild distress or functional

impairment, or being at risk for a given problem or concern" (p. 24). According to a review by

Christner, Mennuti, and Whitaker (2008), the essential elements of Tier 2 interventions for

social/emotional needs are as follows: 1) targeted interventions are aimed at minimizing specific

risk factors among students; 2) data is used to identify specific student needs for intervention and

to monitor response to intervention; 3) targeted interventions promote skill development via

small group or individual instruction/modeling; and 4) targeted interventions give students ample

opportunities to practice skills to promote generalization across settings. Examples of common

Tier 2 interventions for mental health include targeted small-group interventions (e.g., social

skills groups, anger management skills training, etc.), brief individualized interventions (e.g.,

motivational interviewing, action planning), frequent check-ins and/or goal setting with adults

(e.g., *Check and Connect*; Christenson et al., 2008), or use of behavioral reinforcement systems

(e.g., daily report cards). Examples of *manualized* interventions that can be used as selective

mental health supports include: *Coping Cat* for anxiety (Kendall & Hedtke, 2006), *Coping*

Power Program for anger (Larson & Lochman, 2002), *Aggression Replacement Training (ART)*

for aggressive behaviors (Goldstein et al., 1998), and *Coping With Depression* for depressive

symptoms (Lewinsohn et al., 1996).

Unfortunately, there is a paucity of literature evaluating the effectiveness of targeted

interventions among high school students in particular. In a review of targeted (Tier 2)

interventions delivered within the context of multi-tiered models with a universal behavior plan, Bruhn, Lane, and Hirsch (2014) identified only one research study (out of 28 total) that included secondary students (Lane, Kalberg, Mofield, Wehby, & Parks, 2009). Moreover, the intervention evaluated in Lane et al.'s study aimed to improve high school students' scores on the ACT and did not specifically address the social/emotional needs of these students. In a more recent review, Feiss et al. (2019) synthesized a total of 42 articles (including over 7,000 students ages 11-18 years old) examining the effectiveness of school-based mental health supports for internalizing mental health problems (i.e., symptoms of depression, anxiety, and stress). They found that overall, school-based interventions aimed at reducing symptoms of depression and/or anxiety in adolescents were effective (interventions specifically targeting stress reduction did not yield significant findings). Their results also demonstrated that *targeted* school-based interventions were generally more effective than *universal* interventions; however, they noted that "the majority of participants in universal programs do not exhibit elevated symptoms, and therefore there may be a floor effect to the degree of symptom reduction possible" (p. 1681). In another recent review, Arora et al. (2019) synthesized a total of 71 studies examining Tier 2 school-based mental health supports for youth with depressive symptoms. They found that nearly 80% of these studies (*n*= 55) demonstrated positive results, with effect sizes ranging from 0.1 to 2.24. Of the 119 studies that they included in their review of Tier 1, 2, and 3 interventions, secondary students were represented in nearly 43% of studies.

A limitation noted in several of the aforementioned meta-analyses was the lack of studies examining Tier 2 SEL interventions among high school students in particular. For example, in response to the homogenous sample of studies included in their systematic review of Tier 2 interventions, Bruhn et al. (2014) noted:

"Because we know younger students are more amenable to intervention (Kazdin, 1987) and, clearly, targeted interventions are occurring at the elementary level, we need to find ways to effectively intervene with what is a presumably more resistant population at middle and high school levels." (p. 185).

Clearly, researchers and school administrators alike are recognizing the importance of developing and evaluating Tier 2 interventions for both AP/IB and non-AP/IB secondary students. For AP/IB students in particular, selective interventions should promote factors linked to their social/emotional and academic well-being, including effective ways to manage academic stressors and engagement and motivation at school (Suldo et al., 2018). This is somewhat dissonant with most existing targeted cognitive-behavioral interventions which adopt a more deficit model of mental health by aiming to reduce the presence of psychopathology. As discussed by Arora et al. (2019), it is also important to consider using social/emotional Tier 2 supports that are part of a complete continuum of services (i.e., embedded into existing MTSS processes), rather than provided in a piecemeal fashion to students with identified risk. As stated by Arora et al. (2019), future research of Tier 2 interventions "should also work to develop transition criteria between tiers as well as identifying a progress monitoring assessment that can be administered repeatedly" (p. 258). As astutely pointed out by Moore et al. (2019), the aforementioned review of Tier 2 interventions conducted by Bruhn et al. (2014) found that less than 50% of studies included in their review used a universal screening method to identify candidates to receive selective interventions. For studies that included a screening component, the most common measures were aligned with deficit-focused measures of risk (e.g., Systematic Screening for Behavioral Disorders; Walker & Severson, 1992). This highlights the need for universal screening methods to identify students in need of Tier 2 interventions that measures

student deficits (e.g., perceived stress) as well as strengths (e.g., school satisfaction, student engagement).

Taken together, additional research examining Tier 2 interventions that support AP/IB students' complete mental health (i.e., by reducing risk *and* promoting well-being), as well as academic functioning, is warranted. As the subsequent section will review in further detail, school-based motivational interviewing (SBMI) shows promise as a potential selective (Tier 2) intervention for high achieving adolescents exhibiting signs of social/emotional and/or academic risk. Included in this review is a promising new SBMI intervention (i.e., the MAP intervention) that is embedded within a comprehensive MTSS approach, aligned with recommendations from Arora et al. (2019), that also includes a universal SEL component, a process to screen students for continued emotional and academic risk, and a referral process for students in need of intensive individualized supports.

Rationale for SBMI as an Effective Tier 2 (Targeted) Intervention for AP/IB Youth

What is motivational interviewing (MI)? Motivational interviewing (MI) is a client-centered counseling approach that has been defined as "a collaborative conversational style for strengthening a person's own motivation and commitment to change" (Miller & Rollnick, 2012, p. 12). Over the past twenty years, MI has demonstrated promise as both an adjunctive component to established therapies (i.e., to increase individuals' motivation to use specific skills learned in psychotherapy), as well as a stand-alone intervention approach to increase the motivation to use the knowledge and skills that an individual already possesses. In order to gain a better understanding of motivational interviewing as a counseling approach, it is essential to understand the theoretical foundations of motivational interviewing, as well as the *spirit of MI*,

the four *processes of MI* (i.e., engage, focus, evoke, and plan), and the *core skills* of MI (i.e., open-ended questions, affirmations, reflections, and summarizations).

Theoretical foundations of motivational interviewing. The theoretical underpinnings of motivational interviewing help to shed light on how this therapeutic approach may help guide AP/IB students towards helpful behavior changes aligned with the aforementioned predictors of social/emotional and academic well-being (e.g., using effective coping strategies, school engagement behaviors; see Suldo et al., 2018). Although the majority of intervention research focuses on targeting individuals that are ready and willing to change, there is much less research examining how to mobilize individuals to engage in these behaviors. Most people are ambivalent when it comes to making behavioral challenges (e.g., "I want to lose weight, but I hate waking up early for the gym"). Fortunately, research over the last few decades has shed light on *how* and *why* MI may guide students towards positive behavioral changes. One theory of change grounded in social psychology research, called the Self-Determination Theory (SDT; Deci & Ryan, 2012; Ryan & Deci, 2000), provides a framework for understanding factors that can help elicit students' motivation to make behavioral changes. According to SDT, individuals are more likely to become intrinsically motivated to engage in behaviors when three psychological needs are met: *autonomy*, *competence*, and *relatedness to others*. MI aligns with SDT in several ways, including a focus on promoting an individual's autonomy, supporting their perceived competence (e.g., eliciting ability to change, such as, "What skills or strengths do you possess to engage in this behavioral change?"), and the emphasis on therapeutic alliance and partnership.

Another theoretical model that is often cited concurrently with MI is the transtheoretical model (TTM) of change (Prochaska & DiClemente, 1984). TTM is a theory which posits that behavior change occurs through discrete stages or "levels of readiness": 1) *precontemplation*

(individual has no plans to change within 6 months); 2) *contemplation* (individual is considering change or ambivalent); 3) *preparation* (individual is taking initial action steps towards changing); 4) *action* (individual attempts change); 5) *maintenance* (individual sustains behavior change for more than 6 months); and 6) *termination* (individual is certain they will not relapse into old behavior). Although MI and TTM have frequently been connected in the research literature, Miller and Rollnick (2013) described the relationship between the two as 'kissing cousins who never married' (p. 35). In their article titled, "Ten Things that Motivational Interviewing Is Not," Miller and Rollnick (2009) also stated: "TTM is intended to provide a comprehensive conceptual model of how and why changes occur, whereas MI is a specific clinical method to enhance personal motivation for change" (p. 130). In other words, TTM provides a useful conceptual model of the processes that individuals go through when engaging in behavioral changes, while MI provides the clinical approach or conversation style to help guide people through these stages of change.

       Spirit of MI. In Miller and Rollnick's (2013) foundational literature reviewing MI as a therapeutic approach, they emphasized that without the "spirit of MI" (i.e., a therapeutic orientation grounded in partnership, acceptance, compassion, and evocation), MI can become coercive or manipulative, with "expert" clinicians strong-arming clients into making behavioral changes aligned with what *they* is best for the client. In contrast, the spirit of MI is a therapeutic orientation in which clinicians promote *partnership* (collaboration between client and therapist), *acceptance* (unconditional positive regard, empathy, and autonomy promotion of client), *compassion* (prioritizing clients' needs/wants rather than self), and *evocation* (evoking pre-existing desires, abilities, reasons, and needs for change from the client).

Processes of MI. With the spirit of MI in mind, the central processes of MI have been defined by Miller and Rollnick (2013) and include the following clinician behaviors: *engaging* (building an effective therapeutic alliance or working relationship with the client); *focusing* (guiding the conversation towards a specific behavioral change goal); *evoking* (eliciting the clients' desires, abilities, reasons, and need for change); and *planning* (eliciting the clients' commitment to change and collaboratively creating an action plan for change). Miller and Rollnick (2013) described these as overlapping processes, rather than sequential phases, because each process builds upon the previous one and can (and should) be revisited as needed.

Core skills of MI. Effective application of MI is also associated with the clinician's use of the following core skills: open-ended questions, affirmations, reflections, and summarizations (collectively referred to as "OARS"). While the spirit and processes of MI represent the "what" component of MI interventions, the core skills described in this section represent the "how" of MI. By using open-ended questions and reflections, the clinician invites the client to ponder, explore, and expand on their thoughts and feelings about making a behavior change. Providing affirmations highlights the clients' character strengths and resources, promoting both the therapeutic alliance and their confidence to change. By using summary statements, the clinician can synthesize and communicate the key insights and statements made by the client.

Process factors of MI. Miller and Rose (2009) posited that the most important process factors of MI consist of skills and behaviors that broadly fall into two categories, including a *technical* component and a *relational* component. The technical component is generally described as the interventionists' ability to use MI core skills (open-ended questions, affirmations, reflections, and summarizations) in a strategic way that cultivates clients' *change talk* and softens *sustain talk.* Miller and Rollnick (2013) described change talk as "any self-

expressed language that is an argument for change" (p. 159), while sustain talk as "the person's own arguments for not changing, for sustaining the status quo" (p. 7). Not surprisingly, MI research has identified a positive relationship between change talk and better outcomes (e.g., Walker, Stephens, Rowland, & Roffman, 2011), while sustain talk is associated with worse outcomes (e.g., Apodaca et al., 2014). The relational component includes client and coaches' ratings of therapeutic alliance and adherence to the *spirit of MI (promoting* partnership, acceptance, compassion, and evocation). Magill et al. (2014) expanded the causal model purported by Miller and Rose (2009) by explaining the two theoretical paths involved in the MI process. The first path depicted in their model is that clinicians' MI fidelity (or "proficiency") predicts clients' change talk (path a), and the second path indicates that clients' change talk predicts behavioral change (path b). MI proficiency was posited to consist of technical and relational components (increasing change talk), as well as MI-inconsistent behaviors (increasing sustain talk). The proportion of change talk, sustain talk, and the ratio of change talk to sustain talk was purported to predict outcomes. Frey et al. (2020) recently expanded on the two seminal models that attempt to explain *why* MI produces behavioral changes (Magill et al., 2014; Miller & Rose, 2009). In addition to the pathways posited by Magill et al. (2014), Frey et al. (2020) proposed four links in the mechanisms of motivational interviewing (MMI) conceptual framework: initial training of clinicians is linked to competency in simulated settings (link 1), competency is then linked to proficiency of MI in authentic practice settings (link 2), proficiency predicts clients' change talk (link 3), and change talk is then linked to behavioral change (link 4).

Research to date suggests that although both components are important, the technical process factors more powerfully predict MI outcomes when compared to relational factors. For instance, several meta-analyses have found mixed evidence supporting the hypothesis that

relational factors (e.g., empathy, autonomy promotion, and collaboration) predict clients' change

talk (Magill et al. 2014, 2018; Miller & Rose 2009; Romano & Peters 2016). Technical MI skills,

on the other hand, have been more consistency linked to increases in client change talk (Magill et

al., 2014, 2018; Romano & Peters, 2016; Pace et al., 2017). However, technical MI skills were

also linked to increases in sustain talk, suggesting that strong technical skills elicit increased

explorations of their ambivalence about behavioral change. Moreover, Frey et al. (2020) noted

the dearth of research identifying empirically valid measurement tools for assessing the process

factors of MI (i.e., technical, relational, and MI-inconsistent behaviors): "the existing measures

are either resource intensive (MITI and MISC), do not reflect current conceptualizations of MI

practice (HRQ and VASE-R), or are limited to practice in school-based contexts (WASE-SBA

and VASE-SBA)" (p. 5).[2] Thus, there is an identified need to identify reliable and valid measures

of these indicators that are feasible across MI contexts.

Taken together, the *spirit of MI*, the four *processes of MI* (i.e., engage, focus, evoke, and

plan), the *core skills* of MI (i.e., open-ended questions, affirmations, reflections, and

summarizations), and the *process factors* of MI (relational and technical components, clinician

proficiency) intertwine to create a unique therapeutic approach that promotes client autonomy

while simultaneously eliciting behavior change. Over the last two decades, MI has emerged as a

therapeutic approach with many applications, including improving health behaviors (e.g.,

reducing substance abuse, increasing health behaviors and compliance), and has demonstrated

effectiveness as an adjunctive or stand-alone therapy (see Miller & Rollnick, 2012).

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[2] MITI: motivational interviewing treatment integrity (Moyers et al. 2016); MISC: Motivational Interviewing Skills Code (Houck Moyers et al. 2011); HRQ: Helpful Response Questionnaire (Miller et al., 1991); VASE-R: Video Assessment of Simulated Encounters (Rosengren et al., 2008); WASE-SBA: Written Assessment of Simulated Encounters-School Based Applications (Lee et al. 2013a); VASE-SBA: Video Assessment of Simulated Encounters-School Based Applications (Lee et al. 2013b). See Frey et al. (2020) for detailed descriptions of the measures listed.

School-based motivational interviewing (SBMI). Although MI has potential for application in diverse contexts, school-based motivational interviewing (SBMI) is a promising intervention for AP/IB students for several reasons. First, Kaplan et al. (2014) argued that interventions utilizing motivational interviewing techniques may work particularly well with adolescents given that the underlying principles of the therapeutic approach (e.g., valuing the student's autonomy, using a collaborative approach) aligns well with adolescents' personal desire for autonomy and independence. Teens are often told how to behave from their parents and teachers without being given the opportunity to express their own values and goals or engage in collaborative goal-setting with adults. SBMI allows students to share their values and goals, feel heard through empathetic responses and reflections from interventionists, and engage in collaborative goal-setting. Second, there is emerging evidence that MI is effective in improving behavioral outcomes in a range of clinical domains, including substance abuse (Barnett, Sussman, Smith, Rohrbach, & Spruijt-Metz, 2012), depression (Brody, 2009) and self-harm behaviors (Kamen, 2009). Moreover, a systematic literature review conducted by Snape and Atkinson (2016) found emerging evidence that SBMI is an effective intervention among youth, even with just one session of MI. For example, studies included in their review reported improvements in attendance, confidence with schoolwork, and attitude towards school (Atkinson & Woods, 2003); academic grades (Strait et al., 2012; Terry, Strait, McQuillin, & Smith, 2014); and vocational skills self-efficacy, self-determination, and vocational outcome expectations (Sheftel, Lindstrom, & McWhirter, 2014), following brief MI interventions in educational settings.

The interest and popularity of school-based applications of MI has continued to grow in recent years. Ratanavivan and Ricard (2020) described the implementation of SBMI intervention

called the *Making Positive Changes Counseling (MPCC)* among elementary-aged students

enrolled in disciplinary alternative education settings. This program shows promise in addressing

students' readiness for change, exploring their goals/values/strengths, discussing current

behaviors and areas for possible changes, and engaging in effective decision making. In a recent

pilot study, Henry et al. (2021) found that students in alternative school placements (*N*= 39) who

received the *Motivational Interviewing with At-Risk Students (MARS) Mentoring* Program (i.e.,

mentorship program delivered through a motivational interviewing framework) experienced

improved emotional/behavioral functioning, fewer disciplinary actions, and improved academic

performance at school (Henry et al., 2021). Collectively, these findings suggest that SBMI has

the potential to be an appropriate, time-limited Tier 2 intervention for supporting secondary

students' (including those enrolled in AP/IB classes) academic and social/emotional well-being

in the school context (Henry et al., 2021; Snape & Atkinson, 2016).

      Effectiveness of SBMI interventions. In the mid-1990s, one of the largest studies

examining the efficacy of various therapeutic approaches for alcohol dependent adults was

conducted (i.e., Project MATCH Research Group, 1993). Participants (*N* = 952) were randomly

assigned to one of three therapeutic arms: 1) 12 weekly sessions of cognitive behavioral coping

skills therapy; 2) 12 weekly sessions of 12-step facilitation therapy); or 3) 4 total sessions of a

motivational interviewing-based intervention ("motivational enhancement therapy") delivered

across 12 weeks. Although researchers involved in the study hypothesized that participants

receiving the MI treatment would not respond as well as the other two arms (given the

significantly smaller number of sessions provided), they found that individuals receiving only up

to 4 sessions of the MI-based intervention responded similarly to those receiving more intensive

treatments, regardless of symptom severity. These findings piqued the interest of researchers and

clinicians alike. Since then, there have been more than 200 randomized controlled trials

examining the efficacy of MI in a variety of clinical and school-based settings (Miller &

Rollnick, 2002, 2013). For the purposes of the present study, the literature presented in

subsequent paragraphs will focus on school-based applications of MI. Beyond its theoretical

appeal as an intervention to promote adolescents' well-being in schools, emerging research

provides further rationale to utilize SBMI in the school setting.

Recent research has examined SBMI in two different contexts, including student-focused

SBMI (i.e., the MI interventionist works directly with the student) and consultative-focused

SBMI (i.e., the MI interventionist works with students' stakeholders, such as teachers and

parents; Strait, McQuillin, Terry, & Smith, 2014). Given that the focus of the present study

included a student-focused application of SBMI, this review will focus on the emerging evidence

that student-focused SBMI can promote behavior change and student well-being. Snape and

Atkinson (2016) conducted a systematic literature review aimed at expanding earlier reviews

conducted by Frey et al. (2011) and Woods et al. (2014), which examined the effectiveness of

SBMI interventions. In their review, Snape and Atkinson (2016) identified a total of 11 empirical

studies that met their inclusion criteria (i.e., students were 5-21 years old, interventions were MI-

based and occurred in educational settings, included peer-reviewed studies written in English),

with 8 determined by the authors as "best evidence" and included in their final analyses of

findings. Of the 8 studies included in their final analyses, seven provided positive evidence that

SBMI improved targeted outcomes, with one study yielding neutral results. Among the studies

yielding positive outcomes, randomized control trials were the most common research designs

utilized (Strait et al., 2012; Terry et al., 2013, 2014), followed by case studies (Atkinson &

Woods, 2003; Cryer & Atkinson, 2015; Kittles & Atkinson, 2009). In regard to outcomes

measured in the best evidence studies, there were two main areas in which SBMI was found to have positive effects: disaffection (i.e., students with emotional, behavioral, and/or attendance concerns) and academic achievement. The majority of the best evidence studies included middle and high school students as participants, although one study showed that MI could be adapted for use among elementary school students (Cryer & Atkinson, 2015). The length of MI sessions within each study ranged from a single session to 10 weeks of weekly sessions of MI. A promising finding highlighted by the authors was that even studies using only a single session of MI were found to have promising results. Interventionists among the best evidence studies ranged from school psychology interns, to researchers, to paraprofessionals or staff without counseling backgrounds.

Since the publication of that review, other studies have appeared in the literature that describe and report initial findings of acceptability and efficacy for SBMI interventions with adolescents. Case in point, Iachini, Rogelberg, Terry, and Lutz (2016) conducted a pilot study of the feasibility and acceptability of a 9-lesson, MI-based early intervention program (i.e., *The Aspire Program*) to prevent the drop out of students (*N*= 13, 15-17 years old) repeating the ninth grade. The Aspire Program utilizes motivational interviewing, along with social/emotional skill instruction, with the goal of supporting students repeating the 9th grade develop social/emotional and academic competence, establish connections to the school and to the interventionist (school social work trainees), and experience academic autonomy (Iachini et al., 2016). Following the 9-session Aspire curriculum, students reported that the intervention was highly acceptable, and 9 out of 13 students ultimately remained in school. Several students reported that they improved several skills as a result of the Aspire Program, including study/organizational skills, interpersonal communication, and behavioral control at school. These findings further provide

evidence that SBMI interventions show promise as an acceptable and feasible intervention approach to support the social/emotional well-being of vulnerable high school students. However, the extent of the relationship between SBMI interventions and students' level of goal attainment, as well as factors that influence this relationship, are still mostly unknown.

Strait, Lee, McQuillin, Terry, Cebada, and Strait (2017) evaluated the effectiveness of a MI-based selective intervention (i.e., *The Student Checkup;* Strait, 2018; see https://studentcheckup.org for the most recent iteration of the manual), implemented by school-based paraprofessionals and volunteers, to support the academic and social/emotional well-being of middle school students (N= 88, 6th-8th grade students). The Student Checkup, initially tested in 2011 by Strait and colleagues (then called "Report Card Coaching"), is a semi-structured SBMI intervention that involves four distinct phases delivered over 1-2 sessions: 1) introduction phase; 2) student self-assessment and normative feedback phase; 3) summary and individualized feedback phase; and 4) development of change plan phase. Although prior studies evaluating the effectiveness of the Student Checkup, when implemented by a trained school or clinical psychology graduate student or research associate, yielded positive academic outcomes among middle school students (e.g., Strait et al., 2012; Terry et al., 2013), this study found no difference in post-treatment grades when comparing intervention and control conditions. These findings suggest that the level of interventionist training in MI may play a role in the effectiveness of SBMI interventions. Although these findings shed light on potential factors impacting the effectiveness of a specific SBMI intervention among middle school students, additional research examining factors influencing outcomes related to SBMI interventions among AP/IB high school students is needed.

Terry, Weist, Strait, and Miller (2020) conducted a school-based randomized controlled trial in which adolescent students ($N= 43$, 6th-8th grade) were randomly assigned to a MI-based selective prevention program (i.e., *Footprints*) or a waitlist control group. Footprints (developed by Terry et al. is a semi-structured, 8-session intervention described as an "integrated selective prevention program employing MI and modular CBT in the school setting to overcome risk factors and enhance protective factors in at-risk youth" (Terry et al., p. 2). Students randomly assigned to the Footprints intervention received two one-on-one MI sessions (approximately 40 minutes each) that were integrated with 6 group-based CBT sessions. The MI approach in this study mirrored the aforementioned Student Checkup, whereby students developed individualized change plans aimed at helping them achieve a self-reported academic or behavioral goal. The Footprints program was rated as feasible and highly acceptable by students and interventionists. Compared to students in the waitlist control condition, participants receiving the Footprints program demonstrated favorable outcomes in several social/emotional and academic domains (e.g., math grades, academic motivation, positive expectations for learning, and self-reported functioning in academic and behavioral domains). This study provided preliminary evidence demonstrating the acceptability, feasibility, and effectiveness of a MI-based prevention program that integrates students' individualized goal setting with group-based CBT skill instruction. This indicates promise for SBMI to be used as an adjunctive approach to selective interventions in high schools; however, further research of the use of SBMI interventions among AP/IB students in particular is needed. Taken together, although research examining the effectiveness of SBMI is still in its infancy, there is promising evidence that SBMI is an effective intervention to increase students' social/emotional and academic well-being in as little as 1-2 sessions. In fact, recent research by O'Brennan et al. (2020) and Suldo et al. (2021) have described the

development of a new SBMI intervention (the Motivation, Assessment, and Planning [MAP]

intervention), which has shown promise as an acceptable selective intervention that can be

tailored to fit the needs of at-risk AP/IB students in particular.

Motivation, Assessment, and Planning (MAP) Intervention. As discussed in previous

sections, Suldo and colleagues iteratively developed and tested a universal SEL program (i.e., the

ACE Program; Shaunessy-Dedrick et al., 2021) as well as a companion Tier 2 intervention (i.e.,

MAP intervention; O'Brennan et al., 2020; Suldo et al., 2021) aimed at providing multi-tiered

supports for AP/IB students. MAP is a brief (1-2 session) Tier 2 intervention, grounded in MI

processes and skills, intended to provide additional one-on-one support to AP/IB students

exhibiting indicators of academic and/or emotional distress following the universal ACE

program. Screening procedures, detailed in Suldo et al. (2019), were also developed to identify

students as potentially experiencing academic and/or emotional risk. These procedures will be

further described in the methods section of the present study. For these at-risk students invited to

participate in MAP, the overall purpose is to help them: 1) examine their current use of coping

and engagement skills compared to academically/emotionally successful students; 2) determine

areas that would benefit from behavioral change (e.g., increasing use of time and task

management skills in times of stress); and 3) create an action plan to follow through with

behavior change goals. As detailed in O'Brennan et al. (2020) and Suldo et al. (2021), AP/IB

students who participate in the MAP intervention experienced up to four contacts with their

assigned MAP interventionist (called "MAP coaches"): the pre-MAP assessment, MAP Meeting

One, delivery of a reminder letter, and MAP Meeting Two. The following intervention materials

utilized in Suldo et al. (2021), as well as the present study (which involves secondary analysis of

the archival dataset first examined in Suldo et al., 2021) are included in the appendices: the IRB-

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approved parent consent form (Appendix A), the IRB-approved student assent form (Appendix B), blank and sample student graphs used for MAP feedback (Appendix C, D), student handouts for MAP Meetings (Appendix E, F), and the MAP Meeting Reminder Letter (Appendix G).

        Pre-MAP Assessment. Before students met with their MAP coach for MAP Meeting One, they were first required to complete the *pre-MAP assessment*. During this initial contact, students met with their MAP coach either individually or small groups with other MAP participants and, following their verbal assent, completed the 12-page pencil-and-paper questionnaire. This questionnaire assessed students' strengths, values, and goals, their use of effective and non-effective coping behaviors, feelings of eustress (i.e., facilitative stress), engagement factors, and family factors (see O'Brennan et al., 2020, for details). Following students' completion of the questionnaire, MAP coaches enter each student's ratings into a computerized scoring system that yields an individualized score report and T-scores for each student within several domains. These domains include: 1) effective coping styles (e.g., use of relaxation strategies, seeking academic support, etc.); 2) ineffective coping styles (e.g., avoidance behaviors such as taking naps or skipping school, etc.); 3) feelings of eustress; 4) achievement motivation and school engagement (e.g., frequency/intensity of participation in extracurricular activities, feelings towards school/program, etc.); and 5) home factors (e.g., perceived emotional support and promotion of independence by parents). This individualized score report includes a graph that is printed and utilized during MAP Meeting One and Two (a blank and de-identified student version of this graph can be found in Appendix C and D).

        MAP Meeting One. MAP Meeting One consists of an individual face-to-face meeting between the MAP coach and students during a single class or study hall period. During this meeting, students are re-oriented to the purpose of the MAP intervention and led through the

MAP Meeting One Protocol. Aligned with stages of MI described by Miller and Rollnick (2013) and detailed in previous sections, these four stages include: 1) *Engage* (approximately 10-15 minutes; MAP coaches learn more about students' strengths, values, and goals following high school); 2) *Focus* (approximately 20-25 minutes; students review their individualized graph, discrepancy is developed between current behaviors and goal behaviors); 3) *Evoke* (approximately 5 minutes; MAP coach evokes from students their desires, ability, reasons, and need for the target behavior change goal; and 4) *Plan (*approximately 10-15 minutes; action plan to implement behavior change is collaboratively developed). During these four phases of MAP Meeting One, students and MAP coaches work collaboratively to select a target (e.g., increase use of time and task management strategies), brainstorm methods for making improvements towards target goal (e.g., use a daily planner to keep track of assignments), and develop a step-by-step action plan (e.g., purchasing a planner tomorrow). In the final stage of the meeting, students are asked to show commitment to their action plan by signing a behavior contract. Students are then invited to schedule an optional MAP Meeting Two. Students who opt in to receive a reminder letter (described below) prior to participating in MAP Meeting Two.

        Reminder letter (optional). Between MAP Meeting One and MAP Meeting Two (approximately 1 month), MAP coaches discretely hand-deliver a brief letter that provides students with a summary of the behavioral change plan developed during MAP Meeting One, evocative questions for students to use for self-reflection, and an expression of enthusiasm for the upcoming meeting (see Appendix G).

        MAP Meeting Two (optional). Procedures for MAP Meeting Two closely mirror procedures from MAP Meeting One. Students and MAP coaches meet face-to-face during a single class or study hall period. During this meeting, students are re-oriented to the purpose of

the MAP intervention and led through the MAP Meeting Two Protocol. During the "engage"

stage of the meeting, students and their MAP coach reviewed the progress they made towards the

goal they created during MAP Meeting One. During the "focus" stage of the intervention,

students are given the following options depending on the progress they made towards their

original goal: 1) keep the current target and revise the action plan they created during MAP

Meeting One; 2) select a new target and create a new change plan; or 3) discontinue the meeting

without additional planning. MAP coaches then lead students through the remainder of the

intervention protocol according to the option selected by the student. At the end of the meeting,

MAP coaches offer and/or provide additional supports to students as needed (e.g., referrals to

school-based mental health providers for students reporting significant distress; student handouts

from the universal ACE Program, etc.).

Applicability and acceptability of MAP Intervention. In an initial pilot study of MAP

with 49 students in two schools, O'Brennan et al. (2020) examined the applicability and

acceptability of MAP as a Tier 2 intervention for at-risk AP/IB students entering the second half

of their 9th grade year. To this aim, quantitative and qualitative data were collected from AP/IB

students (n= 49), MAP coaches (n= 7), and school-based mental health professionals (i.e.,

potential end-users; n= 3). According to these data, MAP was determined to be an acceptable,

developmentally appropriate Tier 2 intervention with applicability in high school settings

(O'Brennan et al., 2020). In a follow-up study that further investigated the applicability and

acceptability of a refined version of the MAP intervention among a new, larger sample of AP/IB

youth (N= 121) from eight AP or IB programs in seven schools, Suldo et al. (2021) examined

quantitative and qualitative data from AP/IB students (n= 121), MAP coaches (n= 7), and

school-based mental health professionals (n= 12) following implementation of MAP during the

spring of 2018. Data utilized in this follow-up study of MAP were collected as part of a randomized controlled trial of the ACE program during the 2017-2018 school year and represent the same dataset that was examined in the present study. As described in further detail in the procedures section of this document, students were randomly assigned to the ACE program during fall 2017 (n= 351) and were administered a brief screening assessment at mid-year (n= 332). Students who were identified as demonstrating emotional and/or academic risk factors were invited to participate in MAP during early spring 2018. Six peer leaders were also invited to participate in MAP in order to reduce stigma associated with seeking additional selective supports. Students, coaches, and school-based mental health providers provided ratings of their perceptions of MAP acceptability (described further in Suldo et al., 2021).

In regard to the applicability of MAP, the average length of MAP Meeting One and Two was 51.3 and 33.7 minutes, respectively. Fidelity of MAP implementation for this iteration, based on review of audio-recorded sessions using the research-developed fidelity form, was considered high (>85%). During the *focus* stage of MAP Meeting One, when students are encouraged to select a target of behavioral change aligned with the ACE program, the most popular target selected was to increase active coping through time and task management (n = 35). Other popular targets selected by students included: increasing effort on schoolwork (n = 15), increasing use of positive thinking skills (n = 13), seeking increased academic support (n = 8), reducing tendency to withdraw/rely on self (n = 6), decreasing tendency to take short cuts at school (n = 6), increasing frequency of turning to family (n = 4), decreasing frequency of skipping school (n = 4), and increasing positive relationships with AP/IB teachers (n = 4). During the focus stage of MAP Meeting Two (n= 114), approximately 41% of students chose to terminate the meeting without action planning further, 33% chose to create an action plan for a

new target, and 25% chose to keep the same target from MAP Meeting One. For students who chose a new target for MAP Meeting Two, the most popular target was time and task management ($n= 22$), followed by increasing effort on schoolwork ($n = 12$), increasing extracurricular activity involvement ($n = 6$), and increasing positive thinking ($n = 5$). Several students during both MAP Meetings chose targets that were not reflected in the aforementioned MAP graph (e.g., earn a particular course grade, complete a particular assignment). Notably, MAP coaches (university-based research staff) encouraged a total of 16 students to reach out to their respective school-based mental health providers for more intensive supports given their self-reported or observed symptoms of psychological distress.

In regard to acceptability of the MAP intervention, Suldo et al. (2021) collected and analyzed data from 120 students (out of 121 total participants) for MAP Meeting One and from the 114 students that returned for MAP Meeting Two. Students answered several questions relating to the usefulness (e.g., "This meeting was effective in helping me develop an action plan of strategies to help me reach my short and long term goals"), understandability (e.g., "The data and graph used in the meeting were easy to understand"), and comfortability (e.g., "I felt comfortable during the meeting") of MAP. With the exception of one item on the student acceptability measure (i.e., "It would be helpful to meet again or more often with an ACE coach"), the average quantitative ratings were higher than 4 out of 5 ("4" = Agree). Suldo et al. noted that this slightly lower average rating regarding the perceived need to meet again with a MAP coach is aligned with the intent of MAP as a brief, time-limited intervention for youth. Qualitative data collected from students also yielded several themes relating to the acceptability of MAP. Among students, the portions of MAP Meeting One and Two that were most frequently reported as the most helpful included the action planning process (approximately 42% and 39%

of students, respectively). Students reported the individualized feedback graph as particularly helpful for MAP Meeting One (approximately 39% of students), and the process of reflecting on their progress towards goals for MAP Meeting Two (approximately 22% of students). Although relatively few students had recommendations for change to the MAP intervention, the most common recommendation related to the duration of meetings (five students wanted the intervention to be shorter, one wanted it to be longer). Additional remarks provided by students were all positive appraisals of the intervention process and their MAP coach.

MAP coaches (*n*= 7) also rated the MAP intervention as highly acceptable on all the three indices measured (acceptability for *MAP Meeting One*, *Progress since MAP Meeting One*, and *MAP Meeting Two*), with average acceptability ratings greater than 4 out of 5 ("4" = Agree). Qualitative data collected from MAP coaches also yielded many themes. When asked what aspect of MAP Meeting One coaches felt was the most favorable, the most common response related to students' readiness to engage in behavioral change as evidenced by the frequency of change talk noted (approximately 26% of students served), followed by discussions of students' strengths/values/goals during Engage (approximately 17% of students served). For MAP Meeting Two, MAP coaches most frequently noted that the most favorable aspect of the intervention was the progress students made towards their goal (approximately 45% of students). When asked what about MAP Meeting One and Two they would change, coaches most often indicated that they encountered no challenges (~16% and 28%, respectively). In some cases, coaches reported student reluctance to engage in the intervention, students' frequent "sustain talk" and/or low confidence in their ability change, and time constraints for implementation. Coaches also noted a challenge with balancing promoting student autonomy with a personal desire for the student to further improve coping/engagement skills during MAP Meeting Two.

School mental health providers ($n = 12$), who represent the perspectives of potential end-users of the MAP intervention, also rated MAP as highly acceptable, with all average acceptability ratings yielding scores higher than 4 out of 5 ("4" = Agree). Qualitative data collected from school mental health providers indicated that MAP was perceived as useful as a brief and potentially effective support for AP/IB students at-risk for emotional or academic problems. Many providers reportedly liked the student-centered and collaborative nature of MAP.

Taken together, quantitative and qualitative data collected from students, MAP coaches, and school-based mental health providers (potential end-users of MAP) indicated that both MAP meetings were highly acceptable to support the social/emotional needs of at-risk AP/IB students, as well as highly applicable for school-based settings. In their article on linking mental health screening to Tier 2 interventions in schools, Moore et al. (2019) stated, "It is critically important that any intervention be acceptable to the consumers, which in the schools means that it is acceptable to administrators, teachers, students, and their families; aligned with school schedules; addresses significant concerns; and resource efficient" (p. 279). Thus, Suldo et al.'s research provides important information about the potential of MAP as a selective intervention for AP/IB students, and also replicates prior findings from O'Brennan et al. (2020) with a larger sample. However, additional research evaluating the effectiveness of MAP to improve proximal outcomes (e.g., goal attainment) and distal outcomes (e.g., overall emotional and academic well-being) is still needed. Further research is also needed to identify potential predictor variables, or "active ingredients," of MAP (e.g., level of therapeutic alliance, student characteristics such as gender and level of academic/emotional risk). The present study further explored and analyzed data described in Suldo et al. (2021) to address some of these gaps in the literature. Table 2 presents an overview of processes, MI strategies, and intervention objectives for MAP.

Table 2

Table Adapted with Permission from Suldo et al. (2021): Overview of Activities, Strategies, and Objectives for MAP Meetings One and Two

Stage	MAP Meeting One	MAP Meeting Two

1: Engage	1. Introduce student to coach and meeting purpose.
	2. Discuss student's values as identified through a personal value card sort activity (Miller, Baca, Matthews, & Wilbourne, 2001), strengths as identified through the VIA Character Strengths survey (McGrath, 2019), and goals for the future.
	    ○ *I'd like to get to know your values, personal strengths, and goals for the future. What are the most important things in your life right now?*
	3. Summarize, affirm, and ask open-ended questions making the connection between a student's goals, values, strengths, and current performance in AP/IB classes.
	    ○ *How does being successful in AP/IB classes- both academically and emotionally- fit in with your goals and values?*
	    ○ *Your strength of kindness comes through in your motivations for connecting with your IB classmates. What valuable assets you bring to new relationships!*
		1. Re-introduction to coach, meeting purpose, and reaffirm strengths, values, and hopes for future.
		2. Elicit student memory about Meeting One
		    ○ *Making a list of your upcoming assignment is something you identified as important. Why did you think using a planner would be helpful?*
		3. Discuss current progress towards target/goal
		    ○ *Tell me about any steps you've taken so far to improve your sleep habits?*
		    ○ *Since you started making progress on your plan, what changes (academic or emotional) have you seen in yourself?*
		4. Summarize understanding of student's current progress toward goals
		    ○ *You continue to use your strength of perseverance to help you reach your goal of getting into college. When we last met you set a goal of becoming involved in 3 extracurricular activities, however, this was complicated by transportation issues. I commend you for starting the process and acknowledging the setbacks you've faced.*

Table 2 (Continued)

Stage	MAP Meeting One	MAP Meeting Two

2: Focus	1. Elicit student knowledge of areas related to academic and emotional success based on universal SEL curriculum.
	   o *You've worked a good deal during the ACE modules on the areas related to academic and emotional success. What was the most helpful thing you learned in the ACE Program modules?*
	2. Orient student to norm-referenced feedback graph by first presenting a base graph (without scares) and then reviewing their personalized graph.
	   o *You recently completed a 12-page survey packet [pre-MAP assessment]. How might seeing your levels of engagement and coping compared to students who are academically and emotionally successful be helpful?*
	3. Develop discrepancy between student's weaknesses and personal goals.
	   o *How would improvements in relaxation as a coping strategy be in line with the goals and values you shared with me earlier?*
	4. Agenda map and prioritize area(s) of change
	   o *I'm with you on this and think that your goal of increasing your attendance is an area that we can work on together.*
		1. Help student decide to retain target or select new target.
		   o *Given your progress towards your original goal, you have several options for how we spend the rest of this period: (1) stop the session, (2) work together to pick a new goal, or (3) keep the same goal but modify the plan we created.*
		2. Revisit student's individualized graph (score report) if applicable.

3: Evoke	1. Pose evocative questions to elicit change talk.
	   o *What are the three best reasons for making a change to your time management skills?*
	2. Reinforce any change talk with OARS.
	   o *What would that look like if you started planning out your schedule?*
	   o *Wow, I can tell you really thought about this. When you set your mind to something, it's really going to happen!*
		1. Pose evocative questions and elicit and reinforce change talk.
		   o *You seem really discouraged right now. How would you like for things to change?*
		   o *How do you feel when you think about meeting your goal and this change working out well?*
		2. Following a sufficient amount of change talk use the importance ruler.
		   o *On a scale of 1-10, how important is it for you to [target behavior] and succeed in your AP class?*

Table 2 (Continued)

Stage	MAP Meeting One	MAP Meeting Two

4:
Plan
	1. Collaboratively brainstorm strategies using Problem-Solving Process in Action form.
	   o *How do you feel about us working together to create an action plan for those factors you noted you might want to maintain or improve?*
	   o *What has helped in the past to address that behavior?*
	2. Create an action plan that specifies action steps, supports needed, and a timeline.
	   o *How will you know if success in that area occurs?*
	   o *When could you do that? What would you start with?*
	3. Increase hope and confidence.
	   o *Tell me more how you were able to succeed/try [prior change, success, or effort].*
		1. Elicit and reinforce change talk regarding new/revised plan and help the student brainstorm strategies for meeting goal
		   o *Given what you know now, let's discuss what revisions you would like to make to your original action plan.*
		   o *What has helped in the past to address that behavior?*
		2. Create an action plan that specifies action steps, supports needed, and a timeline while increasing hope and confidence in change.
		   o *You came up with some great ideas! Among the ideas you generated, what would you like to try out?*
		   o *What were some things that were out of your control that got in the way of progress after our first meeting?*
		3. Terminate relationship and plan for further supports if applicable
		   o *I have complete faith that you will continue to use the problem-solving process you've mastered in these meetings to continue coping with stress. If you find yourself needing to talk privately about how things are going, what adults might you turn to for support at school?*

Materials Needed	• MAP Meeting One: Intervention Protocol • Individual Graph – Student and Coach View • Base Graph • Student Success Planning Form • Colored pencils or markers (red, yellow, green) • Completed pre-MAP assessment • ACE student program handouts • Reminder Letter (1 month following MAP Meeting One)	• Intervention Protocol • Individual Graph – Student and Coach View • Student Success Planning Form • Progress towards MAP Goal • ACE student program handouts

Rationale for Goal Attainment as Proximal Outcome Measure of SBMI Interventions

Given existing literature identifying specific factors (e.g., active coping strategies, school engagement) that predict the overall academic/emotional well-being of AP/IB students (Suldo et al., 2018), it is logical to consider behavioral changes aligned with these predictors as proximal indicators of positive outcomes for AP/IB youth. Moreover, a key aspect of SBMI interventions is for students to accomplish behavioral change goals identified by students during MI session(s) (Lewis, Larson, & Korcuska, 2017). Existing literature examining the effectiveness of SBMI interventions have utilized a wide range of outcome variables, including academic skills (e.g., study/organizational skills), academic functioning (e.g., GPA, academic motivation), and social/emotional functioning (e.g., interpersonal skills, behavioral control at school). However, outcome variables that assess distal changes in functioning can miss small or nuanced changes in behavior or functioning that may serve as proximal indicators of future success. This issue is exacerbated when considering indicators of positive proximal or distal outcomes of MI in school settings compared to clinical settings. Most MI intervention research to date has occurred within populations and contexts that have clearly defined targets of intervention (e.g., reducing substance use, increasing medication adherence, etc.). In these contexts, indicators of positive responses to MI are easier to measure (e.g., total number of drinks consumed per week) compared to nuanced social/emotional indicators of functioning in school contexts. In the school setting, students may be identified for additional supports based on social/emotional/academic risk, but there is a wide range of potential behavioral change targets that could improve students' functioning (e.g., increasing active coping, reducing avoidance, extracurricular activity involvement; Suldo et al., 2018). This presents a challenge in the measurement of SBMI outcomes and provides rationale for the use of a general outcome measure that captures the

degree to which students achieve the change goals developed during MI session(s). In general counseling relationships, the incremental steps made by clients towards behavioral change goals is an indicator of an effective counseling approach. Thus, although the current use of measures of goal attainment in various MI contexts is relatively rare (Lewis, Larson, & Korcuska, 2017), this outcome measure demonstrates promise as a valid and efficient indicator of positive outcomes in the context of SBMI interventions. For MAP, students' self-reported progress towards completing their action plan (developed during the "plan" stage of the meeting to increase use of effective coping/engagement skills identified during the "focus" stage") represents an indicator of their future academic/emotional well-being.

Potentially Salient Mechanisms Influencing Students' Response to MAP

Consistent with findings from Snape and Atkinson (2016), Strait, McQuillin, Smith, and Englund (2012) stated in their review of developmental issues relating to MI interventions among youth, "Given the vast majority of cognitive processes are developed or are reaching full maturation by the age of 12, it is reasonable to consider MI as a potential school-based mental health intervention for middle and high school students" (p. 301). However, they noted the need for additional research examining the specific mechanisms of action of MI, given that this information could provide valuable knowledge to improve theoretical and practical applications of SBMI. Although there is a dearth of research examining SBMI interventions among AP/IB youth, Miller and Rose (2009) posited that the "active ingredients" (or mechanisms of change) of MI generally fall into two broad categories: a technical component (e.g., interventionists' ability to cultivate clients' change talk and soften their sustain talk) and a relational component (e.g., therapeutic alliance, adhering to the *spirit of MI*). Miller and Moyers (2017) noted that "explanations for the effectiveness of MI focus on specific behaviors of interviewers that are

especially consistent with this approach (e.g., emphasizing autonomy, seeking collaboration, reflecting change talk) and that quickly increase the probability of change talk (and decrease the probability of sustain talk), which in turn predicts the likelihood of subsequent change" (p. 760). Arkowitz, Westra, Miller, and Rollnick (2008) expanded on this model, positing that the key causal processes within MI-based interventions fall into three categories (or "processes"), including technical processes (MI-adherent skills of interventionists), relational processes (therapeutic relationship), and conflict resolution processes (exploration and resolution of client ambivalence).

Research among clinical samples of youth and adults has also shed light on factors that predict how well individuals respond to MI interventions. For example, Copeland, McNamara, Kelson, and Simpson (2015) published a systematic review of reported "mechanisms of change" within the context of MI as an intervention for health behaviors (e.g., weight, BMI, diet, self-care, etc.), and found that "MI spirit" (defined as therapist behaviors promoting collaboration, autonomy, and evoking change talk) was the most salient predictor of improved health outcomes. However, they noted that "quality and lack of research evidence" made it challenging to draw firm conclusions regarding the key ingredients of MI and thus additional research is warranted. This gap in empirical studies is further widened when considering the unique process factors within MI interventions in educational contexts in particular (Snape & Atkinson, 2016). To address this gap in the literature, the present study examined several factors that may potentially influence students' level of goal attainment following MAP Meeting One: 1) students' level of academic and emotional risk (GPA, perceived stress, school satisfaction); 2) students' gender; 3) students' and MAP coaches' ratings of therapeutic alliance; and 4) MAP coaches' self-reported perceptions of MI-adherence during MAP Meeting One. In addition, this study examined

whether the presence of dual risk factors (academic *and* emotional risk) versus a single risk factor (academic *or* emotional risk) measured prior to MAP Meeting One predicted AP/IB students' goal attainment assessed during MAP Meeting Two. Rationale for the inclusion of these potential predictor variables are provided in the paragraphs below.

MI-adherent skills of MAP coaches. MAP coaches perceived MI-adherence during MAP Meeting One (e.g., perceived ability to strategically utilize OARS to cultivate change talk and soften sustain talk) was selected as a predictor because of empirical research to date demonstrating a strong link between technical process factors and increases in client change talk – an important proximal indicator of a positive response to MI (Magill et al., 2014, 2018; Romano & Peters, 2016; Pace et al., 2017). In their review, Miller and Moyer (2017) argued that clinician's adherence to technical MI skills reliably predicts the frequency and strength of clients' change talk, whereas MI-incongruent clinician behaviors (e.g., giving advice, confrontation, persuasion) have been associated with increased client sustain talk (Borsari et al., 2015; Gaume et al., 2010; Hodgins, Ching, & McEwen, 2009; Magill et al., 2016). For instance, Glynn and Moyers (2010) found that clinicians' technical MI skills were directly associated with the frequency of clients' change talk. A randomized controlled study by Moyers, Houck, Glynn, Hallgren, and Manuel (2017) found that MI clinicians trained in nuanced MI-consistent technical skills (compared to generic MI OARS skills) were more likely to have less sustain talk from clients. These findings indicate that not only are the nuanced technical skills involved in MI (i.e., strategically using OARS to cultivate change talk and soften sustain talk) important for increasing change talk among clients, but that the type of MI training received by clinicians influences the effectiveness of MI interventions.

Therapeutic alliance. Therapeutic alliance is a potentially salient mechanism influencing students' response to MI, given that MI is based on person-centered principles (e.g., Carl Rogers), and values therapeutic alliance at its core (Miller & Rollnick, 2012). The relational component of the aforementioned Miller and Rose (2009) causal theory of MI posits that a strong therapeutic alliance helps to promote clients' change talk and ultimately leads to positive behavior change. Therapeutic alliance represents three dimensions: the degree to which there is collaboration between therapist and client, the affective bond between therapist and client, and the ability for therapist and client to agree on treatment goals and tasks (Norcross, 2011). Therapeutic alliance has been consistently linked to positive student outcomes in a variety of intervention studies among diverse clinical and school-based samples. Norcross (2011) compiled over twenty different meta-analyses examining therapeutic alliance and intervention outcomes, which yielded a series of useful research-supported conclusions regarding the therapeutic alliance: 1) the therapeutic alliance significantly improves outcomes in all types of psychotherapy; 2) the therapeutic alliance accounts for treatment outcomes as much as the particular treatment method utilized; 3) intervention guidelines and protocols should include recommended therapist qualities and behaviors that promote the therapy alliance; and 4) interventionists should conduct ongoing progress monitoring of patients' perceptions of the therapeutic alliance.

The aforementioned systematic review by Copeland et al. (2015) found that therapeutic alliance was cited as a potential mechanism of change in MI intervention contexts. A study included in their review (Treasure et al., 1998) identified task agreement between the therapist and the client (rated at week 4 of a motivational enhancement therapy) as related to reduced vomiting and binge eating among females with bulimia nervosa. Wiprovnick, Kuerbis, and

Morgenstern (2015) also found that client ratings of therapeutic alliance predicted the outcomes (decreased alcohol use) among an adult sample (*N*= 59) receiving a 4-session MI-based intervention for substance use. In contrast, another study examining an MI-based intervention for substance use provided evidence of a quadratic relationship between therapeutic alliance and substance use in which clients had better substance use outcomes when alliance was rated closer to the mean rather than higher or lower than the mean (Crits-Christoph et al., 2009). Other relational factors, such as MI clinician's expression of empathy, have also been associated with improved within-session client factors (e.g., increased collaboration and engagement; Moyers, Miller, & Hendrickson, 2005) as well as intended outcome variables (e.g., decreased alcohol use; Gaume, Gmel, Faouzi, & Daeppen, 2009).

Research also suggests a relationship exists between technical factors (e.g., using OARS to evoke change talk and/or soften talk) and therapeutic alliance. For instance, higher ratings of MI-technical skills predicted higher ratings of therapeutic alliance among adult nicotine users (Boardman et al., 2006). Thus, although there is emerging evidence that both technical and relational factors (including therapeutic alliance) are important process mechanisms across many MI contexts, there is still much that is unknown about how these factors work together to improve outcomes. To date, there are currently no published studies of SBMI interventions that have evaluated the influence of therapeutic alliance on proximal or distal student outcomes. Thus, research examining the influence of therapeutic alliance on MI outcomes in educational settings is warranted.

Although therapeutic alliance has been identified as a consistent predictor of therapeutic outcomes, *when* therapeutic alliance is assessed in the context of the therapeutic relationship has also been identified as a moderator of this relationship (with earlier measures of alliance

generally correlating with weaker associations with treatment outcomes; Flückiger et al., 2018).

However, recent research by van Benthem et al. (2020) found that youth and client-reported therapeutic alliance during just the first session of treatment (median treatment length and session count = 6 months, 7 sessions) had medium and robust association with youths' treatment outcomes (indicated by a total score of <12.5 on the Strengths and Difficulties Questionnaire; Goodman, 1997). They also found that combining youth and clinician-reported therapeutic alliance yielded a stronger predictor of outcomes (measured at 4 months post-treatment) when compared to clinician or youth ratings alone. Findings from this study provides strong support for the predictive power of assessing therapeutic alliance in the early stages of a therapeutic relationship (i.e., during the first session), and some support for utilizing a combined measure of therapeutic alliance that includes student and interventionist perspectives (van Benthem et al., 2020).

However, the positive correlation between youth client and adult counselor perspectives on the alliance is generally small to moderate in magnitude (Bickman et al., 2012; Creed & Kendall, 2005; Hawley & Garland, 2008). In a study investigating the impact of client-therapist alliance discrepancies on psychotherapy treatment outcomes among youth with anxiety, Zandberg, Skriner, and Chu (2015) identified significant discrepancies between youth and therapist alliance ratings across several time-points (although differences did not appear to affect associations with treatment outcomes). In the adult psychotherapy literature, various studies have also identified client- and therapist-rated alliance correlations in the low to moderate range (e.g., $r = .07$ to $.43$; Hersoug, Monsen, Havik, & Høglend, 2002; Langhoff, Baer, Zubraegel, & Linden, 2008; Meier & Donmall, 2006; Tryon et al., 2007). In most studies, therapists' alliance ratings tended to be lower than client ratings (Tryon et al., 2007). Further, some research

suggests that youth-reported alliance (vs. parent- or therapist-reported alliance) has stronger predictive power for therapeutic treatment outcomes (Hawley & Garland, 2008). For example, Hawley and Garland (2008) examined relationships between youth, parent, and therapist alliance ratings and outpatient therapy outcomes and found that youth perspectives of alliance predicted several domains of positive therapeutic outcomes (e.g., decreased symptoms, improved family relationships, increased self-esteem, and higher levels of social support and satisfaction with therapy). In contrast, both parent and therapist ratings of alliance were associated with few outcomes, with significant findings limited to mostly *within* rater outcome measures (i.e., therapist-rated alliance associated with therapist-rated outcomes). As Hawley and Garland (2008) pointed out in their discussion:

> This finding is consistent with at least one other youth study which found youth-therapist alliance more strongly related to outcomes than parent-therapist alliance (Hawley & Weisz, 2005), and some research with adults indicating that the client's own perspective of the alliance (versus therapist or observer) may be most predictive of outcome (Horvath & Symonds, 1991). (p. 70)

Given the overall paucity of existing literature examining alliance discrepancies and therapeutic outcomes (particularly in MI intervention contexts), along with some research demonstrating differential outcomes based on youth vs. therapist alliance perspectives, the current study examined student and MAP coach perspectives on alliance separately—rather than creating a combined indicator—in part to avoid masking the potential importance of a given perspective in predicting goal attainment.

Presence and level of academic/emotional risk. The extent of emotional and/or academic risk exhibited by AP/IB students selected to receive the MAP intervention was selected

as a potential predictor of outcomes (goal attainment) given that this helps identify the type of AP/IB students that would benefit most from the MAP intervention. As detailed in Suldo et al. (2019), the presence of emotional and/or academic risk was determined based on previously established screening procedures. For the present study, students were identified as emotionally at-risk if they self-reported high levels of perceived stress or low levels of school satisfaction (specific thresholds and cut-scores are described in prior sections). Students were identified as exhibiting academic risk if they had a GPA lower than 3.0 or a specific AP/IB course grade lower than a C. In addition, six students who did not meet either criterion for emotional or academic risk were also invited to participate in MAP as peer leaders, with a total of five peer leaders returning for MAP Meeting Two. For the present study, risk was operationalized in two ways. First, scores on screening measures were examined as continuous predictor variables to determine whether the presence and level of academic and emotional risk predicted AP/IB students' self-reported level of goal attainment assessed during MAP Meeting Two. Second, this study examined whether the presence of dual risk factors (emotional *and* academic risk) versus single risk factors (emotional or academic risk) predicted AP/IB students' goal attainment assessed during MAP Meeting Two. As such, following the initial examination of academic/emotional risk as separate continuous predictor variables, a dichotomous variable was created to represent students who experienced emotional *or* academic risk (dual risk= "0") or academic *and* emotional risk (dual risk= "1"). The peer leaders ($n = 5$) were removed from this analysis as they did not fall into either risk group of interest (single risk vs. dual risk).

To date, research suggests that the characteristics of presenting mental health symptoms (e.g., symptom severity, presence of comorbid risk factors) plays a significant role in predicting individuals' response to psychological interventions (e.g., cognitive behavioral therapy). For

example, Amati, Banks, Greenfield, and Green (2018) conducted a systematic review to identify

common factors that may or may not predict psychological treatment outcomes in community

care settings. They found that pre-treatment symptom severity, as well as the presence of

comorbid mental health disorders, were the most reliable factors that predicted individuals'

response to community-based psychological treatment (Amati et al., 2018). Moreover, in a large-

scale, multi-site international study of genetic, clinical, and demographic predictors of response

to cognitive behavioral therapy for pediatric anxiety disorders, Hudson et al. (2015) found that

the presence of comorbid conditions (including mood disorders and/or externalizing disorders)

predicted a poorer response to treatment. Both of these studies provide some evidence that the

type of risk (e.g., symptom severity and comorbid mental health disorders) plays a role in the

treatment outcomes of diverse samples receiving diverse psychological treatments.

Within the MI literature, Lundahl and Burke (2009) synthesized four meta-analyses

(Burke et al., 2003; Hettema et al., 2005; Lundahl et al., 2009; Vasilaki et al., 2006) examining

the effectiveness of MI in myriad contexts and found a nonsignificant relationship between pre-

treatment problem severity and MI outcomes in the majority of included studies. However, other

research suggests MI may be more effective among individuals with more severe impairment

due to substance abuse and anxiety (Arkowitz et al., 2008). Although the predictors examined in

these examples are not directly aligned with the specific type of risk evaluated in the present

study, these findings suggest that the presence and/or severity of dual-risk factors (i.e., academic

and emotional risk), may yield different responses to the MAP intervention based on the severity

of academic and/or emotional risk present. Taken together, increasing our understanding of

whether the presences and severity of academic and/or emotional risk factors predict students'

response to MAP is valuable because it offers specific insights into how motivational interviewing interventions for AP/IB students can be better tailored to address their needs.

      Student gender. Student gender was selected as a predictor given this author's goal to explore a comprehensive range of factors potentially influencing MAP intervention outcomes. In their synthesis of four meta-analyses (Burke et al., 2003; Hettema et al., 2005; Lundahl et al., 2009; Vasilaki et al., 2006) examining the effectiveness of MI in myriad contexts, Lundahl and Burke (2009) found that gender was generally unrelated to outcomes (see Lundahl et al., 2009). Moyer et al. (2002) and Vasilaki, Hosier, and Cox (2006) have argued that although gender does not seem to moderate outcomes in studies of MI effectiveness, it is possible that men and women respond differently to various interpersonal intervention styles (e.g., confrontational, collaborative, affirmational, etc.). Moreover, there is some evidence suggesting that gender moderates outcomes in other types of school-based mental health (SBMH) interventions among adolescents, see Friedrich, Raffaele Mendez, and Mihalas (2010) for a review.

      For instance, Kang et al. (2018) examined gender as a treatment outcome moderator in a randomized controlled trial of a school-based mindfulness intervention among a sample of 6th grade students (*N*= 100). Participants were randomly assigned to a treatment (6 weeks of mindfulness meditation in addition to history curriculum) or control condition (history curriculum only), and findings indicated that although the mindfulness training was associated with improved emotional indicators (compared to control group), the effects were moderated by gender. Females in the meditation group had greater improvements in emotional indicators of well-being (e.g., self-reported measures of well-being, affect, and self-compassion) following the intervention period compared to females in the control group. In contrast, males in the meditation group did not statistically differ from males in the control condition. Kang et al. (2018) posited

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that differential responses to interventions by gender may be attributed to the different ways that male and females engage in affect processing, with females being more susceptible to risk factors such as sensitivity to negative stimuli leading to reduced mood; Clark, Watson, & Mineka, 1994), as well as maladaptive coping strategies leading to negative affect (e.g., self-criticism, rumination; Nolen-Hoeksema & Girgus, 1994). This difference in affect and emotion processing may lead to differential outcomes based on intervention (or interventionist) characteristics. Friedrich, Raffaele Mendez, and Mihalas (2010) noted that "the question of whether gender moderates treatment efficacy for many of the SBMH programs developed is clearly understudied and has significant implications for identifying efficacious treatments for boys and girls" (p. 132). Thus, the present study aimed to shed light on the potential effects of gender on proximal outcomes of AP/IB student well-being (i.e., goal attainment).

Summary

Students enrolled in AP courses and IB programs represent a unique group of adolescents given the high demands of their rigorous, college-level coursework and the elevated stress they experience compared to their peers in the general education (Suldo & Shaunessy-Dedrick, 2013; Suldo, Shaunessy, & Hardesty, 2008). These students are often passed over during considerations for extra support as students who are struggling academically or are identified by teachers and staff as exhibiting disruptive behaviors may be prioritized. Many AP/IB students experience high levels of stress despite experiencing academic success (Suldo & Shaunessy-Dedrick, 2013). Aligned with their foundational research (Suldo et al., 2018), Suldo and colleagues iteratively developed and piloted (1) a universal social-emotional learning program to promote factors identified in their foundational research (i.e., the Advancing Coping and Engagement [ACE] Program; Shaunessy-Dedrick et al., 2021); (2) screening procedures to

identify at-risk AP/IB students following implementation of the ACE Program (Suldo, Storey, et al., 2019); and (3) a school-based motivational interviewing intervention aimed at providing Tier 2 supports for AP/IB students demonstrating academic and/or emotional risk (i.e., the Motivation, Assessment, and Planning [MAP] intervention; O'Brennan et al., 2020; Suldo et al., 2021). Preliminary research found that MAP shows promise as an acceptable and time-limited Tier 2 intervention for high achieving high school students (O'Brennan et al., 2020; Suldo et al., 2021).

However, research examining MAP as a Tier 2 intervention among AP/IB students is in its infancy, so additional research evaluating its effectiveness in promoting proximal indicators of student success (i.e., goal attainment aligned with coping/engagement outcomes), including the mechanisms or "active ingredients" of MAP, is warranted. Although theoretical and clinical research has identified several mechanisms of change within various applications of MI (e.g., Copeland, McNamara, Kelson, & Simpson, 2015; Miller & Rose, 2009), it has been noted that an overall low quality of studies included in systematic reviews has made it challenging to draw conclusions regarding the key ingredients of MI. Thus, additional research examining predictors of positive responses to the MAP intervention is warranted. To address this gap in the literature, the present study examined several factors that may influence AP/IB students' level of goal attainment following MAP Meeting One: 1) students' level of academic and emotional risk (GPA, perceived stress, school satisfaction); 2) students' gender; 3) students' and MAP coaches' ratings of therapeutic alliance; and 4) MAP coaches' self-reported perceptions of MI-adherence during MAP Meeting One. This study also examined whether the presence of dual risk factors (academic *and* emotional risk) versus a single risk factor (academic *or* emotional risk) measured prior to MAP Meeting One predicted AP/IB students' goal attainment assessed during MAP

Meeting Two. This information helps to expand on existing literature and provides valuable

information to school psychologists and educational stakeholders seeking recommendations for

brief and effective Tier 2 interventions that can help support their at-risk AP/IB students.

Specifically, findings should help potential end-users of MAP (e.g., school mental health

providers) to better understand the critical process elements within this intervention so that it can

be better tailored to fit the needs of individual AP/IB students.

Chapter III: Methods

Design

  The current study conducted secondary analyses of data obtained from a 2017-2018 randomized control trial (RCT) investigating the efficacy of universal and selective school-based interventions on AP/IB student outcomes, headed by Drs. Shannon Suldo, Elizabeth Shaunessy-Dedrick (supported by a university-based research team that included this researcher). The overarching purpose of the Institute of Education Science (IES)-funded project was to develop and evaluate a comprehensive multi-tiered intervention, including universal and selective intervention components, intended to promote the social/emotional and academic well-being of AP/IB students (Shaunessy-Dedrick et al., 2021; Suldo et al., 2021). The intervention developed for this grant was guided by the foundational research conducted by Suldo and colleagues published in 2018, which identified malleable factors (e.g., active coping strategies, school engagement factors, limiting avoidant behaviors, etc.) associated with student success in terms of academic achievement and emotional well-being (detailed in Suldo et al., 2018). Through their grant-funded research, Suldo and colleagues (including this researcher) iteratively developed and tested a universal social-emotional learning (SEL) program (i.e., the Advancing Coping and Engagement [ACE] Program; Shaunessy-Dedrick et al., 2021), screening methods to identify AP/IB students who are at-risk academically and/or social/emotionally (Suldo et al., 2019), and a targeted intervention for at-risk AP/IB students grounded in motivational interviewing techniques (i.e., the Motivation, Assessment, and Planning [MAP] Intervention; O'Brennan et al., 2020; Suldo et al., 2021).

The purpose of this study was to extend the work by Suldo et al. (2021) that examined the applicability/acceptability of MAP by further exploring the effectiveness of MAP in promoting important proximal indicators of academic/emotional success for AP/IB students (i.e., goal attainment aligned with coping/engagement factors). This study also examined whether the following factors predicted students' level of goal attainment following MAP Meetings One: 1) students' level of academic and emotional risk (GPA, perceived stress, school satisfaction); 2) students' gender; 3) students' and MAP coaches' ratings of therapeutic alliance; and 4) MAP coaches' self-reported perceptions of MI-adherence during MAP Meeting One. In addition, this study examined whether the presence of dual risk factors (academic *and* emotional risk) versus a single risk factor (academic *or* emotional risk) measured prior to MAP Meeting One predicted AP/IB students' goal attainment assessed during MAP Meeting Two. Thus, although all students who ultimately participated in the MAP intervention also received the 10- to 12-week ACE Program (Fall 2017) and screening procedures developed by the research team (spring 2018), the scope of the present study was limited to the MAP intervention outcomes (spring 2018). More specifically, students were only included in the present analyses if they completed MAP Meeting One and returned for MAP Meeting Two (*N*= 114). This sample was previously examined in a study of student, coach, and end user acceptability (Suldo et al., 2021) but no analyses have been conducted in relation to goal attainment after MAP Meeting One. See Figure 2 for a CONSORT diagram (adapted with permission from Suldo et al., 2021) depicting recruitment and enrollment of study participants in the context of the overarching 2017-2018 research project.

N=547 9th grade AP/IB students, randomized by program to condition

Consent Rate: 78.2%
- Dist A (81.3%)
- Dist B (80.7%)
- Dist C (70.9%)

Control (*n*=196)
[5 AP, 2 IB programs]

Dist A (*n*=92)
Dist B (*n*=56)
Dist C (*n*=48)

ACE Intervention (*n*=351)
[5 AP, 3 IB programs]

Dist A (*n*=180)
Dist B (*n*=78)
Dist C (*n*=93)

No Risk (*n*=197)

Academic Risk (*n*=39)

Emotional Risk (*n*=55)

Academic+ Emotional Risk (*n*=41)

No Screening Data (*n*=19)

18 Left AP/IB Prog
- Dist A (n=6)
- Dist B (n=10)
- Dist C (n=2); and no consent for screening (n=1)

Peer Leaders (*n*=6)

Students with Risk (*n*=135)

Participation Rate: 100%
- Dist A (100%)
- Dist B (100%)
- Dist C (n/a)

MAP Participant (*n*=6)

MAP Participant (*n*=115)

Participation Rate: 85.2%
- Dist A (97.4%)
- Dist B (96.0%)
- Dist C (46.9%)

Return Rate: 83.3%
- Dist A (100%)
- Dist B (75%)
- Dist C (n/a)

Meeting One + Two (*n*=5)

Meeting One only (*n*=1)

Meeting One only (*n*=6)

Meeting One + Two (*n*=109)

Return Rate: 94.8%
- Dist A (97.4%)
- Dist B (92.6%)
- Dist C (80.0%)

Figure 2. Adapted with Permission from Suldo et al. (2021): *CONSORT Diagram for 2017-2018 Evaluation of ACE Program in 15 AP and IB Programs from 14 High Schools in 3 Districts*

Participants

  Student participants in ACE Program (Fall 2017). As described by Suldo et al. (2021), and depicted in Figure 2, participants from the larger RCT included 547 9th grade students from 15 AP or IB programs, across 14 different high schools and three diverse school districts in a Southeastern state. This sample represents students with informed parental consent to participate in ACE-related research activities (approximately 78% of invited students). Participants were mostly female (64.2%), and self-identified as White (46.6%), Hispanic (21.2%), multiracial (14.1%), Asian (11%), and Black (7.1%). Nearly 42% of students qualified for free or reduced-price lunch. The 15 curricula programs were randomly assigned to intervention (3 IB, 5 AP) or control (2 IB, 5 AP) conditions. In the fall of 2017, students assigned to the intervention condition (n= 351 9th grade students) received the 10 to 12 week universal ACE program through either their AP Human Geography course ($n = 215$) or IB Inquiry Skills course ($n = 136$). As described in earlier sections, the ACE Program is a universal social-emotional learning (SEL) curriculum intended for high school students enrolled in AP classes or IB programs in order to help them identify and practice effective coping and engagement skills in order to maximize their social/emotional and academic well-being.

  Student participants in MAP Intervention (Spring 2018). Once students completed the 10-12 weekly sessions of the universal ACE Program (Fall 2017), parents were informed of screening and selective intervention procedures via a notification letter, which included an option to opt out of the screening and the MAP intervention portion of the research study. During January of 2018, students who did not opt out of the selective component of the research study completed a one-page screening questionnaire to determine their current levels of academic and social/emotional well-being. Previously established screening procedures (detailed in Suldo et

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al., 2019) were utilized to identify students as potentially experiencing academic or emotional risk. Students were identified as emotionally at-risk if they reported scores greater than 3.6 on the Perceived Stress Scale (PSS; range of 1-5; Cohen, Kamarck, & Mermelstein, 1983), or reported scores less than 3.4 (range of 1-6) on the school satisfaction subscale from the Multidimensional Students' Life Satisfaction Scale (MSLSS; Huebner, 2004). Students were identified as academically at-risk if they had an overall unweighted GPA from the Fall 2017 semester of 3.0 or less (range of 0 to 4.0) or a grade of a C or lower in a target AP or IB course (e.g., AP Human Geography, IB Biology).

Of the 351 students who received the ACE Program intervention (Fall 2017) and completed mid-year screening procedures ($n= 332$; January 2018), a total of 135 students were identified as either exhibiting academic risk ($n= 39$; 11.7%), emotional risk ($n= 55$; 16.6%), or both ($n= 41$; 12.3%) and were invited to participate in the MAP Intervention. In order to increase the sample of students receiving the MAP Intervention, as well as to reduce stigma associated with participating in the one-on-one MAP sessions, six additional peer leaders (i.e., well-adjusted students who did not meet the aforementioned criteria for emotional or academic risk) were also invited to participate. Of the three districts included in the study, two districts (Districts A and B) allowed these peer leaders to participate in MAP without requiring a separate consent form. The third district (District C) only permitted at-risk students to participate in MAP and required signed parental consent for these students to participate in any MAP activities. As a result, student participation in MAP was higher in Districts A and B (97.5% and 96.6%, respectively) compared to District C (46.9%). Once parental consent was obtained for students in District C (and screening procedures were implemented in Districts A and B), MAP coaches invited students to participate in MAP.

Out of the 141 students who were invited to participate in MAP, 121 students (85.8%)

participated in MAP Meeting One in the spring of 2018. A total of 114 (94.2%) of those students

returned for the optional MAP Meeting Two, representing the final sample examined in this

study. Due to differences in consent and assent requirements across the three districts included in

the study, participation rates were higher in Districts A and B compared to District C (Figure 2).

Table 3 provides additional descriptive characteristics of the final sample used for analyses.

Table 3

Demographic Characteristics of Participants in MAP Meeting One and Two (N= 114)

	Percentage	*N*
Academic Program (*N*= 114)		
Advance Placement (AP)	83.3%	95
International Baccalaureate (IB)	16.7%	19
Gender (*N*= 114)		
Male	32.5%	37
Female	67.5%	77
Race/Ethnicity (*N*= 114)		
White, Non-Hispanic	59.6%	68
Black, Non-Hispanic	21.9%	25
Asian	12.3%	14
Hispanic	33.3%	38
Other (including American Indian or Native Hawaiian)	2.6%	3
Free/Reduced-Price Lunch (*N*= 114)	56.1%	64
Father Educational Level (*N*= 110)		
Some high school, did not complete	10.5%	12
High school diploma/GED	21.1%	24
Some college, did not complete	16.7%	19
College/university degree	28.9%	33
Master's degree	12.3%	14
Doctoral level degree (Ph.D., M.D.) or other degree beyond Master's level	7.0%	8
Mother Educational Level (*N*= 111)		
Some high school, did not complete	5.3%	6
High school diploma/GED	21.9%	25
Some college, did not complete	11.4%	13
College/university degree	36.0%	41
Master's degree	17.5%	20
Doctoral level degree (Ph.D., M.D.) or other degree beyond Master's level	5.3%	6

MAP Coaches. All 121 students who received the MAP intervention were served by 7 trained MAP interventionists, or "MAP coaches." All MAP coaches were members of the university-based research team (including this researcher) who had received extensive training in MI and MAP intervention materials (e.g., MAP Meeting One and Two intervention protocols, student handouts, etc.). All 7 MAP coachers were female (5 white, 2 Asian). One MAP coach was a member of the university faculty, two were postdoctoral fellows, and four were School Psychology doctoral students (including this researcher) with advanced coursework in school mental health service delivery. Specific training procedures for MAP coaches are described in subsequent sections. The total number of students assigned to each MAP coach is presented below in Table 4.

Table 4

Number of Students Assigned to each MAP Coach (N= 114 students)

	Number of Students	Percent of Sample
MAP Coach #1	14	12.3%
MAP Coach #2	15	13.2%
MAP Coach #3	14	12.3%
MAP Coach #4	6	5.3%
MAP Coach #5	20	17.5%
MAP Coach #6	27	23.7%
MAP Coach #7	18	15.8%

Procedures

Training of MAP Coaches. Aligned with best practices in training proficient practitioners in motivational interviewing (Miller & Moyers, 2006), all seven MAP coaches (including this researcher) completed the Motivational Interview Training and Assessment System (MITAS; Frey, Lee, Small, Walker, & Seeley, 2017) prior to MAP implementation (Spring 2018). The MITAS is a comprehensive training package that includes a multi-day didactic instructional component, followed by opportunities for expert modeling, in vivo

practice, and individualized performance feedback by an experienced member of the

Motivational Interviewing Network of Trainers (MINT). In order for MAP coaches to be

considered "proficient" in motivational interviewing, each coach was individually evaluated by

the expert consultant using the Motivational Interviewing Treatment Integrity Code (MITI 4.2.1;

Moyers, Manuel, & Ernst, 2014), the current gold standard in evaluating clinicians' competence

in MI. Specifically, the expert consultant listened to several de-identified practice audiotapes for

each MAP coach, evaluating each coach on their technical skills (cultivating change talk,

softening sustain talk) and relational skills (partnership and empathy) skills, as well as their

effective use of MI core skills (e.g., open-ended questions, affirmations, reflections, and

summarizations). All seven MAP coaches were determined to be proficient in MI prior to

implementation of MAP. A more detailed review of MAP training procedures used during this

study is described in O'Brennan et al., 2020.

       Consent/assent process for MAP. As aforementioned, Districts A and B did not require

a separate consent for participation in MAP above and beyond the consent completed prior to

participation in ACE program activities during Fall 2017. District C required that only students

with identified academic/emotional risk participate in MAP (i.e., peer leaders were not

permitted), and required signed parental consent for students to participate in any MAP

activities. Once parental consent was obtained for students in District C (and screening

procedures were implemented in Districts A and B), MAP coaches invited students to participate

in MAP. Copies of the IRB-approved parent consent and student assent forms can be found in

Appendix A and B, respectively.

       Overview of MAP implementation (Spring 2018). Once students and parents

completed the appropriate consent/assent processes according their respective district

requirements, the MAP implementation phase of the research study began (Spring 2018).

Students who were identified for MAP participation were invited to meet with their assigned

MAP coach (including this researcher) up to 4 times: 1) during the completion of the *pre-MAP

assessment*; 2) during *MAP Meeting One*; 3) when students were hand-delivered a *reminder

letter* from their MAP coach; and 4) during *MAP Meeting Two*. Following MAP Meetings One

and Two, students were asked to complete a 1-page questionnaire assessing their perceptions

regarding the acceptability of MAP intervention activities and materials. The acceptability

questionnaire used after MAP Meeting Two also included questions assessing students'

perceptions of goal attainment since MAP Meeting One. Copies of the student acceptability

measures for MAP Meetings One and Two can be found in Appendix I and K, respectively.

MAP coaches also completed corresponding acceptability measures following each MAP

Meeting with students. Copies of the interventionist version of the acceptability measures for

MAP Meetings One and Two can be found in Appendix J and L, respectively.

   Pre-MAP assessment. Prior to MAP Meeting One, individual or small groups of students

were invited to meet with their MAP coach during the beginning of the spring 2018 semester and

were given instructions to complete a 12-page questionnaire. As described in detail by

O'Brennan et al. (2020), this questionnaire was used to determine students' current levels and

sources of stress, use of effective and ineffective coping strategies (assessed using the Coping

with Academic Demands Scale [CADS]; Suldo, Dedrick, Shaunessy-Dedrick, Fefer, & Ferron,

2015), perceived parenting styles used in the home, and indicators of school engagement. These

questionnaires were then entered into a computerized scoring system (developed by a member of

the research team), which produced an individualized feedback graph for the students and their

MAP coach to review during MAP Meeting One. The graph produced by this program depicted

students' self-reported levels of the following: 1) frequency of use of "Effective Coping Styles" (e.g., seeking academic support, using relaxation strategies); 2) frequency of use of "Ineffective Coping Styles" (e.g., avoidance behaviors, such as napping or turning to illicit substances); 3) levels of "Student Engagement" (e.g., time spent engaged in extracurricular activities, feelings of connectedness to teachers, etc.); and 4) appraisal of "Home" or parenting factors (e.g., emotionally supportive parenting, degree of age-appropriate independence provided by parents, etc.). Students' scores in each of these areas were presented as T-scores and were graphed in contrast to average AP/IB students (i.e., T-scores of 50) as well as a high-achieving subset of AP/IB students who were determined to be emotionally and academically well-adjusted (see Suldo et al., 2018 for a detailed description of sampling and assessment procedures for this comparison sample of over 2,300 AP/IB students). A blank version of the individualized student graph (i.e., the "base graph"), as well as a completed de-identified version of an individualized student graph can be found in Appendix C and D, respectively.

MAP Meeting One. Following the completion of the pre-MAP assessment during the beginning of the spring 2018 semester, students and the MAP coach scheduled MAP Meeting One during an instructional period that would be least disruptive to the students' academic well-being (e.g., during a study hall period or elective course). Students were discretely pulled from class (e.g., using a pass to the guidance office), and welcomed into a private room to complete MAP Meeting One by their assigned MAP coach. Students were then re-introduced to the MAP coach, re-oriented to the purpose of the meeting, and provided verbal consent for audiotaping the meeting. Then, MAP coaches led the student through the four phases of the MAP Meeting One intervention protocol. Aligned with stages of MI described by Miller and Rollnick (2013), these four stages include: 1) *Engage* (MAP coaches learn more about students' strengths, values, and

goals following high school); 2) *Focus* (students review their individualized graph, discrepancy is developed between current behaviors and goal behaviors); 3) *Evoke* (MAP coach evokes from students their desires, ability, reasons, and need for the target behavior change goal; and 4) *Plan*. During the final planning stage of MAP Meeting One, students and MAP coaches worked collaboratively with students to select a target aligned with universal program activities (e.g., increase use of time and task management strategies), brainstormed methods for making improvements towards the target goal (e.g., use a daily planner to keep track of assignments), and developed a step-by-step action plan. Near the end of the meeting, students were asked to sign a behavior contract stating their commitment to completing the action plan developed during the meeting. Students were then invited to meet again with their MAP coach for a second MAP meeting (MAP Meeting Two) to assess the progress made towards their action plan. If the students were interested in a follow-up meeting, the MAP coach and student made a plan to complete MAP Meeting Two within approximately 1 month. All students and MAP coaches also completed measures of acceptability (which included measures of therapeutic alliance and goal attainment), and students from Districts A and B received a gift card (pre-paid movie ticket or $10 iTunes gift card) for their participation in research activities. District C did not permit students to receive gift cards for study participation. Students who opted in to MAP Meeting Two were informed that the MAP coach would return in 2-3 weeks to hand-deliver a friendly reminder letter (described below), and in again approximately one month later for MAP Meeting Two.

   MAP Reminder Letter. As described in Suldo et al. (2021), the MAP reminder letter was comprised of two components: 1) a typed reminder letter that included the target goal (e.g., increasing use of time and task management skills) and the specific action plan developed during

MAP Meeting One, and 2) a handwritten note expressing enthusiasm for the upcoming MAP Meeting Two and context for the enclosed typed reminder letter. Approximately 2 weeks prior to MAP Meeting Two, MAP coaches delivered the reminder notes to students using a discrete envelop during a transition period during the school day.

MAP Meeting Two. Approximately one month following MAP Meeting One (Spring 2018), and about two weeks after receiving the reminder letter, students who opted in to a follow-up meeting (*n*= 114; 94.2%) met with their same MAP coach for MAP Meeting Two. During the beginning of MAP Meeting Two, students were greeted by their MAP coach and were provided an explanation of the purpose of the meeting. Students were then led through the same four MI phases (engage, focus, evoke, and plan) that closely mirrored processes from MAP Meeting One. However, during the engage phase, coaches and students reviewed the student's progress towards their previously identified goals and collaboratively decided on a course of action, which included the following options: 1) the student could decide to keep their current goal and revise their action plan; 2) the student could decide to change their goal and create a new plan; or 3) the student could decide to stop the meeting without creating or revising a plan (either due to adequate progress made towards the first goal or desire to return to class without further planning). Based on the student's decision, the MAP coach led them through the rest of the MI phases, and ended the meeting by offering any ACE Program or MAP student handouts that may further support their academic and/or emotional well-being. Students were also encouraged to make an appointment with their school mental health provider (e.g., school counselor, social worker, school psychologist), if they experienced significant distress (e.g., symptoms of depression or anxiety, suicidal ideation) and could benefit from additional support beyond the scope of MAP.

Predictor Variables

Participant demographics. Student participants completed a demographic questionnaire prior to their participation in the ACE program (early Fall 2017), which asked them to report their birthdate, age, gender, grade level, teacher, high school, and academic program (AP or IB).

Perceived MI-adherent skills of MAP coach. In order to assess the perceived MI-adherent skills of the MAP coaches, they were asked to fill out a 1-page acceptability measure following each MAP meeting with students. This page included 20 items from the Measure of Perceived Proficiency (MOPP; Frey et al., 2017), a measure of perceived proficiency of MI that aligns conceptually with current gold standard assessments of MI technical and relational skills (e.g., MITI 4.2.1; Moyers, Manuel, & Ernst, 2014). A 10-item version of the MOPP was described by Frey, Lee, et al. (2017) in their overview of the Motivational Interviewing Training and Assessment System (MITAS) in the context of school-based applications of MI. The version of the MOPP provided to this researcher by the second author of the aforementioned study includes 20 items that assesses MAP coaches' perceived performance on critical indices of MI-adherent behaviors (e.g., expressing partnership, using OARS, cultivating change talk, and softening sustain talk). Appendix J and L include full copies of the acceptability measures for both MAP Meetings. For the 20 items measuring MI-adherence (items were identical for MAP Meetings One and Two), each statement was rated by MAP coaches on a 5-point scale: 1 = *Poor*, 2 = *Below Average*, 3 = *Average*, 4 = *Above Average*, 5 = *Excellent.* Of the 20 items assessing self-perceived MI-adherence, 4 items addressed relational skills (e.g., "accepted and affirmed the student's values"), 6 items addressed general use of OARS (e.g., "asked open-ended questions"), and 10 items addressed MI technical skills (e.g., cultivating change talk, softening sustain talk). The technical skills items assessed the clinician's self-reported ability to identify change and

sustain talk (e.g., "*Attempted to categorize student speech as change or sustain talk*"), use OARS skills appropriately to cultivate change talk and/or soften sustain talk (e.g., "*Knew when to ask open questions that encourage student change talk*"), and knowledge of when to transition from evoke to plan (e.g., "*Knew when to move on to the development of a change plan*").

Frey et al. (2017) describe using the MOPP for clinical training purposes. Specifically, self-reports of proficiency are "triangulated with observation data (i.e., MITI) to facilitate identification of gaps between a [coach] participant's perceived and actual proficiency, identify points of agreement between perceived proficiency and skill level, and encourage self-reflection" (pp. 6). Thus, the MOPP was used in combination with other assessment tools to provide feedback to the coaches but was not reported on individually as a stand-alone measure. Because the factor structure of this measure has not been previously researched, this researcher conducted an exploratory factor analysis to determine the underlying factor structure of the 20-item measure of perceived MI-adherence. The eigenvalues associated with the first 5 factors were 10.47, 1.57, 1.05, .94, and .79. Using multiple criteria to identify the number of factors to extract from the 20-item measure (i.e., eigenvalues greater than 1.0, visual examination of the scree plot), a range of 1- to 3-factor solutions emerged as potential fits for the data. Factor loadings for the solution for each of the possible numbers of factors (e.g., the 1-factor solution, the 2-factor solution, the 3-factor solution) were then examined to determine which solution was the most interpretable. Upon examination of the 2- and 3-factor solutions, there were multiple items that were potentially problematic as they yielded factor loadings on more than one factor. For example, the 3-factor solution yielded multiple high factor loadings for 9 of 20 total items. Moreover, factor loadings from the 3-factor solution did not align conceptually with the three proposed domains of perceived MI-adherence (i.e., relational skills, general use of OARS, and

MI technical skills). With the goal of identifying a parsimonious factor solution that was theoretically and statistically meaningful, this researcher determined that the 20-item measure was best represented using a single-factor solution measuring overall perceived MI-adherence. The total variance explained by the single-factor solution was 52.36%. Using Cronbach's alpha, the 20-item scale assessing self-reported levels of MI-adherent skills was found to have a high internal consistency ($\alpha = .95$). Results of the exploratory factor analysis, with factor loadings yielded from the unrotated single-factor solution are presented in Table 5.

Table 5

Exploratory Factor Analysis of the 20-Item Measure of Perceived MI-Adherence

Item (*"When meeting with the student, I…"*)	Factor Loadings
Allowed the student to influence the conversation, honoring the student's expertise and wisdom.	.66
Accepted and affirmed the student's values.	.62
Sought to understand the challenge from the student's point of view.	.61
Placed the student's well-being and best interests above my own.	.55
Provided accurate verbal reflections of what a student tells me.	.68
Provided verbal reflections that represent my best gauge of what a student is attempting to communicate.	.80
Used more complex reflections than simple reflections.	.66
Asked open-ended questions.	.63
Used affirming statements.	.74
Used summary statements.	.76
Attempted to categorize student speech as change or sustain talk.	.79
Altered my interview strategies depending on student's use of sustain talk.	.76
Used OARS skills to maximize change talk and minimize sustain talk.	.71
Knew *when* to ask open questions that encourage student change talk.	.82
Knew *how* to ask open questions that encourage student change talk.	.82
Knew *what* to say to encourage student change talk.	.81
Politely acknowledged and disregarded sustain talk in order to shift the focus of the conversation towards behavior change.	.66
Worked to increase the depth and strength of student change talk.	.73
Knew when to transition from discussing motivation to change to how the student sees change occurring.	.80
Knew when to move on to the development of a change plan.	.79

Note. OARS = open-ended questions, affirmations, reflections, and summarizations. Extraction Method = Principal Component Analysis.

Therapeutic alliance. In order to gain perspectives on the quality of the therapeutic alliance between students and MAP coaches, therapeutic alliance was assessed using the youth-reported Therapeutic Alliance Quality Scale (TAQS; Bickman et al., 2010), as well as the corresponding clinician-reported Therapeutic Alliance Quality Rating (TAQR; Bickman et al., 2010).

Therapeutic Alliance Quality Scale (TAQS; Bickman et al., 2010). The youth TAQS is a well-established 5-item measure that assesses the youths' perceived quality of the working relationship between youth (11-18 years of age) and interventionists in the context of individual counseling sessions. The youth TAQS was based on Bordin's conceptualization of therapeutic alliance (Bordin, 1979), which posits that the construct is made up of the client-therapist relationship as well as their agreement on tasks and goals in therapy, The TAQS has been through several iterations over the years, including an original 27-item version, followed by a 52-item version (including additional items that were determined to be harder to endorse, creating a more balanced measure of alliance among youth), a 13-item version (the first version to be published in the Peabody Treatment Progress Battery; Bickman et al., 2007), and finally the 5-item version (Bickman, 2010). For each new iteration of the TAQS, the authors gathered feedback data (e.g., consulted with experts, conducted interviews, administered TAQS to clinical and community samples, etc.) and retained items that had strong psychometric properties, an ability to discriminate constructs, reliable factor structure, and appropriate theoretical properties. The current version of TAQS includes 5-items, with two items assessing the relationship (or "bond") between the client and clinician (i.e., "Did you understand the things that your coach said in this meeting?" and, "In this meeting, did you feel that your coach understood what it feels like to be you?") and three items assessing the agreement on goals and tasks during the meeting

(i.e., "Did this meeting head in the direction that you wanted?"; "Did you and your coach work on problems together in this meeting?"; and "In this meeting, did you feel that your coach would stick with you no matter how you behaved?"). The 5 items on the TAQS are rated by youth on a scale of 1 (*Not at All*) to 5 (*Totally*) and are averaged in order to yield a total score. Based on the psychometric sample described in the Peabody Treatment Progress Battery Manual (PTPB; Bickman et al., 2010), TAQS-Youth Total Scores lower than 3.8 are considered "Low," while scores between 3.8 and 4.8 are considered "Medium," and scores greater than 4.8 are considered "High." Psychometric properties and research applications of the 5-item TAQS will be discussed following the description of the clinician-reported version of the therapeutic alliance measure (TAQR). Internal consistency (α) of this and all measures obtained from use in the current sample is reported in Chapter 4. Appendix I includes the full 5-item TAQS (items 14-18) that was incorporated into the 18-item acceptability questionnaire completed by students following MAP Meeting One.

Therapeutic Alliance Quality Rating (TAQR; Bickman et al., 2010). The clinician-report TAQR is a 4-item measure that assesses the clinician's perceptions of the therapeutic alliance following individual counseling sessions with youth and was developed to be administered simultaneously with the youth TAQS. Consistent with the development of the TAQS (which occurred concurrently with the TAQR), the TAQR was based on the aforementioned Bordin's conceptualization of therapeutic alliance (Bordin, 1979) and has been through several iterations throughout its development. Using myriad feedback data (e.g., consultation with experts, interviews, large-scale administrations, etc.), the authors modified the number of items from 27, to 52, to 30, until its most recent version that includes 4-items. For each iteration, items were retained if they demonstrated strong psychometric properties, an

ability to discriminate constructs, a reliable factor structure, and appropriate theoretical

properties (as with the TAQS). The current 4-item version is included in Version 2.0 of the

PTPB manual (Bickman et al., 2010). The 4-item version of the TAQR includes two questions

assessing the clinician's perceptions of the therapeutic alliance with youth and their caregivers,

while the other two questions assess how the clinician believes the youth and caregiver would

rate their therapeutic alliance. For the present study, given that caregivers were not included in

the MAP intervention, MAP coaches were only asked the two questions that related to students

directly, including their perceptions of therapeutic alliance with individual students (i.e., "In this

meeting, how would you describe your relationship with this student?"), as well as how they

think the student would rate their relationship (i.e., "In this meeting, how do you think the

student will rate your relationship with him/her?"). The dataset also includes an additional item

assessing global appraisal of alliance, specifically "The student and I had a positive working

alliance during this meeting." Following each MAP Meeting, the MAP coach was asked to rate

each item on a scale from 1 (*Very Poor*) to 5 (*Excellent*). Appendix J includes the 2-item TAQR

(items 1-2) and global appraisal item (item 4) that was incorporated into the 26-item

acceptability questionnaire completed by MAP coaches following MAP Meeting One.

Because the 3-item version of the TAQR (including the global appraisal item) has not

been used in prior published studies, this researcher conducted an exploratory factor analysis to

determine the underlying factor structure of this measure. Using multiple criteria to identify the

number of factors to extract from the 3-item measure (i.e., eigenvalues greater than 1.0, visual

examination of the scree plot), a 1-factor solution emerged as the best fit for the data, accounting

for 56.47% of the variance. Results of the exploratory factor analysis are presented in Table 6.

Table 6

Exploratory Factor Analysis of the 3-Item Version of the TAQR[a]

Item	Factor Loadings
In this meeting, how do you think the student will rate your relationship with him/her? *(TAQR item #2)*	.81
In this meeting, how would you describe your relationship with this student? *(TAQR item #1)*	.78
The student and I had a positive working alliance during this meeting *(Global appraisal item)*	.66

Note. Extraction Method = Principal Component Analysis.
[a] In this study, the 2-item Therapeutic Alliance Quality Rating (TAQR; Bickman et al., 2010) was combined with a single global appraisal item developed by the research team (including this researcher).

This researcher also examined inter-item correlations and alpha of these items collectively to determine whether a composite coach-report of alliance is best reflected by the 2-item TAQR or the 3-item TAQR + global appraisal item. The internal consistency of the 3-item version (α = .92) was commensurate with the 2-item version (α = .92). Taken together, results of the exploratory factor analysis and examination of internal consistency provided support for use of the 3-item version of the TAQS for subsequent analyses.

In regard to the psychometric properties of the TAQS/TAQR in prior studies, initial evaluations of psychometric properties found that the brief measures demonstrated high internal reliability when administered to a large sample of youth (*N*= 679) receiving mental health services (Cronbach's alpha = 0.85; Bickman et al., 2010). In a separate, larger sample of youth, Bickman et al. (2012) conducted a large-scale psychometric evaluation of the youth TAQS and TAQR (679 youth, 561 caregivers, and 713 individual clinician ratings per client), as well as longitudinal analyses of the relationships between changes in therapeutic alliance and symptom severity among youth (288 youth, 225 caregivers, 300 clinicians). The 5-item TAQS and 4-item TAQR demonstrated excellent psychometric properties and sensitivity to change over time. Longitudinal analyses found that clinician ratings of therapeutic alliance was related to symptom

improvement as rated by the clinician, parent, and youth. Moreover, decreases in clinician-rated therapeutic alliance was the most important (compared to youth or caregiver) in predicting better rates of symptom improvement in youth. Duppong Hurley et al. (2015) expanded on the work by Bickman et al. (2010, 2012) by conducting a longitudinal examination of youth- and clinician-rated therapeutic alliance in a residential group home setting for youth with disruptive-behavior diagnoses (*N*= 112; 10-17 years old). Results indicated that higher ratings on the youth-reported TAQS was related to decreases in clinician-reported disruptive behaviors, as well as decreases in aggression/problem behavior incidents reported in the residential center (at 6-months). Similarly, higher ratings on the clinician-reported TAQR was related to decreases in clinician-reported aggression/problem behavior incidents reported in the residential center (at 6-months). These findings expand research that therapeutic alliance ratings from the perspectives of youth (TAQS) *and* clinicians (TAQR) is predictive of outcomes for youth (Shirk et al., 2011). That study also provided evidence of the strong psychometric properties of the most recent iterations of the TAQS/TAQR, which confirms existing literature to date (Bickman et al., 2010, 2012; Duppong Hurley et al., 2015).

Extent of emotional and academic risk. As described in the preceding sections, previously established screening procedures (see Suldo et al., 2019) were performed in January 2018 in order to identify students who were experiencing academic and/or emotional risk and could benefit from Tier 2 supports (MAP intervention). Based on data yielded from screening procedures, students fell into four different "type of risk" categories: 1) *no emotional or academic risk* (i.e., students identified as peer leaders [*n* = 5] and invited to participate in MAP intervention); 2) *emotional risk-only* (no academic risk identified); 3) *academic risk-only* (no emotional risk identified); or 4) *emotional and academic risk.* As described in prior sections,

emotional risk was determined present if students self-reported scores >3.6 (range 1-5) on the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) or <3.4 (range of 1-6) on the school satisfaction subscale of the Multidimensional Students' Life Satisfaction Scale (MSLSS; Huebner, 2004). Students were identified as academically at-risk if they had an overall unweighted GPA from fall semester of 3.0 or less (range of 0 to 4.0) or a grade of a C or lower in a specified AP or IB course.

For the present study, risk was operationalized and analyzed in two ways. First, scores on screening measures were operationalized as continuous predictor variables in order to determine whether the presence and level of academic and emotional risk predicted AP/IB students' self-reported level of goal attainment during MAP Meeting Two (Research Question 2). Thus, students' GPA, school satisfaction, and perceived stress were included as separate continuous predictor variables in the multilevel model used to answer Research Question 2. Second, this study examined whether the presence of dual risk factors (emotional *and* academic risk) versus single risk factors (emotional or academic risk) assessed prior to MAP Meeting One predicted AP/IB students' goal attainment assessed during MAP Meeting Two (Research Question 3). As such, following the initial examination of academic/emotional risk as separate continuous predictor variables, a dichotomous variable was created to represent students who experienced emotional *or* academic risk (dual risk= "0") or academic *and* emotional risk (dual risk= "1"). The peer leaders (*n*= 5) were removed from this analysis as they did not fall into either risk group of interest (single risk vs. dual risk). The continuous predictor variables used in the initial regression model (i.e., perceived stress, school satisfaction, and GPA) were removed from the model used to address Research Question 3 due to issues relating to multicollinearity of predictor variables.

Emotional Risk: Perceived Stress Scale. The Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) is a widely used 14-item self-reported measure originally developed to assess individuals' perceptions of stress and ability to cope with stressors during the preceding month. According to the authors, the PSS is appropriate for individuals with at least a junior high school education background. Individuals are asked to read each item (e.g., "In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?") and respond on a 5-point scale: 1 = *Never*, 2 = *Almost Never*, 3 = *Sometimes*, 4 = *Fairly Often*, and 5 = *Very Often*. Higher average scores (range 1-5) on the PSS indicate higher levels of perceived stress. Students who participated in screening procedures during spring 2018 were asked to complete a 6-item version of the PSS. This refined version of the PSS only included items that directly assessed perceived stress and omitted questions regarding students' perceived ability to cope with stress, given that coping behaviors were captured in another measure. According to a confirmatory factor analysis conducted by Lavoie and Douglas (2012), this 6-item version of the PSS has been found to be a valid measure of perceived distress stemming from overwhelming life circumstances. This 6-item version of the PSS has also been utilized in previous studies of the social/emotional and academic functioning of AP/IB students, which found this version to have strong internal reliability (α = .91; Suldo, Shaunessy, & Hardesty, 2008). The PSS has also demonstrated strong construct validity with other measures of self-reported perceived stress among AP/IB students (e.g., Student Rating of Environmental Stressors Scale; Suldo, Dedrick, Shaunessy-Dedrick, Roth, & Ferron, 2015). Appendix H contains a copy of the "ACE Program Check-In," which includes the PSS (includes items 9-14) and the School Satisfaction subscale of the MSLSS (includes items 1-8; note: items 1, 3, and 4 are reverse coded).

Emotional Risk: School Satisfaction subscale of the MSLSS. The Multidimensional

Life Satisfaction Scale (MSLSS; Huebner, 1994) is a widely used 40-item measure of life

satisfaction in youth. The MSLSS measures students' life satisfaction across six important life

domains: family (7 items), friends (9 items), living environment (9 items), self (7 items), and

school (8 items). Youth are asked to rate their agreement on each item using a 6-point scale (1 =

Strongly Disagree, 2 = *Disagree*, 3 = *Mildly Disagree*, 4 = *Mildly Agree*, 5 = *Agree*, and 6 =

Strongly Agree), with higher average scores indicating higher satisfaction in each domain. This

study utilized the School Satisfaction subscale of the MSLSS (see Appendix H) as an indicator

of emotional well-being in the present study. This decision is supported by existing research

indicating a relationship between high school students' self-reported scores on the School

Satisfaction subscale on the MSLSS and important areas of emotional functioning. For example,

Huebner and Gilman (2006) found that high school students' (*N*= 341) with higher ratings of

school satisfaction demonstrated significantly higher functioning on several indicators of

academic and social/emotional well-being (compared to students who reported disliking school).

Students who had the highest 20% of scores on the school satisfaction subscale of the MSLSS,

when compared to students with scores in the lowest 20%, reported higher levels of global life

satisfaction, hope, internal locus of control, and academic performance (GPA). Students in the

very low satisfaction group were also more likely to experience clinical levels of psychological

symptoms. Thus, high school students' self-reported rating of their school satisfaction represents

a promising indicator of well-being in both social/emotional and academic domains. In general,

the School Satisfaction subscale of the MSLSS has demonstrated excellent psychometric

properties, including internal consistency in high school administrations of the measure (α = .84;

Gilman, Huebner, & Laughlin, 2000; Zullig, Huebner, & Patton, 2011).

Academic risk: GPA. The following mid-year academic data was provided by all three school districts: 1) overall unweighted GPA from the fall semester of 2017; and 2) overall course grade from students' AP Human Geography or IB Biology courses. AP Human Geography was selected as the target course grade of interest for AP students because all study participants received the ACE program during this class period. IB Biology was selected as the target course grade of interest for IB students because it is a required course for 9th grade IB students. Although the screening procedures utilized specific cut scores (i.e., unweighted GPA of at least 3.0 and course grade > C), this study examined academic achievement as a continuous predictor variable of unweighted GPA in order to determine whether the presence and level of academic risk predicts AP/IB students' self-reported level of goal attainment during MAP Meeting Two. GPA was selected as the academic risk indicator (rather than individual course grades) in order to increase the reliability of this indicator.

Outcome Variables

Goal attainment (composite z-score). Goal attainment was measured using two student self-reported indicators: student appraisal of their overall goal attainment on a 4-item rating scale collected during MAP meeting two (*indicator #1*) and the percentage of action steps students completed (*indicator #2*). As detailed in the paragraphs below, z-scores for both indicators of goal attainment were combined into a *composite goal attainment z-score* utilized as the outcome variable in the final multivariate analyses. After consultation with members of the doctoral committee, this was determined to be an appropriate and parsimonious approach given that the two indicators were highly correlated with one another, $r = .50$, $p < .01$. In addition, the internal consistency of this 2-indicator composite goal attainment variable was considered acceptable (Cronbach's alpha = .67).

Student self-reported perceptions of goal attainment (indicator #1). Following MAP

Meeting Two, students completed a 1-page questionnaire with 23 close-ended items and three

open-ended items (see Appendix K). Of the closed items, the first six were within a section that

referenced MAP Meeting One in particular (e.g., "*When answering these questions reflect back

on the first meeting you had with your coach last month").* These six items included four items

assessing students' own appraisals of their goal attainment (i.e., the degree to which they

completed their action plan and/or met the behavioral change goal developed during MAP

Meeting One). These items included: 1) "I like the goal my coach and I identified at the end of

the first meeting"; 3) "I made progress on the goal I identified with my coach"; 4) "Since last

month, barriers kept me from reaching my goal" (reversed scored); and 5) "I made changes in

my behavior based on the last meeting." Students were asked to rate each item on a 5-point

Likert scale (1 = "Not at all," 2 = "Only a little," 3 = "Somewhat," 4 = "Quite a bit," 5 =

"Totally"). Composite scores (mean of items, 1, 3, 5 and reverse-scored 4) were then

transformed into z-scores for analyses.

Percentage of action steps completed (indicator #2). During the "engage" phase of MAP

Meeting Two, students were asked by their MAP coach to indicate whether or not they

successfully completed each action step from their action plan developed during MAP Meeting

One (see Appendix M). The number of action steps on each plan varied by individual student

and ranged from 1-4 action steps. MAP coaches then coded each action step as follows: "0"

(student did not complete step), "1" (student partially completed step), or "2" (student

successfully completed step). For each step of the students' action plan, a percentage was

calculated (0, 1, or 2 divided by 2; 0%, 50%, 100%); then, the average percentage completed for

all action steps (up to four action steps) were calculated for each student. For example, a student

who "successfully" completes steps 1 and 2 of their action plan (scoring 2/2 or 100% for those steps), "partially" completes step 3 (scoring 1/2 or 50% for that step), and makes no progress on step 4 (scoring 0/2 or 0% for that step) would have an average goal attainment percentage of 62.5% (i.e., [100% + 100% + 50% + 0%]/4), indicating that they successfully completed approximately 62.5% of their action plan. These average percentage scores were then transformed into z-scores so they could be combined with the other indicator of goal attainment and included in a composite score used for final analyses.

Data Analyses

The following statistical analyses were conducted in order to answer each of the following research questions:

1. *Research Question 1: What are the overall levels of AP/IB students' self-reported goal attainment (assessed during MAP Meeting Two) following participation in MAP Meeting One?*

    Descriptive statistics, including means, standard deviations, range, skewness, and kurtosis, of the dependent variables of interest were calculated and are presented in Chapter 4. This includes both the student self-reported perceptions of goal attainment (4 items rated on a 5-point Likert scale), as well as the percentage of action steps completed between MAP Meeting One and MAP Meeting Two. After examining and presenting the characteristics of these two indicators of goal attainment separately, they were transformed into z-scores, assessed for internal consistency of items, and combined into a composite score representing the final goal attainment outcome variable that will be used in subsequent multilevel analyses.

2. *Research Question 2: To what extent do the following variables predict AP/IB students' self-reported level of goal attainment assessed during MAP Meeting Two: GPA*

(predictor #1), school satisfaction (predictor #2), perceived stress (predictor #3), gender,

(predictor #4), student and MAP coaches' ratings of therapeutic alliance (predictors #5

and 6), and perceived MI-adherence (predictor #7) during MAP Meeting One?

Upon the completion of the preliminary descriptive analyses, assumptions underlying

hierarchal linear modeling analyses were assessed. Specifically, linearity, normality,

homogeneity of error variance, and independence of errors were checked through visual analysis.

Linearity of the relationship between the independent (i.e., therapeutic alliance, gender, academic

and emotional risk, and perceived MI adherence) and dependent variables (i.e., goal attainment

composite z-score) was examined using scatter plots. Normality was inspected using visual

analysis of residuals related to the dependent variables. To assess normality of variables,

skewness and kurtosis also was calculated. To examine the homogeneity of error variance, a

visual examination of a plot of standardized residuals by standardized predicted values was

utilized. To test independence of error, scatter plots of the residuals versus predicted values of

the independent variables were utilized to test for independence of error.

Hierarchical linear modeling was used to account for the nesting of students ($N= 114$)

within a total of 7 different MAP coaches. A combined model including all six level 1 student-

level predictors (i.e., gender, perceived stress, school satisfaction, GPA, student-reported

therapeutic alliance, coach-reported therapeutic alliance, and perceived MI adherence) was used

to determine the degree to which these variables predicted students' goal attainment following

their participation in the first MAP meeting. The multilevel equations are listed below:

Level 1: Goal Attainment$_{ij}$ = β_0 + β_1 GPA + β_2 School satisfaction + β_3 Perceived stress

$+ \beta_4$ Gender + β_5 Student-reported therapeutic alliance + β_6 Coach-reported

therapeutic alliance + β_7 Perceived MI adherence + e_{ij}

Level 2: $\beta_0 = Y_{00} + u_0$

3. *Research Question 3: When controlling for students' gender, therapeutic alliance, and perceived MI adherence, to what extent does the presence of dual risk factors (academic and emotional risk) versus single risk factors (academic or emotional risk) predict AP/IB students' goal attainment following MAP Meeting One?*

Consistent with procedures used to answer Research Question 2, HLM was used to examine the relationship between predictor and outcomes variables while accounting for the nesting of students ($N= 109$) within 7 different MAP coaches. The peer leaders ($n= 5$) described in the prior sections were removed from this analysis as they did not fall into either risk group of interest (single risk vs. dual risk). Of specific interest was whether the presence of dual risk factors (emotional *and* academic risk factors) versus a single risk factor (emotional or academic risk factors) assessed prior to MAP Meeting One predicted AP/IB students' goal attainment assessed during MAP Meeting Two. As such, a dichotomous variable called "dual risk" was created to represent students who experienced emotional *or* academic risk (dual risk= "0") or academic *and* emotional risk (dual risk= "1"). In addition, the continuous predictor variables representing risk (i.e., perceived stress, school satisfaction, and GPA) were removed from the final model due to issues relating to multicollinearity of predictor variables.

Using the sample of students with peer leaders excluded ($N = 109$) and the dichotomized risk variable included, bivariate relationships between all variables were examined. Upon completion of preliminary analyses, assumptions underlying HLM were assessed. Specifically, linearity, normality, homogeneity of error variance, and independence of errors were checked through visual analysis. Appropriate follow-up statistical testing was conducted when deemed necessary. Linearity of the relationship between the independent (i.e., therapeutic alliance,

gender, perceived MI-adherence, and dual risk) and dependent variables (i.e., goal attainment composite z-score) was examined using scatter plots. Normality was inspected using visual analysis of residuals related to the dependent variables. To assess normality of variables, skewness and kurtosis also was calculated. To examine the homogeneity of error variance, a visual examination of a plot of standardized residuals by standardized predicted values was utilized. To test independence of error, scatter plots of the residuals versus predicted values of the independent variables were utilized to test for independence of error. The multilevel equations for this new model are listed below:

Level 1: Goal Attainment$_{ij}$ = β_0 + β_1 Dual risk + β_2 Gender + β_3 Student-reported

therapeutic alliance + β_4 Coach-reported therapeutic alliance + β_5 Perceived MI

adherence + e_{ij}

Level 2: β_0 = Y_{00} + u_0

Ethical Considerations

All study procedures described above were approved by both the University of South Florida's Institutional Review Board (IRB) as well as the participating districts' IRB. Parental consent and student assent were obtained according to both USF's and each districts' IRB-approved procedures prior to student participation in this research study. In order to protect student confidentiality, each participant was assigned an ID number, and identifying data (including audio files) are stored in a password-protected and secure university drive which can only be accessed by approved research staff. Physical data, including completed paper-and-pencil questionnaires, are stored in locked data rooms at the university that can only be accessed by approved research staff.

Chapter IV: Results

This chapter presents results of the data analyses used to answer this study's research questions. Specifically, this chapter will begin with a review of data entry and screening procedures, followed by an overview of measure reliability. Then, descriptive statistics of the predictor and outcome variables used in this study will be presented (Research Question 1). Finally, results from the hierarchical linear modeling (HLM) analyses will be presented in order to determine salient predictors of participant goal attainment following the MAP intervention (Research Questions 2-3).

Research Questions

The subsequent analyses included in this chapter addressed the following research questions:

1. What are the overall levels of AP/IB students' self-reported goal attainment (assessed during MAP Meeting Two) following participation in MAP Meeting One?

2. To what extent do the following variables predict AP/IB students' self-reported level of goal attainment assessed during MAP Meeting Two:

   a. Students' level of academic (GPA) and emotional risk (school satisfaction, perceived stress) prior to receiving MAP;

   b. Students' gender;

   c. Students' and MAP coaches' ratings of therapeutic alliance; and

   d. MAP coaches' perceptions of MI-adherence during MAP Meeting One?

3. When controlling for students' gender, therapeutic alliance, and perceived MI-adherence, to what extent does the presence of dual risk factors (academic *and* emotional risk) versus

single risk factors (academic *or* emotional risk) predict AP/IB students' goal attainment following MAP Meeting One?

Data Screening

Screening and post-intervention measures completed by students and MAP coaches were entered by graduate-level research assistants (including this researcher) into a software program (Remark) using optical scanners. Data entry decision rules were generated by the research team (including this researcher) to guide consistent handling of items with missing or multiple responses. In the case of multiple responses, when two items were marked for a single item, a coin toss was used to select which marked item to retain. At least 10% of participants' survey data were manually checked for accuracy to verify the integrity of data entry. Any data entry errors were corrected in the database, and surveys falling before and after the code number of the packet with an identified error were verified until an error-free survey was found. These verified datasets were then exported to SPSS and SAS and checked for additional systemic errors (e.g., out-of-range item responses, etc.) by a member of the research team (including this researcher).

Missing data. Overall, rates of missing student and MAP coach self-reported and district-collected data were very low (<2% missing data on all variables). In the case of student self-report data, ACE program and/or MAP interventionists privately checked student forms upon collection in order to reduce the likelihood of missing data. For missing data identified after data entry, overall scale and factor scores were calculated and retained for analyses if participants completed a specified number of items on the given scale. Nearly all participants met or exceeded this threshold for all student self-reported dependent measures used in the current study (PSS, MSLSS, MAP acceptability forms, etc.). There were no missing items found

in any MAP coach-reported measure. In order to minimize the loss of data, the results presented

here are based on pairwise deletion for any missing data.

Measure Reliability

All measures yielding scale or composite scores (e.g., TAQS, TAQR, School Satisfaction

subscale of the MSLSS, etc.) were analyzed to determine their internal consistency. As presented

in Table 7, Cronbach's alpha ranged from .40 (self-reported goal attainment) to .95 (perceived

MI-adherence of MAP coach), indicating acceptable estimates of reliability for each measure

analyzed in the study.

Table 7

Cronbach's Alpha (α) for Multi-item Scales Utilized in Analyses (N= 114)

Measure	# of Items	N	Cronbach's Alpha (α)
Predictor Variables			
Coach-reported MI adherence	20	114	.95
Student reported therapeutic alliance (TAQS)	5	112	.80
Coach-reported therapeutic alliance (TAQR)	3	114	.92
Perceived Stress (PSS)	6	113	.87
School Satisfaction subscale of the MSLSS	8	113	.85
Outcome Variable			
Self-reported goal attainment (indicator #1)	4	114	.40
% of action steps completed (indicator #2)	1-4	114	n/a[a]
Goal attainment (composite z-score)	2	114	.67

Note. MSLSS = Multidimensional Life Satisfaction Scale (Huebner, 1994); PSS = Perceived Stress Scale (Cohen et al., 1983); TAQR = Therapeutic Alliance Quality Rating (Bickman et al., 2010); TAQS = Therapeutic Alliance Quality Scale (Bickman et al., 2010).
[a] Cronbach's alpha was not calculated for this measure given that the total score is an average of students' completion rates for 1-4 action steps (rather than a dimensional measurement scale).

Descriptive Analyses

Descriptive statistics of normality (e.g., means, standard deviations, range, skewness, and

kurtosis) for each of the predictor and outcome variables were calculated and are presented in

Table 8. Nearly all variables included in this study had an approximately normal distribution,

with skew and kurtosis values between -2.0 and +2.0. The only exception was student reported therapeutic alliance (assessed using the 5-item TAQS), which had a kurtosis of +2.25.

Sample demographics. Participants ($N= 114$) included 9th grade AP/IB students (67.5% female) ranging in age from 13 to 15 (mean age = 13.98 years old). In regard to program participation, 83.3% ($n= 95$) of the sample were enrolled in AP course(s) and 16.7% ($n= 19$) were enrolled in an IB program. In regard to the race/ethnicity of study participants, the majority of students identified as white/non-Hispanic (59.6%), followed by Hispanic (33.3%), black/non-Hispanic (21.9%), Asian (12.3%), or "other" (including American Indian or native Hawaiian; 2.6%). Just over half of participants (56.1%) qualified for free or reduced-price lunch. A full summary of sample characteristics, including race/ethnicity, gender, program (AP or IB), and parental education is presented in Table 3 (Chapter 3).

Emotional risk (school satisfaction and perceived stress). For students' self-reported levels of school satisfaction (represented by the school satisfaction subscale of the MSLSS), the mean score was 3.87 ($SD = 0.95$; range = 1.63 to 5.75). The SD and range values indicate that the sample evidenced considerable variability in severity of emotional risk, ranging from low (1.63) to high (5.75) levels of school satisfaction (see Figure 3 for a histogram depicting the frequency distribution for this variable).
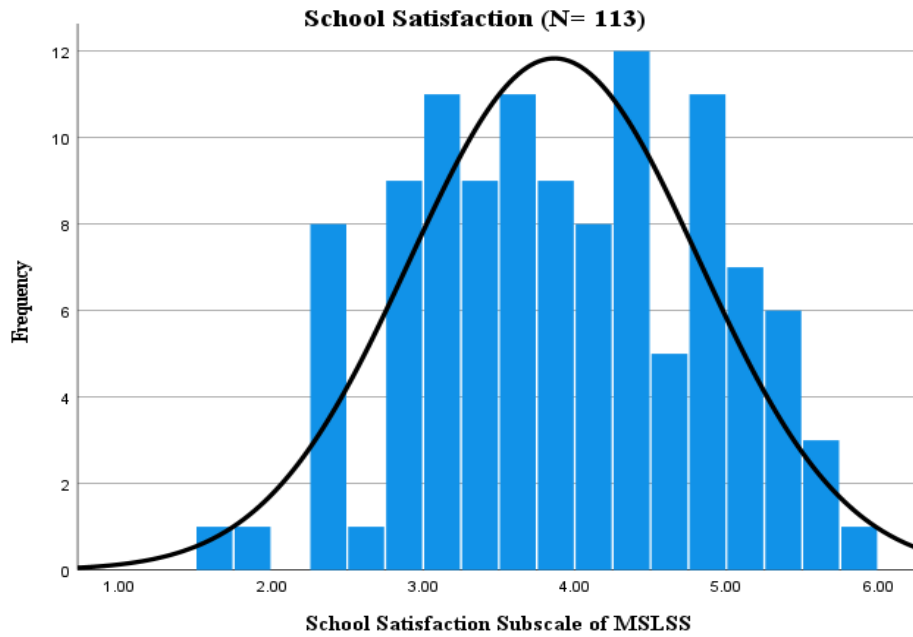
Figure 3. Histogram depicting the frequency distribution of student-reported school satisfaction as measured by the school satisfaction subscale of the Multidimensional Life Satisfaction Scale (MSLSS; Huebner, 1994).

For students' self-reported levels of perceived stress (as measured by the PSS), the mean score was 3.41 (SD = 0.90; range = 1.17 to 5.00). The SD and range values indicate that the sample evidenced considerable variability in severity of emotional risk, ranging from low (1.17) to high (5.0) levels of stress (see Figure 4 for a histogram depicting the frequency distribution for this variable).
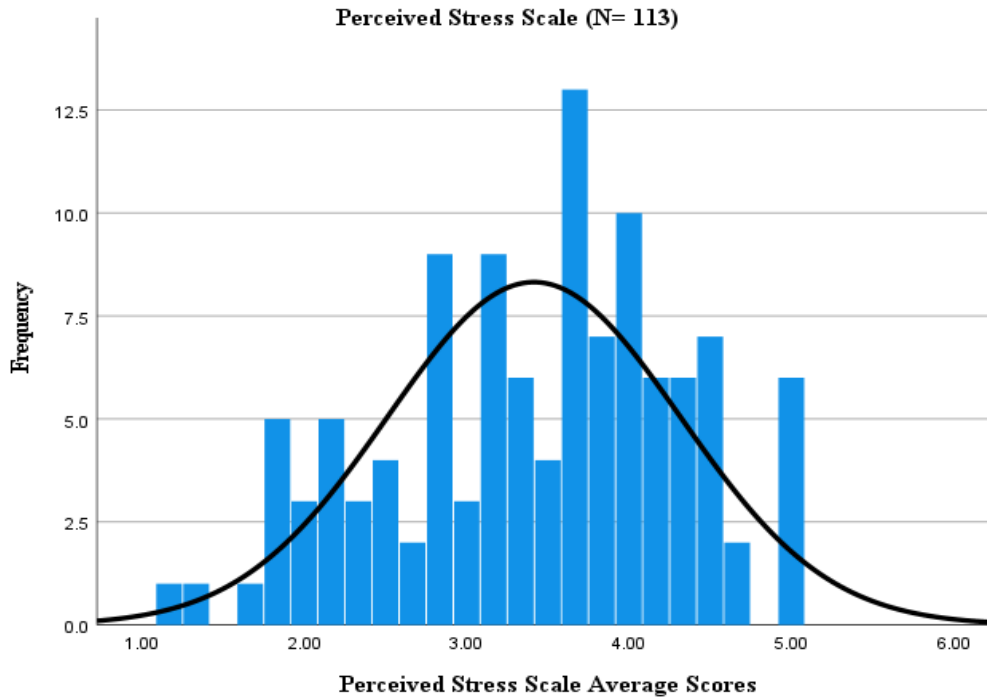
Figure 4. Histogram depicting the frequency distribution of student-reported levels of perceived stress as measured by the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983).

Academic risk (GPA). The mean for unweighted semester GPA was 3.07 (*SD* = 0.71; range = 0.50 to 4.00). The SD and range values indicate that the sample evidenced considerable variability in unweighted semester GPA, ranging from 0.5 to 4.0 (see Figure 5 for a histogram depicting the frequency distribution for this variable).
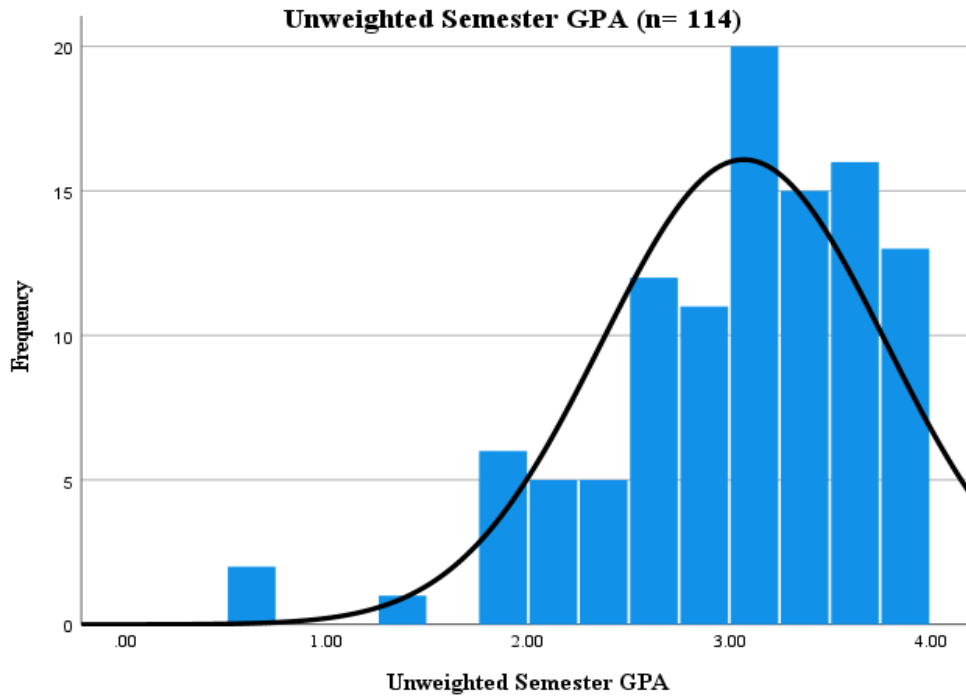
Figure 5. Histogram depicting the frequency distribution of students' unweighted semester GPA, assessed prior to MAP Meeting One (Fall 2017).

Goal attainment (Research Question 1). In order to answer research question 1 (*What are the overall levels of AP/IB students' self-reported goal attainment following MAP Meeting Two?*), means and standard deviations were calculated for two indicators of students' self-reported goal attainment: 1) average score of four items assessing perceptions of goal attainment rated on a 5-point Likert scale ($M = 4.13$; S$D = 0.49$; range = 1.00 to 5.00); and 2) percentage of action steps completed between MAP Meeting One and MAP Meeting Two ($M = 70.69$; S$D = 26.55$; range = 0% to 100%). For the later indicator of goal attainment (% of action steps completed), the frequency breakdown of the number of action steps developed during MAP Meeting One were as follows: 1 step (no students; 0%); 2 steps (11 students; 9.65%); 3 steps (78 students; 68.42%); and 4 steps (25 students; 21.93%).

Z-scores calculated for each of the two indicators of goal attainment (i.e., self-reported goal attainment and percentage of action steps completed) were averaged in order to create a

composite variable representing the overall outcome variable of interest (goal attainment). Upon

consultation with members of the doctoral committee, this was determined to be appropriate

given that the two indicators are conceptually aligned and were moderately correlated, $r(112) =$

.50, $p < .01$. As presented in Table 7, the internal consistency of this 2-indicator composite goal

attainment variable (Cronbach's alpha = .67) may be considered acceptable (Ponterotto &

Ruckdeschel, 2007).

Table 8

Means, Standard Deviations, Ranges, Skewness, and Kurtosis of Study Variables (*N* = 114)

Measure	*N*	Range	*M*	*SD*	Skew.	Kurt.	Min.	Max.
Predictor Variables								
Academic risk after 1st semester								
GPA (unweighted)	114	0-4	3.07	0.71	-0.97	1.28	0.50	4.00
Emotional risk after 1st semester								
School satisfaction (MSLSS subscale)	114	1-6	3.87	0.95	-0.03	-0.75	1.63	5.75
Perceived stress (PSS)	114	1-5	3.41	0.90	-0.33	-0.56	1.17	5.00
Self-reported MI-skill adherence	114	1-5	4.03	0.41	0.74	-0.02	3.25	4.95
Therapeutic alliance								
Student reported therapeutic alliance (TAQS)	112	1-5	4.65	0.43	-1.47	2.25	3.00	5.00
Coach-reported therapeutic alliance (TAQR + 1 global appraisal item)	114	1-5	4.43	0.59	-0.70	-0.34	3.00	5.00
Outcome Indicators								
Self-reported goal attainment	114	1-5	4.14	0.49	-0.19	-0.45	3.00	5.00
Percentage of action steps completed	114	0-100	70.69	26.55	-0.71	-0.30	.00	100.00
Goal attainment (composite z-score)	114	(-3)-3	0.0	.87	-0.64	-0.04	-2.2	1.4

Note. MSLSS = Multidimensional Life Satisfaction Scale (Huebner, 1994); PSS = Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983); TAQR = Therapeutic Alliance Quality Rating (Bickman et al., 2010); TAQS = Therapeutic Alliance Quality Scale (Bickman et al., 2010).

Correlational analyses. In order to determine the strength and nature of relationships between variables utilized in this study, Pearson product-moment correlations among all predictor and outcome measures were calculated (see Table 9). Statistical significance was determined using an alpha level of .05.

Among the seven predictor variables, correlation coefficients (absolute values) ranged from low (.00) to moderate (.45). Gender (0=male, 1=female) was positively correlated with two indicators of risk, including unweighted GPA ($r = .35, p < .01$) and perceived stress ($r = .19, p < .05$). This indicates that females were more likely than their male counterparts to have higher semester GPAs and higher levels of perceived stress. No other significant correlations were identified between students' gender and other study variables. Students' school satisfaction was moderately negatively correlated with perceived stress ($r = -.32, p < .01$), indicating that students with higher levels of stress tended to experience lower levels of school satisfaction. School satisfaction was positively correlated with both student-reported therapeutic alliance ($r = .23, p < .05$) and coach-reported therapeutic alliance ($r = .20, p < .05$), indicating that students reporting higher levels of school satisfaction tended to report a stronger alliance with their MAP coach. Perceived stress was positively correlated with GPA ($r = .27, p < .01$), indicating that students reporting higher levels of stress tended to experience higher academic achievement. Perceived stress was negatively correlated with both perceived MI-adherence ($r = -.20, p < .05$) and coach-reported therapeutic alliance ($r = -.23., p < .05$), but not student-reported therapeutic alliance ($r = -.11, p = .25$). MAP coach-reported therapeutic alliance was also positively correlated with perceived MI-adherence ($r = .22, p < .05$). Student- and coach-reported ratings of therapeutic alliance were moderately positively correlated, $r(110) = .45, p < .001$.

For the outcome variable (goal attainment), including the two indicators and the composite z-score described in prior sections, correlation coefficients (absolute values) ranged from .01 to .35. The two indicators of goal attainment were strongly correlated with each other $r(112) = .50, p < .001$. The first indicator of goal attainment (i.e., students' responses on a 4-item measure assessing perceptions of goal attainment) was positively and significantly correlated with students' school satisfaction ($r = .31, p < .01$) and student-reported therapeutic alliance ($r = .35, p < .01$). Similarly, the second indicator (i.e., percentage of action plan completed) was also positively and significantly correlated with students' school satisfaction ($r = .28, p < .01$) and student-reported therapeutic alliance ($r = .32, p < .01$). This second indicator of goal attainment (% of action plan completed) was also correlated with MAP coaches' perceptions of MI-adherence during MAP Meeting One ($r = .26, p < .01$). The overall composite goal attainment score (i.e., combined z-scores of the two indicators of goal attainment) was also positively and significantly correlated with students' school satisfaction ($r = .30, p < .01$), providing some support for the notion that students with lower levels of emotional risk experienced better proximal outcomes of intervention. Moreover, the composite goal attainment score was positively and significantly correlated with student-reported therapeutic alliance ($r = .35, p < .01$) but was not significantly associated with coach-reported therapeutic alliance ($r = .17, p = .08$). Taken together, these findings provide preliminary support that student (but not coach) perceptions of therapeutic alliance were associated with better responses to the MAP intervention.

Table 9

Correlation Matrix for all Variables of Interest (N = 114)

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Gender (0=male, 1=female)	1									
2. GPA (unweighted)	.35**	1								
3. School satisfaction (MSLSS)	-.04	-.02	1							
4. Perceived stress (PSS)	.19*	.27**	-.32**	1						
5. Perceived MI-adherence	.00	-.12	.12	-.20*	1					
6. Student-reported therapeutic alliance (TAQS)	.13	0.06	.23*	-.11	.14	1				
7. Coach-reported therapeutic alliance (3-item TAQR)	.04	-0.06	.20*	-.23*	.22*	.45**	1			
8. Student-reported goal attainment	-.07	.10	.28**	-.19	.05	.32**	.12	1		
9. % action plan completed	.01	.08	.27**	-.13	.26**	.29**	.17	.50**	1	
10. Composite goal attainment (Z-Score)[a]	-.03	.11	.31**	-.18	.18	.35**	.17	.87**	.87**	1

Note. MSLSS = Multidimensional Life Satisfaction Scale (Huebner, 1994); PSS = Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983); TAQR = Therapeutic Alliance Quality Rating (Bickman et al., 2010); TAQS = Therapeutic Alliance Quality Scale (Bickman et al., 2010).
[a] Composite z-score was utilized in multivariate analyses.
*$p<.05$, **$p<.01$.

Hierarchical Linear Modeling (Research Question 2)

In order to answer Research Question 2 (i.e., "*To what extent do the following variables predict AP/IB students' goal attainment following MAP meeting one: GPA, school satisfaction, perceived stress, gender, student-reported therapeutic alliance, coach-reported therapeutic alliance, and perceived MI adherence?"*), hierarchical linear modeling (HLM) was used to examine the relationship between predictor and outcomes variables while accounting for the nesting of students (*N*= 114) within 7 different MAP coaches. Of specific interest was whether the level of student risk (GPA, perceived stress, school satisfaction), students' gender, therapeutic alliance (student- and coach-reported), and perceived MI-adherence (all level-1 variables) predicted students' goal attainment after participation in MAP Meeting One.

Once preliminary descriptive analyses were completed, assumptions underlying HLM were assessed. Specifically, linearity, normality, homogeneity of error variance, and independence of errors were checked through visual analysis. Appropriate follow-up statistical testing was conducted when deemed necessary. Linearity of the relationship between the independent (i.e., therapeutic alliance, gender, academic and emotional risk, and perceived MI adherence) and dependent variables (i.e., goal attainment composite z-score) was examined using scatter plots. Normality was inspected using visual analysis of residuals related to the dependent variables. To assess normality of variables, skewness and kurtosis also was calculated. To examine the homogeneity of error variance, a visual examination of a plot of standardized residuals by standardized predicted values was utilized. To test independence of error, scatter plots of the residuals versus predicted values of the independent variables were utilized to test for independence of error.

Intraclass correlations. The next step of the HLM procedure included calculating the intraclass correlation coefficient (ICC) for the unconditional model. The ICC represents the proportion of variance in the outcome variable that is explained by the grouping structure of the hierarchical model. It is calculated as a ratio of group-level error variance over the total error variance. The ICC for the unconditional model is:

$$\rho = \frac{.37}{.37 + .75} = .33$$

This indicates that approximately 33% (or one-third) of the variance in the outcome measure (goal attainment) can be explained by the grouping structure (assigned MAP coach). Following the ICC calculations, a combined model including all 7 student-level predictors (i.e., perceived stress, school satisfaction, GPA, gender, student-reported therapeutic alliance, coach-reported therapeutic alliance, and perceived MI adherence) was used to determine the degree to which these variables predicted students' goal attainment following their participation in the first MAP meeting. The multilevel equations are listed below:

Level 1: Goal Attainment$_{ij}$ = β_0 + β_1 GPA + β_2 School satisfaction + β_3 Perceived stress +

β_4 Gender + β_5 Student-reported therapeutic alliance + β_6 Coach-reported

therapeutic alliance + β_7 Perceived MI adherence + e_{ij}

Level 2: β_0 = Y_{00} + u_0

When the level-1 predictors were added to the model, the covariance parameter estimate for the residual was .64, which reflects the within-subjects (level-1) variance. In other words, this value represents the variance of goal attainment (outcome variable) for any given student after controlling for other predictors in the model (GPA, school satisfaction, perceived stress, therapeutic alliance, perceived MI-adherence). Table 10 includes parameter estimates for all predictor variables included in this model.

Table 10

Estimates of Fixed Effects for Hierarchical Linear Model Examining Predictors of Goal

Attainment Following MAP Meeting One (N = 114)

Parameter	Estimate (β)	Std. Error	p
Intercept	-4.23	1.32	.00
GPA (Unweighted)	.20	.12	.09
School Satisfaction	.19	.09	.03*
Perceived Stress	-.10	.09	.29
Gender (0=male, 1=female)	-.16	.17	.36
Student-Reported Therapeutic Alliance	.59	.20	.01*
Coach-Reported Therapeutic Alliance	-.07	.16	.65
Perceived MI-Adherence	.22	.20	.28

Note. The dependent variable used in this model included the *composite goal attainment z-score*, calculated by combining z-scores for two separate indicators of goal attainment.
*$p<.05$.

GPA (predictor #1). Results of the mixed model analysis indicated a non-significant relationship between students' unweighted semester GPA and students' goal attainment following MAP meeting one (β = .20, p = .09). This indicates that while holding all other student-level predictors constant, students' GPA did not significantly predict students' goal attainment following MAP Meeting One.

School satisfaction (predictor #2). Results of the mixed model analysis indicated a significant positive relationship between school satisfaction (with low levels of school satisfaction indicating increased emotional risk) and students' goal attainment following MAP Meeting One (β = .19, p = .03). Holding all other student-level predictor variables constant, it can be inferred that for every 1-unit increase in school satisfaction, the student is expected to score .19 units higher on their composite goal attainment score. In other words, this indicates that even while holding all other student-level predictors constant, students reported school satisfaction was a significant predictor of a more positive response to the MAP intervention.

Perceived stress (predictor #3). Results of the mixed model analysis indicated a non-significant relationship between students' self-reported levels of perceived stress (indicator of emotional risk) and students' goal attainment following MAP Meeting One (β = -.10, p = .29). This indicates that while holding all other student-level predictors constant, students' perceived levels of stress did not significantly predict students' goal attainment following MAP Meeting One.

Gender (predictor #4). Results of the mixed model analysis indicated a non-significant relationship between students' gender and students' goal attainment following MAP Meeting One (β = -.16, p = .36). This indicates that while holding all other student-level predictors constant, students' gender did not significantly predict students' goal attainment following MAP Meeting One.

Student-reported therapeutic alliance (predictor #5). Results of the mixed model analysis indicated a statistically significant and positive relationship between student-reported therapeutic alliance and students' goal attainment following MAP Meeting One (β = .59, p = .02). This indicates that even while holding all other student-level predictors constant, student perceptions of their alliance with their MAP coach during MAP Meeting One was a significant predictor of a more positive response to the MAP intervention.

Coach-reported therapeutic alliance (predictor #6). Results of the mixed model analysis indicated a non-significant relationship between coach-reported therapeutic alliance and students' goal attainment following MAP Meeting One (β = -.03, p = .84). This indicates that while holding all other student-level predictors constant, MAP coach perceptions of therapeutic alliance did not significantly predict students' goal attainment following MAP Meeting One.

Perceived MI-adherence (predictor #7). Results of the mixed model analysis indicated a non-significant relationship between MAP coaches' perceived MI adherence and students' goal attainment following MAP Meeting One ($\beta = .22$, $p = .28$). This indicates that while holding all other student-level predictors constant, MAP coaches' perceived MI-adherence during MAP Meeting One did not significantly predict students' goal attainment assessed during MAP Meeting Two.

Examining Dual Risk as a Predictor of Goal Attainment (Research Question 3)

In order to answer Research Question 3 (i.e., "*When controlling for students' gender, therapeutic alliance, and perceived MI adherence, to what extent does the presence of dual risk factors versus single risk factors predict AP/IB students' goal attainment following MAP Meeting One),* HLM was used to examine the relationship between predictor and outcomes variables while accounting for the nesting of students ($N = 109$) within 7 different MAP coaches. The peer leaders ($n = 5$) described in prior sections were removed from analysis as they did not fall into either risk group of interest (single risk vs. dual risk group). Of specific interest was whether the presence of dual risk factors (emotional *and* academic risk) versus a single risk factor (emotional *or* academic risk) predicted AP/IB students' goal attainment following MAP Meeting One. As such, a dichotomous variable called "dual risk" was created to represent students who experienced emotional *or* academic risk ("dual risk = "0") or academic *and* emotional risk ("dual risk = "1"). The continuous predictor variables representing risk (i.e., perceived stress, school satisfaction, and GPA) were removed from the final model due to issues relating to multicollinearity of predictor variables. A total of 34 students (31.2% of sample) evidenced both academic and emotional risk, and 75 students (68.8%) had only academic or emotional risk. Using the sample of students with peer leaders excluded ($N = 109$) and the

dichotomized risk variable included, bivariate relationships between all variables were examined

and are presented in Table 11.

Table 11

Correlation Matrix for all Variables of Interest in Model with Dichotomous Indicator of Risk (N = 109[a])

Variable	1.	2.	3.	4.	5.	6.	7.	8.
1. Gender (0=male, 1=female)	1							
2. Perceived MI-Adherence	-.03	1						
3. Student-Reported Therapeutic Alliance	.14	.23*	1					
4. Coach-Reported Therapeutic Alliance	.01	.35**	.45**	1				
5. Dual Risk (0=single risk, 1=dual risk)	.01	.05	-.05	-.10	1			
6. Student-Reported Goal Attainment	-.08	.05	.31**	.10	-.11	1		
7. % Action Plan Completed	.02	.26**	.30**	.19*	-.14	.52**	1	
8. Composite Goal Attainment (Z-Score)[b]	-.04	.18	.35**	.17	-.14	.87**	.87**	1

Note. MI = Motivational Interviewing.
[a] Peer leaders ($n = 5$) were excluded from analysis as they did not experience academic or emotional risk. The final sample used in this model included students who experienced academic or emotional risk ($n = 75$) or dual-risk factors ($n = 34$).
[b] Composite goal attainment z-score was utilized in multivariate analyses, which was calculated by combining z-scores for both indicators of goal attainment.
*$p<.05$, **$p<.01$.

Upon the completion of preliminary analyses, assumptions underlying HLM were

assessed. Specifically, linearity, normality, homogeneity of error variance, and independence of

errors were checked through visual analysis. Linearity of the relationship between the

independent (i.e., therapeutic alliance, gender, perceived MI-adherence, and dual risk) and

dependent variables (i.e., goal attainment composite z-score) was examined using scatter plots.

Normality was inspected using visual analysis of residuals related to the dependent variables. To

assess normality of variables, skewness and kurtosis also was calculated. To examine the homogeneity of error variance, a visual examination of a plot of standardized residuals by standardized predicted values was utilized. To test independence of error, scatter plots of the residuals versus predicted values of the independent variables were utilized to test for independence of error. The multilevel equations for this new model are listed below:

Level 1: Goal Attainment$_{ij}$ = β_0 + β_1 Dual risk + β_2 Gender + β_3 Student-reported therapeutic alliance + β_4 Coach-reported therapeutic alliance + β_5 Perceived MI adherence + e_{ij}

Level 2: β_0 = Y_{00} + u_0

Results of the mixed model analysis indicated a non-significant relationship between the presence of dual risk factors (emotional *and* academic risk factors) versus single risk factors (emotional or academic risk factors) and students' goal attainment following MAP Meeting One (β = -.27, *p* = .13). Consistent with results from the model utilized in the previous section, there was a significant positive relationship between student-reported therapeutic alliance (but not coach-reported alliance) and students' goal attainment following MAP Meeting One (β = .70, *p* < .01). This indicates that even while holding all other student-level predictors constant, student perceptions of their alliance with their MAP coach during MAP Meeting One was a significant predictor of a more positive response to the MAP intervention, regardless of how student risk was operationalized (i.e., as continuous measures of risk vs. dichotomous measure of single or dual risk). Table 12 includes parameter estimates for all predictor variables included in this model.

Table 12

Estimates of Fixed Effects for Hierarchical Linear Model with Risk Included as Dichotomous

Variable (N= 109[a])

Parameter	Estimate (β)	Std. Error	p
Intercept	-3.84	1.22	.002
Gender (0=male, 1=female)	-.13	.17	.46
Student-Reported Therapeutic Alliance	.70	.21	.001*
Coach-Reported Therapeutic Alliance	-.05	.16	.74
Perceived MI-Adherence	.25	.21	.24
Dual Risk (0=single risk, 1=dual risk)	-.27	.17	.13

Note. MI = Motivational Interviewing. The dependent variable used in this model included the *composite goal attainment z-score*, calculated by combining z-scores for two separate indicators of goal attainment.
[a] Peer leaders ($n = 5$) were excluded from this analysis as they did not experience academic or emotional risk factors. The final sample used in this model includes students who experienced academic or emotional risk ($n = 75$) or dual-risk factors ($n = 34$).
*$p<.05$.

Chapter V: Discussion

The broad purpose of this study was to expand on existing literature investigating the effectiveness of school-based applications of motivational interviewing (MI) in improving proximal indicators of academic and emotional well-being among AP/IB students. Over the last few years, Suldo and colleagues iteratively developed and tested a universal SEL program (i.e., the ACE Program; Shaunessy-Dedrick et al., 2021) as well as a companion Tier 2 MI-based intervention called the Motivation, Assessment, and Planning (MAP) intervention (O'Brennan et al., 2020; Suldo et al., 2021). Collectively, these interventions were created to provide universal and targeted supports for AP/IB students. MAP is a brief (1-2 session) Tier 2 intervention, grounded in MI processes and skills, intended to provide additional one-on-one support to AP/IB students exhibiting indicators of academic and/or emotional distress following the universal ACE program. The present study sheds light on the relationship between AP/IB students' participation in the MAP intervention and their self-reported levels of goal attainment. In the context of this study, the level of goal attainment reported by students represented their progress towards an identified behavioral change goal linked to emotional and academic well-being among this population (Suldo et al., 2018).

In addition, this study investigated whether student-level characteristics and critical process elements predict students' goal attainment following MAP. The following factors were included as predictors of goal attainment in this study: 1) students' level of academic and emotional risk (GPA, perceived stress, school satisfaction); 2) students' gender; 3) students' and MAP coaches' ratings of therapeutic alliance; and 4) MAP coaches' self-reported perceptions of

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MI-adherence during the first of two MAP meetings. This study also examined whether the presence of dual risk factors (academic *and* emotional risk) versus a single risk factor (academic *or* emotional risk) measured prior to MAP Meeting One predicted AP/IB students' goal attainment assessed during MAP Meeting Two. This study involved secondary analyses of data obtained from a larger research project led by Drs. Shannon Suldo and Elizabeth Shaunessy-Dedrick (project carried out by a university-based research team that included this researcher) and was funded by the Institute of Education Science (IES; R305A100911; Suldo et al., 2021). This chapter will discuss the results of data analyses conducted to answer the aforementioned research questions, integrate these findings in the context of existing school-based MI (SBMI) literature, and explore areas where future investigation may be warranted.

Student-Reported Goal Attainment Following MAP Meeting One (Research Question 1)

In order to answer Research Question 1 (*What are the overall levels of AP/IB students' self-reported goal attainment, assessed during MAP Meeting Two, following participation in MAP Meeting One?*), descriptive statistics were calculated for two indicators of goal attainment: 1) the average score of four items[3] assessing student perceptions of goal attainment on a 5-point Likert scale (indicator #1); and 2) the average percentage of action steps completed by the student between MAP Meeting One and MAP Meeting Two (indicator #2). For the first indicator, students (*N*= 114) reported a mean score of 4.13 (S*D* = .49), indicating an average student appraisal of goal attainment falling between the response options "Quite a bit" (4) and "Totally" (5). Moreover, approximately half of students reported an average score of 4 or more, indicating average responses falling between "Quite a bit" (4) and "Totally" (5). Less than 6% of

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[3] These items included: "I like the goal my coach and I identified at the end of the first meeting"; "I made progress on the goal I identified with my coach"; "Since last month, barriers kept me from reaching my goal" (reversed scored); and "I made changes in my behavior based on the last meeting." Students rated each item on a 5-point Likert scale (1 = "Not at all," 2 = "Only a little," 3 = "Somewhat," 4 = "Quite a bit," 5 = "Totally").

the sample reported average ratings at or below 3 ("Somewhat"). For the second indicator,

students (*N*= 114) reported that on average, the percentage of action steps they completed was

approximately 71% (S*D* = 26.55) of those included in the plan created during the first MAP

meeting. Nearly 54% of students reported an average action-plan completion rate of 75% or

higher, with 31 students (27%) reporting a completion rate of 100%. Less than 30% of the

sample reported completing under 50% of steps in their action plan.

Taken together, these findings indicate that AP/IB students receiving the MAP

intervention generally experienced high levels of goal attainment following their participation in

the first of two MAP meetings. This finding is significant given that goal attainment in the

context of this study represented behavioral changes aligned with specific factors (e.g., active

coping strategies, school engagement) that have been linked to AP/IB students' overall

academic/emotional well-being (Suldo et al., 2018). Thus, it is logical to consider self-reported

behavioral changes aligned with these predictors as proximal indicators of positive outcomes for

these AP/IB youth. Moreover, a key goal of school-based applications of MI is for students to

increase their motivation and confidence to accomplish behavioral change goals identified during

intervention session(s) (Lewis, Larson, & Korcuska, 2017). Since the goals identified by students

could potentially include a wide range of behaviors leading to improved emotional/academic

functioning (e.g., improvements in time and task management, increasing support-seeking

behaviors), it was appropriate to utilize a general outcome measure that captures the degree to

which students achieve the change goals developed during MI session(s). In the present study,

goal attainment demonstrated promise as an efficient indicator of positive outcomes in the

context of the MAP intervention. These findings provide preliminary support for MAP as a brief

(1-2 sessions lasting ~50-minutes in duration) Tier 2 intervention that promotes positive

behavioral change among AP/IB students. This adds to the existing literature demonstrating high levels of acceptability and feasibility of MAP among AP/IB students, teachers, and school-based mental health professionals (e.g., O'Brennan et al., 2020; Suldo et al., 2021).

Predictors of Goal Attainment Following MAP Intervention (Research Question 2)

In order to answer Research Question 2 (i.e., "*To what extent do student, MAP coach, and process variables predict AP/IB students' goal attainment following MAP Meeting One*"), hierarchical linear modeling (HLM) was used to examine the relationship between predictor and outcomes variables while accounting for the nesting of AP/IB students (*N*= 114) within 7 different MAP coaches. Of specific interest was whether indicators of academic risk (i.e., GPA), emotional risk (i.e., perceived stress, school satisfaction), students' gender, therapeutic alliance, and/or coach-reported perceptions of MI adherence predicted a composite goal attainment outcome variable[4] measured during the second of two MAP meetings. Overall, results of the HLM analysis identified two of the six variables as statistically significant predictors of students' overall goal attainment score: 1) school satisfaction (β = .19, *p* = .03); and 2) student perceptions of therapeutic alliance (β = .59, *p* = .02). These findings suggest that while holding all other student-level variables constant, higher levels of school satisfaction and perceived alliance with MAP coaches during MAP Meeting One significantly predicted a more positive response to the MAP intervention. The remaining variables included in the model (i.e., student GPA, student perceived stress, student gender, coach-reported therapeutic alliance, and coach-reported perceived MI adherence) were not statistically significant predictors of AP/IB students' goal

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[4] Z-scores calculated for each of the two indicators of goal attainment (i.e., self-reported goal attainment on 4-item measure and average % of action steps completed) were averaged in order to create a composite variable representing the overall outcome variable of interest (goal attainment).

attainment following MAP Meeting One. The subsequent paragraphs will detail results of the

HLM analysis for each predictor variable included in the model.

Extent of academic and emotional risk. In the context of the aforementioned larger

research study, AP/IB students were identified as *emotionally* at-risk if they reported high levels

of perceived stress or low levels of school satisfaction and *academically* at-risk if they had a

GPA lower than 3.0 or a specific course grade lower than a C. In addition, some students who

did not meet either criterion for emotional or academic risk were invited to participate in MAP as

peer leaders (with five of six students participating in both MAP meetings). Although the

screening procedures utilized specific cut scores to group students into four risk categories (i.e.,

no risk, academic risk only, emotional risk only, or both academic and emotional risk) prior to

receiving MAP, this study operationalized risk in two different ways. First, scores on screening

measures were operationalized as continuous predictor variables in order to determine whether

the level of academic and emotional risk predicted AP/IB students' goal attainment assessed

during MAP Meeting Two (Research Question 2). Second, this study examined whether the

presence of dual risk factors (emotional *and* academic risk) versus a single risk factor (emotional

or academic risk) assessed prior to MAP Meeting One predicted AP/IB students' goal attainment

assessed during MAP Meeting Two (Research Question 3).

In regard to the first conceptualization of risk (Research Question 2), the extent of

emotional and academic risk exhibited by AP/IB students who received the MAP intervention

was selected as a predictor to shed light on the characteristics of AP/IB students who may benefit

most from participation in MAP. Increasing our understanding of whether the severity of

academic and emotional risk predicts students' response to MAP is valuable because it offers

specific insights into how motivational interviewing interventions for AP/IB students may be

better tailored to address their specific needs. Results of the HLM analysis indicated a non-significant, positive relationship between students' semester GPA and students' goal attainment following MAP Meeting One ($\beta = .20$, $p = .09$). These findings were consistent with bivariate correlations demonstrating a non-significant relationship between GPA and students' goal attainment ($r = .11$, $p = .26$). Notably, AP/IB students with higher GPAs also tended to report higher levels of perceived stress ($r = .27$, $p < .01$). Thus, despite doing particularly well academically, these high-achieving students tended to experience greater stress. Although this finding may seem counterintuitive, it is possible that AP/IB students with high levels of perceived stress also experienced high levels of *eustress* (i.e., facilitative or "good" stress), which motivated them students to engage in helpful academic behaviors. Collectively, these findings suggest that AP/IB students may experience positive outcomes following MAP regardless of their level of academic achievement prior to receiving MAP.

In regard to indicators of emotional risk, there was a non-significant, negative relationship between students' levels of perceived stress and their goal attainment following MAP Meeting One ($\beta = -.10$, $p = .29$). As with this study's findings for GPA, results from the HLM analysis were consistent with bivariate correlations finding a non-significant relationship between perceived stress and goal attainment ($r = -.18$, $p = .053$). These findings suggest that AP/IB students may experience positive proximal outcomes during MAP regardless of their level of perceived stress prior to beginning the MAP intervention. On the other hand, Suldo et al. (2021), who examined the same sample as the present study, found that of the 16 students who were referred by MAP coaches to receive more intense supports after completion of the second MAP session, 13 students (81.3%) had perceived stress scores in the at-risk/elevated range. Thus, it is possible that students with elevated perceived stress did not respond completely to

MAP (i.e., appeared to the coaches as sufficiently distressed at the end of the MAP intervention that a referral for more intense supports was warranted) due to a mismatch between the level of support that two brief MAP meetings provides, and the intensity of support needed by these students. Notably, the current study revealed a significant correlation between students' perceived stress and school satisfaction ($r = -.32$, $p < .01$), indicating that students with higher stress tended to experience lower school satisfaction. School satisfaction was identified as a significant predictor of students' goal attainment following MAP Meeting One; it is possible that perceived stress did not reach statistical significance in multivariate analyses due to methodological factors (e.g., small sample size, type 1 error, etc.). Regardless, the null association between perceived stress and goal attainment align with results from Lundahl and Burke (2009)'s synthesis of four meta-analyses examining the effectiveness of MI in myriad contexts (i.e., Burke et al., 2003; Hettema et al., 2005; Lundahl et al., 2009; Vasilaki et al., 2006), finding a non-significant relationship between pre-treatment problem severity and MI outcomes.

In contrast to the findings for perceived stress, this study found that students' school satisfaction (another indicator of emotional well-being) was a significant predictor of students' goal attainment following MAP Meeting One ($\beta = .19$, $p = .03$). In other words, students who reported positive feelings about school (e.g., "I look forward to going to school" and "I learn a lot at school"), tended to report higher levels of goal attainment following participation in MAP than students who began the MAP intervention with lower school satisfaction. As discussed in Chapter 2, existing literature to date provides considerable rationale for the utilization of school satisfaction reports as a salient indicator of emotional functioning among AP/IB students as well as their counterparts enrolled in general education (Huebner & Gilman, 2006; Suldo et al., 2018).

For example, Huebner and Gilman (2006) found that, compared to students who reported disliking school, students with higher school satisfaction demonstrated higher functioning on several indicators of academic and social/emotional well-being. Moreover, they found that students reporting the highest 20% of scores on the school satisfaction subscale of the MSLSS, when compared to students with scores in the lowest 20%, reported higher global life satisfaction, hope, internal locus of control, and overall GPA. Students in the very low satisfaction group were also more likely to experience clinical levels of psychological symptoms. Among AP/IB students in particular, affective engagement at school has been identified as a promotive/protective factor for a variety of academic and social/emotional outcomes (Suldo et al., 2018). It is conceivable that students experiencing greater school satisfaction—who by definition have a more favorable perception of school including the adults within it—are more likely to form a therapeutic bond with their MAP coach in a short period of time, thus responding more effectively than students with lower school satisfaction. Consistent with this idea, the present study found that school satisfaction was significantly positively correlated with both student-reported therapeutic alliance ($r = .23$, $p < .05$) and coach-reported therapeutic alliance ($r = .20$, $p < .05$), indicating that students with higher school satisfaction tended to report a stronger alliance with their MAP coach. For students with lower school satisfaction, MAP coaches may need to utilize additional strategies to foster a therapeutic alliance with these students (e.g., spend more time in the "engage" phase of the intervention, offer to meet off campus, hold a 3rd MAP meeting, etc.).

Gender. Student gender was selected as a potential predictor variable in order to shed light on the influence of gender on proximal outcomes of AP/IB student well-being (i.e., goal attainment). Results of HLM analysis indicated a non-significant relationship between students'

gender and goal attainment following MAP Meeting One (β = -.16, p = .36). In other words, while holding all other student-level predictors constant, students' gender did not significantly predict their self-reported goal attainment following MAP Meeting One. These findings are consistent with research by Lundahl and Burke (2009) finding that gender was generally unrelated to intervention outcomes across a synthesis of four meta-analyses examining the effectiveness of MI in several different intervention contexts and populations (e.g., school-based, clinical inpatient and outpatient settings, etc.). Taken together, these findings provide preliminary evidence that MAP is likely to result in positive goal attainment for male and female AP/IB students alike.

   MAP coaches' perceptions of MI adherence. MAP coaches' self-reported MI adherence was selected as a predictor because of existing empirical research demonstrating a strong link between technical process factors of MI (e.g., relational and technical skills of coach) and increases in client change talk. In the context of MI-based interventions, increases in clients' utterances of change talk are correlated with subsequent behavioral changes (Magill et al., 2014, 2018; Romano & Peters, 2016; Pace et al., 2017). For instance, Glynn and Moyers (2010) found that clinicians' technical MI skills were directly associated with the frequency of clients' change talk. A randomized controlled study by Moyers, Houck, Glynn, Hallgren, and Manuel (2017) found that MI clinicians trained in nuanced MI-consistent technical skills (compared to generic MI OARS skills) were more likely to have less sustain talk from clients. Results of the present study indicated a non-significant, positive relationship between MAP coaches' self-reported MI adherence and students' composite goal attainment following MAP Meeting One (β = .22, p = .28). However, there was a significant correlation between the second indicator of goal attainment (i.e., average percentage of action plan completed) and MAP coaches' reports of MI-

adherence during MAP Meeting One ($r = .26$, $p < .01$). Perceived MI-adherence was not significantly related to the other indicator of goal attainment (i.e., average of 4-items rating goal attainment) or the overall composite goal attainment z-score. Of note, self-reported MI adherence was significantly positively correlated with coach-reported therapeutic alliance ($r = .22$, $p < .05$). Although perceived MI adherence was not a robust predictor of students' goal attainment, MAP coach proficiency appears to relate to the development of therapeutic alliance with students. This is aligned with existing research suggesting a positive relationship between MI technical factors (e.g., using OARS to evoke change talk and/or soften talk) and therapeutic alliance (Boardman et al., 2006). Although existing literature suggests that the presence of strong MI adherence reliably predicts the frequency and strength of clients' change talk (e.g., Miller & Moyer, 2017), the measurement of MI-adherent skills via a rating scale (vs. direct observation) is still relatively new. The 20-item self-report measure assessing the perceived MI-adherent skills of MAP coaches (i.e., *Measure of Perceived Proficiency [MOPP]*; Frey et al., 2017) utilized in this research study was found to have a high internal consistency ($\alpha = .95$). However, additional psychometric research examining the construct validity of this measure is warranted.

    Therapeutic alliance. Therapeutic alliance represents three dimensions of therapist-client relationships: the degree to which there is collaboration between therapist and client, the affective bond between therapist and client, and the ability for therapist and client to agree on treatment goals and tasks (Norcross, 2011). For the present study, therapeutic alliance was selected as a predictor variable for several reasons. First, MI is based on person-centered principles and values therapeutic alliance and client-interventionist collaboration at its core (Miller & Rollnick, 2012). According to Miller and Rose's (2009) causal theory of MI, a strong therapeutic alliance helps to promote the frequency of clients' change talk and ultimately leads to

positive behavior change. Second, therapeutic alliance has consistently been linked to positive

outcomes in a variety of intervention studies among diverse clinical and school-based samples

(Norcross, 2011). In a systematic review of MI intervention outcomes (Copeland et al., 2015),

therapeutic alliance was cited as a potential mechanism of change in a variety of MI intervention

contexts. Other relational factors, such as MI clinician's expression of empathy, were also

associated with improved within-session client factors (increased collaboration and engagement;

Moyers, Miller, & Hendrickson, 2005) as well as targeted outcome variables (decreased alcohol

use; Gaume, Gmel, Faouzi, & Daeppen, 2009).

Given the paucity of existing literature examining alliance discrepancies and therapeutic

outcomes (particularly in MI intervention contexts), along with some research demonstrating

differential outcomes based on youth vs. therapist alliance perspectives, the current study

examined student and MAP coach perspectives on alliance separately—rather than creating a

combined indicator—in part to avoid masking the potential importance of a given perspective in

predicting goal attainment. On average, ratings of therapeutic alliance following MAP Meeting

One were high from perspectives of both students (M= 4.65, SD= .43; range 1-5) and MAP

coaches (M= 4.43, SD= .59; range 1-5). These findings are consistent with recent research

finding relatively high average ratings of youth-reported (M= 3.9, SD= 0.7; range 1-5) and

therapist-reported (M= 3.9, SD= 0.5; range 1-5) therapeutic alliance during the first treatment

session (N= 127; median treatment length = 7 sessions across 6 months; van Benthem et al.,

2020). The present study found that student- and coach-reported therapeutic alliance ratings were

significantly positively correlated, $r(110) = .45, p < .001$. This moderate to large size association

is in contrast to several studies finding generally small to moderate relationships between youth

and counselor perspectives of alliance (Bickman et al., 2012; Creed & Kendall, 2005; Hawley & Garland, 2008).

Results of the HLM analysis indicated a non-significant relationship between coach-reported therapeutic alliance and students' goal attainment following MAP Meeting One ($\beta = -.07$, $p = .65$). In other words, coach-reported alliance was not a predictor of students' response to the MAP intervention. In contrast to these findings, results indicated a statistically significant positive relationship between student-reported therapeutic alliance and students' goal attainment following MAP Meeting One ($\beta = .59$, $p = .01$). When holding all other student-level predictor variables constant, it can be inferred that for every 1-unit increase in student-rated therapeutic alliance, students were expected to score .50 units higher on their composite goal attainment score. This is significant given that the outcome variable (goal attainment) was measured using a composite z-score, with a mean of 0 and a standard deviation of 1. These findings are consistent with some research suggesting that youth-reported alliance (vs. parent- or therapist-reported alliance) has stronger predictive power for therapeutic treatment outcomes (Hawley & Garland, 2008). In contrast to these findings, van Benthem et al. (2020) found significant associations for both youth-reported ($b = 1.29$) *and* therapist-reported ($b = 1.12$) therapeutic alliance and positive outcomes (indicated by a total score of <12.5 on the Strengths and Difficulties Questionnaire; Goodman, 1997) among youth enrolled in outpatient treatment for mental health or substance abuse difficulties. Similarly, Karver, De Nadai, Monahan, and Shirk (2018) conducted a meta-analysis examining the prospective relationship between therapeutic alliance and treatment outcomes among youth receiving psychotherapy. Among the 28 studies included in their meta-analysis, they found a small-to-medium effect size between therapeutic alliance and treatment outcomes, $r = .19$ ($k = 28$, $N = 2419$, $p < .01$, 95% confidence interval [.13, .25]). They examined

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"rater of alliance" (i.e., youth or therapist perspectives of therapeutic alliance) as a potential moderating variable in their study, which yielded non-significant effects on treatment outcomes. This contrasts with the present study, in which youth-reported therapeutic alliance was the only indicator of alliance that was identified as a statistically significant predictor of treatment outcomes.

It is plausible that the student experience of autonomy in the context of MI may result in a particularly authentic ratings of alliance by youth participants. Indeed, Kaplan et al. (2014) noted that interventions utilizing MI techniques work well with adolescents because the "spirit of MI" (e.g., valuing autonomy, using a collaborative approach) aligns well with adolescents' personal desire for autonomy and independence. High school students are often told how to behave from their parents and teachers without being given the opportunity to express their own values and goals. MAP allows students to share their strengths, values and goals, feel heard through empathetic responses and reflections from interventionists, and engage in collaborative goal-setting with affirmational adults. Findings from the current study support the idea that the relational aspect of MI may be as much or more important than the technical side of MI, especially for this adolescent population. Taken together, youth perceptions of the quality of the counseling relationship in the context of MAP appear to be more relevant to intervention response than coach perceptions, underscoring the importance of gathering data about alliance directly from students rather than rely on coach perceptions of the same construct.

Examining Dual Risk as a Predictor of Goal Attainment (Research Question 3)

In order to answer Research Question 3 (i.e., "*When controlling for students' gender, therapeutic alliance, and perceived MI adherence, to what extent does the presence of dual risk factors versus single risk factors predict AP/IB students' goal attainment following MAP*

Meeting One?), HLM was used to examine the relationship between predictor and outcomes variables while accounting for the nesting of students ($N = 109$) within 7 different MAP coaches. The peer leaders ($n = 5$) described in prior sections were removed from analysis as they did not fall into either risk group of interest (single risk vs. dual risk group). Of specific interest was whether the presence of dual risk factors (emotional *and* academic risk) versus a single risk factor (emotional *or* academic risk) predicted AP/IB students' goal attainment following MAP Meeting One. A total of 34 students (31.2% of sample) evidenced both academic and emotional risk, and 75 students (68.8%) had only academic or emotional risk. Results of the HLM analysis indicated a non-significant relationship between the presence of dual risk factors (emotional *and* academic risk factors) versus single risk factors (emotional or academic risk factors) and students' goal attainment following MAP Meeting One ($\beta = -.27$, $p = .13$). These findings contrast with some research indicating that the presence of comorbid mental health risk factors plays a significant role in predicting individuals' response to psychological interventions (e.g., cognitive behavioral therapy). For example, Amati, Banks, Greenfield, and Green (2018) conducted a systematic review to identify common factors that may or may not predict psychological treatment outcomes in community care settings. They found that pre-treatment symptom severity, as well as the presence of comorbid mental health disorders, were the most reliable factors that predicted individuals' response to community-based psychological treatment (Amati et al., 2018). Moreover, in a large-scale, multi-site international study of genetic, clinical, and demographic predictors of response to cognitive behavioral therapy for pediatric anxiety disorders, Hudson et al. (2015) found that the presence of comorbid conditions (including mood disorders and/or externalizing disorders) predicted a poorer response to treatment.

Limitations

        The findings of this study should be interpreted in light of several limitations. First, secondary analyses were conducted using existing data obtained from a prior MAP intervention study (Suldo et al., 2021). Additional information regarding the levels of goal attainment following MAP Meeting 2 at follow-up time points (e.g., 6 months post MAP Meeting 2) were not available for analyses. Thus, although the level of goal attainment reported by students during MAP Meeting 2 was conceptualized as an acceptable proximal indicator of MAP "effectiveness" in the present study, additional research is needed to determine the effectiveness of MAP in improving distal student outcomes of academic and emotional well-being over time. Second, the use of self-report data to measure several predictor variables (e.g., emotional risk, school satisfaction, therapeutic alliance, perceived MI-adherence) as well as the outcome variable of interest (i.e., goal attainment) may have introduced error due to participant biases, a desire to please their MAP coaches, and/or an inability to recall thoughts and behaviors over an extended period of time. In addition, many of the self-reported predictor variables (e.g., therapeutic alliance) may have been impacted by ceiling effects, which are characterized by high proportions of students reporting levels near the maximum score. Indeed, Karver et al. (2018) concluded that a common problem in youth-reported measures of therapeutic alliance is that the average scores tend to be well above the midpoint of most measurement scales. Karver et al. (2018) pointed out, "On the one hand, this might suggest that youths with alliance scores at the midpoint or lower of an alliance scale may have alliances with their therapist that need addressing. On the other hand, this pattern makes it unclear to a clinician what a higher alliance score actually means" (p. 342-343). A third limitation of this study was the homogenous sample of MAP coaches ($n= 7$), which included an all-female university-based research team, limiting

our ability to examine the impact of congruent (female-female, male-male) and incongruent (female-male) MAP coach-to-student gender relationships on intervention outcomes. There was also a higher proportion of AP to IB student participants (83.3% and 16.7% of sample, respectively), which could limit the generalizability of findings to IB students in particular. Furthermore, it is important to note that using members of a research team highly trained in MI therapeutic techniques may yield different results than examinations of MAP delivered by typical school-based mental health staff who may not have the time or skills to implement MAP with the same fidelity and/or adherence to MI technical and relational skills. This is highly relevant to the present study, given that student perceptions of therapeutic alliance (a significant predictor variable in this study) may *depend* in part on the level of proficiency in MI relational skills.

Study Contributions to Practice

Findings from this study revealed that AP/IB students receiving the MAP intervention generally experienced high levels of goal attainment following their participation in the first of two MAP meetings. This is significant given that goal attainment in the context of this study represented student-reported behavioral changes aligned with specific factors (e.g., active coping strategies, school engagement) that have been found to predict AP/IB students' overall academic/emotional well-being (Suldo et al., 2018). Thus, study provides preliminary support for the use of MAP as a brief and effective Tier 2 intervention to support at-risk AP/IB students. In addition, results of the HLM analysis conducted in this study indicated that students' pre-intervention level of school satisfaction and perceived therapeutic alliance during MAP Meeting One predicted higher goal attainment following MAP Meeting One. These findings allow potential end-users of MAP (e.g., school psychologists, school counselors, school social workers) to better understand features of the intervention (i.e., bond during the meeting) and

students most likely to respond positively to the intervention (i.e., level of school satisfaction) so that it can be better tailored to fit the needs of individual AP/IB students.

For instance, these findings suggest that incorporating strategies to increase student-reported therapeutic alliance may lead to better MAP outcomes. Horvath et al. (2011) examined the literature on therapeutic alliance and individual psychotherapy outcomes and provided several practice recommendations for increasing alliance between therapists and clients. First, the authors noted that therapeutic alliance is inextricably linked with the intervention used by clinicians; as such, the "therapist does not 'build alliance' but rather he or she does the work of treatment in such a way that the process *forges* an alliance with the client" (p. 15). In other words, therapeutic alliance is an indicator of the level of collaboration and shared commitment to the goals and processes of the intervention, or how well therapists and clients *work together* on therapeutic activities. MAP coaches should reinforce the shared collaboration on tasks and goals with their students using summary statements (e.g., *"I'm with you on this and think that your goal of increasing your attendance is an area that we can work on together!"*). Second, Horvath et al. (2011) recommended that clinicians ensure a good match between therapeutic tasks and clients' specific needs, expectations, and available resources/strengths. In the context of MAP, it is important for coaches to spend sufficient time exploring the needs of their students (i.e., developing discrepancy between student's weaknesses and personal goals) as well as personal strengths that may help students accomplish therapeutic tasks. This could be accomplished by recalling prior client information about personal strengths and connecting this to therapeutic tasks such as creating an action plan (e.g., "*You mentioned earlier that kindness is a character strength of yours. What valuable assets you bring to new relationships! How might you use this strength to accomplish your goal of fostering new connections with your IB teachers?*"). Third,

the way that therapists respond to negativity, hostility, or resistance expressed by their clients is

an important indicator of alliance. Therapists that maintain non-defensive responses to these

client characteristics are more likely to foster a stronger alliance (Horvarth et al., 2011). Within

the MI literature, this technique is called "rolling with resistance." Westra and Aviram (2013)

described this strategy as follows:

> In general, the strategies indicated for responding to both intrapsychic and interpersonal
>
> resistance are to "roll with it" or get alongside of it. Rather than being considered as an
>
> obstacle to therapeutic progress, resistance is viewed as valuable information to be
>
> understood, and one seeks to 'hear the wisdom in it' (Miller & Rollnick, 2002; Westra,
>
> 2012)" (p. 274).

Finally, Horvath et al. (2011) expressed the importance of assessing client perceptions of

alliance given that "misjudging the client's felt experience of the alliance (i.e., believing that it is

in 'good shape' when the client does not share this perception) could render therapeutic

interventions less effective" (p. 15). This recommendation is aligned with findings from the

present study demonstrating the predictive power of student (but not MAP coach) perceptions of

therapeutic alliance on goal attainment following MAP.

In addition, increasing students' positive feelings towards school and/or their AP/IB

program and teachers may lead to increased goal attainment among recipients of MAP. To this

end, Suldo, Bateman, and Gelley (2014) provided several recommendations for fostering school

satisfaction among children and adolescents in educational contexts. The first recommendation

noted by the authors was to support students' feelings of relatedness, competence, and autonomy

at school. This could be accomplished by creating opportunities for interpersonal connection

(e.g., using "ice breaker" activities in the classroom, assigning at-risk students to adult or peer

mentors, offering a variety of extracurricular activities, etc.), ensuring that adequate academic supports are in place, and allowing students to have opportunities to feel heard and have choices at school. Suldo et al. (2014) also recommended assessing students' life circumstances and stressors outside of the school context:

> Given that children who incur greater stress appear at risk for diminished school satisfaction, educators have an even greater rationale for enacting formal mechanisms to identify students incurring environmental stressors and refer these students for targeted supports (e.g., psychological services, school-based mentoring relationships). (p. 376).

In the context of MAP, students whose screening data indicates low school satisfaction may benefit from strategies aimed at increasing their feelings of relatedness, competence, and autonomy. This may be accomplished by discussing the perceived positive aspects of their schooling experience and by providing autonomy during the MAP intervention process (e.g., giving students the option to choose the MAP meeting time/day, preferred target behavior change goal, etc.).

Taken together, this study provides preliminary evidence to support the incorporation of MAP into a MTSS framework with universal (Tier 1), targeted (Tier 2), and intensive (Tier 3) academic and emotional supports for AP/IB students. Utilizing the same dataset as the present study, Suldo et al. (2021) found that approximately 15% (16 of 109) of the at-risk 9th grade AP/IB students who received MAP were identified by MAP coaches as potentially needing more intensive supports following MAP. For these students, MAP coaches may consider connecting them with traditional therapeutic treatment (e.g., individual or family counseling, medication management) and/or educational interventions (e.g., curriculum change to general education [planned departure from AP/IB], remedial supports in AP/IB). To this end, MAP has the

potential to not only provide preventative Tier 2 supports to at-risk AP/IB students, but also serves as a mechanism to identify students in need of more intensive services due to continued emotional or academic distress. This is aligned with the core features of effective and comprehensive MTSS systems for supporting students' mental health (Hoover et al., 2019).

Study Contributions to Existing Literature

At present, there is a paucity of empirical studies examining the effectiveness of school-based applications of motivational-interviewing for AP/IB students exhibiting indicators of emotional and/or academic risk. This study provides support for the MAP intervention as a brief, time-limited (1-2 session) Tier 2 intervention aimed at supporting the social/emotional and academic well-being of AP/IB students (O'Brennan et al., 2020; Suldo et al., 2021). Given the limited research examining the effectiveness and potential active ingredients of SBMI interventions among AP/IB students, the present study helps to fill this gap in the research literature. Specifically, this study revealed high levels of goal attainment for most students following a first MAP meeting, as well as identified robust predictors of that goal attainment (i.e., student-reported therapeutic alliance and school satisfaction). In addition, this study determined that the presence of dual risk factors (emotional *and* academic risk) did not diminish the likelihood of a positive response to MAP (goal attainment) when compared to the presence of a single risk factor (emotional *or* academic risk). Results indicated that while holding all other student-level predictors constant, students who perceived a stronger alliance with their MAP coach during MAP Meeting One were more likely to evidence a positive response to the MAP intervention in terms of goal attainment, regardless of how student academic and emotional risk was operationalized (i.e., as continuous measures of risk vs. dichotomous measure of single or dual risk). Finally, this research helps to expand the MI literature by shedding light on the factor

structure, internal reliability, and utility of a novel 20-item measure of perceived MI adherence in educational applications of MI.

Future Directions

Despite the significant empirical and practical contributions that the current study provides, there are several areas of future research that are warranted in determining the effectiveness of MAP and improving measurement of key variables examined in this study. First, future studies evaluating the effectiveness of MAP among larger samples of AP/IB students would allow for increased statistical power to detect significant relationships between student-level predictors and outcome variables (e.g., goal attainment), as well as potential moderating variables (e.g., student gender). In addition, future evaluations of MAP would benefit from utilizing MAP coaches with varying levels of MI training and/or competence (e.g., existing school mental health staff such as school psychologists, school social workers, and school counselors with various prior experiences with MI, as well as adequately trained teachers). This would help shed light on the feasibility of MAP for use in schools, as well as the necessary training procedures and levels of MI proficiency that may be necessary for successful implementation of MAP. Finally, although student-reported levels of goal attainment served as an acceptable proximal indicator of MAP "effectiveness" in the present study, additional research is needed to determine the effectiveness of MAP in improving distal student outcomes of academic and emotional well-being over time, such as earning college credit for AP/IB coursework and/or experiencing high levels of subjective well-being and low levels of psychopathology.

Additional research is also needed to better understand the psychometric properties of key measures utilized in this study. For instance, research is needed to determine the extent to

which the 20-item measure of perceived MI adherence utilized in the present study (MOPP; Frey et al., 2017) is a reliable and valid measure of MI competence in the context of MAP and/or other SBMI interventions. This could be accomplished by examining the relationship between this self-reported measure and current gold-standard assessment of clinicians' competence in MI (e.g., the Motivational Interviewing Treatment Integrity Code [MITI 4.2.1]; Moyers, Manuel, & Ernst, 2014). This may help to distinguish between MAP coaches' perceived MI *adherence* during MAP and their actual levels of MI *quality* (as rated from blind observers coding with the MITI), as well as provide support for the construct validity of the MOPP. In addition to measures of MI adherence and/or quality, additional research is needed to ensure reliable and valid methods for measuring youth and MAP coach reported therapeutic alliance. The present study utilized the youth-reported TAQS (Bickman et al., 2010) and the MAP coach-reported TAQR (Bickman et al., 2010) to measure perceptions of alliance. Although existing research provides evidence for the psychometric properties of the TAQS/TAQR in the context of intervention research (e.g., Bickman et al., 2010, 2012; Duppong Hurley et al., 2015; Shirk et al., 2011), these measures are brief (5-items or less) and are generally intended for use as clinical tools. Thus, collecting and analyzing observer ratings of alliance and/or utilizing lengthier measures of alliance (such as the Working Alliance Inventory [Horvath & Greenberg, 1989]) that are intended for research purposes as opposed to clinical purposes may strengthen our understanding of the complex and nuanced perceptions of alliance in the context of MAP.

Summary

Students enrolled in accelerated curricula (including AP courses and IB programs) represent a unique group of adolescents given the high demands of their rigorous, college-level coursework and the elevated stress they experience compared to their peers in the general

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education (Suldo & Shaunessy-Dedrick, 2013; Suldo, Shaunessy, & Hardesty, 2008). These students are often overlooked for school-based services given their relative academic success and general lack of disruptive behavior problems. However, many AP/IB students experience high levels of stress despite experiencing academic success (Suldo & Shaunessy-Dedrick, 2013). Aligned with their foundational research examining unique predictors of emotional and academic well-being among AP/IB youth, Suldo and colleagues iteratively developed and piloted (1) a universal social-emotional learning program to promote factors identified in their foundational research (i.e., the Advancing Coping and Engagement [ACE] Program; Shaunessy-Dedrick et al., 2021); (2) screening procedures to identify at-risk AP/IB students following implementation of the ACE Program (Suldo, Storey, et al., 2019); and (3) a school-based motivational interviewing intervention to provide Tier 2 supports for AP/IB students demonstrating academic and/or emotional risk factors (i.e., the MAP intervention; O'Brennan et al., 2020; Suldo et al., 2021). Preliminary research by O'Brennan et al., (2020) and Suldo et al., (2021) has identified MAP as a promising, acceptable, and time-limited Tier 2 intervention for high achieving high school students (O'Brennan et al., 2020; Suldo et al., 2021). The current study expands on these findings and provides further evidence that AP/IB students receiving the MAP intervention generally experienced high levels of goal attainment following their participation in the first of two MAP meetings. This finding is significant given that goal attainment in the context of this study represented student-reported behavioral changes aligned with specific factors (e.g., active coping strategies, school engagement) that are tied to AP/IB students' overall academic/emotional well-being (Suldo et al., 2018). In addition, results of this study found that levels of school satisfaction and student perceived therapeutic alliance predicted AP/IB students' overall goal attainment score between the first and second meetings of the MAP intervention.

This information augments existing literature and provides valuable information to school

psychologists and educational stakeholders seeking recommendations for brief and effective Tier

2 interventions that can help support their at-risk AP/IB students.

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Appendix A. Parent Consent Form

Districts A and 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

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

District C (ACE Program Consent):

Dear Parent or Guardian:

This Letter Tells You...
About a research study that will be done at your child's school by researchers from the University of South Florida (USF). We are doing this study to evaluate the Advancing Coping and Engagement (ACE) program. The ACE program is a classroom curriculum to teach 9th grade students ways to manage stress from their International Baccalaureate (IB) or Advanced Placement (AP) courses. The ACE program seeks to improve academic and emotional well-being among AP and IB students.

Who We Are
The ACE program was developed by USF Professors Shannon Suldo and Elizabeth Shaunessy-Dedrick. Our research team includes graduate students and school psychologists in the USF College of Education. We are doing the study in cooperation with the district and school administrators to ensure the study provides information that will be helpful to students, teachers, and families.

Why We are Requesting Your Child's Participation
This study is part of a federally-funded project: "Supporting High School Students in College-Level Classes." Your child is being asked to participate because he or she is a 9th grade student taking AP or IB classes. Your decision to allow your child to participate in this research study is voluntary. Refusal to participate in the research will involve no academic penalty or loss of benefits to which your child is otherwise entitled. You are free to withdraw your student from this research study 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 child's student status, his or her grades, or your relationship with your high school, school district, USF, or any other party. Neither you nor your child will be paid for your child's participation in the study.

> *Potential Benefits of Your Child's Participation in This Study*: The goal of the ACE program is to improve 9th grade AP and IB students' coping skills and strong connections to their school, and help them stay happy, experience less burnout and be academically successful. Students who participate in the ACE program will also be offered brief, extra supports in the second half of the school year if they have challenges managing their academic demands. We are interested to see how well the ACE program impacts students' emotional and academic well-being. This information will help inform the development of the ACE program and improve it for future AP and IB students. Your child will receive no direct benefits by participating in this study that will evaluate the ACE program.

> *Possible Risks If Your Child Participates in This Study*: 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. Your child will be asked personal questions about their feelings that can make some people upset. They can refuse to answer any questions that make them uncomfortable, and choose to stop their participation at any time. There are no known additional risks to those who take part in this study.

What Will Happen During This Study
There are four main parts to this research study: (1) program evaluation, (2) ACE program feedback (3) mid-year screening, and (4) extra support for some students.

> *Program Evaluation*: Schools will be randomly assigned to one of two groups: *intervention* or *control*. Students in both groups will be asked to complete a survey packet asking about how they cope with academic stress, feelings about school, and emotional well-being. Emotional well-being includes questions about students' happiness and current symptoms of mental and psychological problems. Students will also be asked to share their demographic information, including two questions about parents' educational attainment. Survey packets will be given near the beginning and end of the school year, and will take approximately 45 minutes to complete on each occasion. All activities will be during regular school hours and scheduled to be minimally disruptive to your child's academic day. You or your child have the right to inspect the evaluation surveys before they are administered, if a request is made within a reasonable period of time. The surveys and directions for administering the surveys will be available at your school within a reasonable period of time prior to the evaluation administration. Participation in this study also involves a review of your child's educational records. This includes demographics such as, 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 (grades and end-of-course exam scores), attendance records, and discipline history during 2017-18. Consenting for your child to participate in this project indicates your consent for a release of your child's information (limited to the aforementioned educational records for the 2017-18 school year) to the USF team for research purposes.

➢ *Weekly ACE Program Feedback:* Schools assigned to the *intervention* group will receive support through USF during the 2017-18 school year. During the fall semester, USF ACE team members along with one of your child's teachers, will work together to deliver the ACE program to select classes of 9th grade AP/IB students. Students in schools in the intervention group will be asked to provide feedback on the content of the ACE program at the end of each weekly presentation through brief rating scales. Completion of these questions will take about 5 minutes on each occasion. Schools placed into the *control* group will receive the ACE program training and intervention materials for use during the 2018-19 school year. 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.

➢ *Mid-Year Screening:* In the *intervention* group schools, the USF team will examine students' emotional and academic status through a screening done mid-way through the year. During this screening, students will complete a short 5-minute survey with questions about their current level of stress and feelings about school. You or your child have the right to inspect the screening instruments to be used before the brief survey is administered. The surveys and directions for administering the surveys will be available at your school within a reasonable period of time prior to the screening administration. Taking part in the screening will enable your child to be considered for extra support in the spring.

➢ *Extra Support:* Extra support will be offered to students whose screening data indicate signs of challenges with managing academic demands. That support involves 1-2 meetings with an ACE coach from the USF research team. Within each 30-60 minute meeting, students describe their values, strengths, and goals, and plan strategies to achieve their future goals. At the end of each meeting, students will be asked to provide feedback on the meeting content and usefulness, through completing brief rating scales. Completion of these questions will take about 5 minutes on each occasion. Additional consent forms for this part of the project will be given out to select students at a later date and only to students who have already received parent permission to participate in the screening.

Confidentiality of Your Child's Responses

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 your child's specific responses will not be shared with school staff or anyone other than our research team. However, if your child indicates on surveys or in comments during meetings with an ACE coach that he or she intends to harm him or herself or someone else, or that he or she is in extreme emotional distress, then we will contact district mental health counselors to keep your child and others safe.

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. Consenting for your child to participate in this project also indicates your consent for your child to be audio recorded. Only we will have access to the locked file cabinet stored at USF that will contain all records linking code numbers to participants' names.

We plan to use information from this study to evaluate and improve ACE program materials that are intended to support AP and IB students. Results from data collected during this study may be published. However, the data 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. All records from the study will be destroyed in five years.

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.

USF

Your Child's Participation in This Study

To permit your child to participate, complete the consent form by signing your name at the bottom of this page for the portion(s) of the project you agree your child can take part in. You can consent for your child to take part in only one, or both, of the two portions of the project summarized below. Your child does not have to participate in any part of this research.

  (1) The evaluation of the ACE program ("Consent for Child to Take Part in the Evaluation"). Students whose parents permit their child to participate in the evaluation will complete the pre- and post-assessment survey packet, and have their school records examined by the USF team. Also, students enrolled in intervention schools will complete brief rating scales after each weekly presentation of the ACE program to give their feedback on program content. Students whose parents do not permit their child to participate in the evaluation will still receive information about coping and engagement through their class if their school is in the intervention group, but students will not provide weekly feedback on program materials. Students whose parents do not permit their child to participate in the evaluation will not complete the survey packet nor have their school records examined by USF.

  (2) The mid-year screening within the ACE program ("Consent for Child to Take Part in the Screening"). In the schools in the intervention group: students whose parents permit their child to participate in the mid-year screening will complete a short survey about their stress and feelings about school, and have their first semester grades and attendance examined by the USF team. Students identified through the screening will receive separate forms later in the school year requesting parent and student permission to receive extra support from an ACE coach. Students whose parents do not permit their child to participate in the screening will not be considered for extra support.

Please have your child return the green paper with the completed form below to his or her designated teacher.
Keep the other copy of this letter (printed on gold paper) for your records.

Sincerely,
Shannon Suldo, Ph.D.   Elizabeth Shaunessy-Dedrick, Ph.D.
Professor, School Psychology Program   Professor, Gifted Education Program
Department of Educational and Psychological Studies   Department of Teaching and Learning

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CONSENT TO TAKE PART IN THIS STUDY
(Form for Parent or Guardian to Complete)

Information about My Child:

_____   _____   _____
Printed name of child taking part in the study   Grade level of child   High school

(1) Consent for Child to Take Part in the EVALUATION
I freely give my permission to let my child take part in the study to evaluate the ACE program. I understand that this is research. I have received a copy of this letter and consent form for my records.

_____   _____   _____
Signature of parent of child taking part in the study   Printed name of parent   Date

(2) Consent for Child to Take Part in the MID-YEAR SCREENING
If my child's school is randomly assigned to the *intervention* group, I freely give my permission to let my child take part in the mid-year screening. I understand that this is research. I have received a copy of this letter and consent form for my records.

_____   _____   _____
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

District C (MAP Consent):

Dear Parent or Guardian:

This Letter Tells You...
About a study being done at your child's school by researchers from the University of South Florida (USF). We are doing this study to evaluate the Advancing Coping and Engagement (ACE) program. The ACE program includes a classroom curriculum to teach 9th grade students ways to manage stress from their International Baccalaureate (IB) or Advanced Placement (AP) courses. Earlier in the school year, you gave your permission for your child to take part in a mid-year screening to examine students' stress, feelings at school, and first semester grades and attendance. The next step in the ACE program is to offer extra support to students whose mid-year screening data indicates signs of challenges with managing academic demands.

Who We Are
The ACE Program was developed by USF Professors Shannon Suldo and Elizabeth Shaunessy-Dedrick. Our research team includes graduate students and school psychologists in the USF College of Education. We are doing the study in cooperation with the district and school administrators to ensure the study provides information that will be helpful to students, teachers, and families.

Why We are Requesting Your Child's Participation
This study is part of a federally-funded project: "Supporting High School Students in College-Level Classes." We are doing this study to improve and evaluate classwide and extra supports for students in AP and IB classes. We are requesting your child's participation in this next step of the study because the results of the mid-year screening indicate that your child may be experiencing challenges with managing academic demands. Your decision to allow your child to participate in this research study is voluntary. Refusal to participate in the research will involve no academic penalty or loss of benefits to which your child is otherwise entitled. You are free to withdraw your student from this research study 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 child's student status, his or her grades, or your relationship with your high school, school district, USF, or any other party. Neither you nor your child will be paid for your child's participation in the study.

> *Potential Benefits of Your Child's Participation:* The extra support is intended to help students develop coping strategies and school engagement linked to emotional and academic success in AP and IB. Therefore, your child may benefit directly from getting the extra support. We are evaluating the usefulness of the extra support with lots of students who may have challenges managing their academic demands. The information that we collect from students will be used to improve our extra support materials. This will help make sure the program works well for future AP and IB students.

> *Possible Risks If Your Child Participates in This* Study: 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. Your child will be asked personal questions about their feelings that can make some people upset. They can refuse to answer any questions that make them uncomfortable, and choose to stop their participation at any time. There are no known additional risks to those who take part in this study.

What Will Happen During This Study
Extra supports offered to participating students include 1 or 2 meetings with an ACE coach. These meetings are about 30-60 minutes long. Meetings will be during school hours, at a time that best fits your child's schedule. In the first meeting, students describe their personal values, strengths, and goals. Students connect their personal goals to the topics discussed in the ACE program—coping and engagement. Students select an area for improvement, and work with the ACE coach to create an action plan. Students can meet with the ACE coach at a later date. In the second meeting, students review their progress and/or select another target for improvement.

ACE coaches are from the USF research team. These ACE coaches include school psychologists and graduate students in school psychology who will be supervised by Dr. Suldo, a licensed psychologist. The ACE coaches do not work for Pinellas County Schools. Allowing your child to receive extra support indicates your authorization for student contact, specifically for an ACE coach to see your child on campus for the provision of counseling services (limited to the aforementioned meetings). You may revoke this authorization at any time by notifying in writing of your desire for such.

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Confidentiality of Your Child's Responses

During all meetings, ACE coaches will respect the privacy of your family and no information that identifies your child will be retained or used after the extra support has ended. Your child's privacy and research records, including any information discussed in the extra support meetings, will not be shared with school staff, and 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, your child's specific responses will not be shared with anyone other than the research team. Although this information is not explicitly discussed, any evidence of child abuse or neglect disclosed during an extra support meeting must be reported to authorities. Also, if your child says that he or she plans to harm someone or him or herself, or that he or she is in extreme emotional distress, research staff (ACE coaches) must tell people at the school to help your child.

Your child's responses during extra support sessions will be digitally audio recorded, and then assigned a code number to protect the confidentiality of his or her statements. Consenting for your child to participate in this project also indicates your consent for your child to be audio recorded. Only we will have access to the locked file cabinet stored at USF that will contain all records linking code numbers to participants' names.

Results from data collected during this study may be published. However, the data from your child will be combined with data from other people. The published results will not include your child's name or any other information that would in any way personally identify your child. All records from the study will be destroyed in five years.

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.

Your Child's Participation in This Study

Complete the consent form below (titled "Consent to Participate in Extra Support") to indicate if you permit, or do not permit, your child to receive the extra support. *Please 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, Ph.D.
Professor, School Psychology Program
Department of Educational and Psychological Studies

Elizabeth Shaunessy-Dedrick, Ph.D.
Professor, Gifted Education Program
Department of Teaching and Learning

CONSENT TO PARTICIPATE IN EXTRA SUPPORT

(Form for Parent or Guardian to Complete)

_____ Yes, I give permission for my child (_____) to take part in extra support offered to some AP or IB students at my high school. I hereby grant permission for the USF ACE Program to have access to my student at school.

_____ No, I do not give permission for my child (_____) to take part in the extra support offered to some AP or IB students at my high school. I do not want the USF ACE Program to have access to my student at 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 B. Student Assent Form

Districts A and B:

Dear Student:

You are being asked to take part in a research study. This study is part of a larger project we are conducting. The goal of the project is to evaluate the Advancing Coping and Engagement (ACE) program. The ACE program is a classroom curriculum that teaches students ways to manage stress from classes. ACE is for students in Advanced Placement (AP) or International Baccalaureate (IB) classes. This program aims to improve students' academic and emotional well-being.

✓ Who We Are: We are USF Professors Shannon Suldo and Elizabeth Shaunessy-Dedrick. Our research team includes graduate students and school psychologists in the USF College of Education. We are doing the study with leaders in your school. That way, the study will provide information that will be helpful to students, teachers, families, and school leaders.

✓ Why We're Asking You to Take Part in the Study: This study is part of a project titled, "Supporting High School Students in College-Level Classes." You are being asked to take part because you are a student in an AP or IB class.

✓ Why You Should Take Part in the Study: Schools need effective ways to help high school students manage the demands of college-level courses. To address this need we are evaluating the ACE program. The ACE program was created to build all AP and IB students' coping skills and strong connections to their school. We are also examining the usefulness of extra support—coaching meetings—offered to students who may have challenges managing their academic demands. We will use the information that we collect from students to improve our materials. The evaluation will determine the program's impact on students' emotional and academic well-being. Please note you will not be paid for taking part in the study. However, all students who participate by completing a packet of surveys on personal well-being will receive a $10 gift card on each occasion. Also, students in *intervention* schools who provide feedback on coaching meetings will receive a $10 gift card on each occasion. All students who return this completed form (whether or not you participate) will be entered in a drawing for a $50 gift card.

✓ What Will Happen During This Study: There are four main parts to this research study: (1) program evaluation, (2) ACE program feedback (3) mid-year screening, and (4) extra support for some students.
  ➢ *Program Evaluation:* Schools will be randomly assigned to one of two groups: *intervention* or *control*. Students in both groups will be asked to complete a survey packet asking about how they cope with academic stress, feelings about school, and emotional well-being. Emotional well-being includes questions about students' happiness and current symptoms of mental and psychological problems. Students will also be asked to share their demographic information. Survey packets will be given near the beginning and end of the school year, and will take about 45 minutes to complete each time. All activities will be during regular school hours. They will be scheduled to be minimally disruptive to your academic day. You have the right to inspect the evaluation surveys before they are administered, if a request is made within a reasonable period of time. The surveys and directions for administering the surveys will be available at your school within a reasonable period of time prior to the evaluation administration. Participation in this study also involves a confidential review of your school records. This includes demographics such as, 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; grades and end-of-course exam scores, attendance, and discipline history during 2017-18.
  ➢ *Weekly ACE Program Feedback:* Schools assigned to the *intervention* group will receive support through USF during the 2017-18 school year. During the fall semester, USF ACE team members along with one of your teachers, will work together to deliver the ACE program to select classes of 9th grade AP/IB students. Students receiving the ACE Program will be asked to provide feedback on the curriculum content at the end of each weekly presentation through brief rating scales. Completion of these questions will take about 5 minutes on each occasion. Schools placed into the *control* group will receive the ACE program training and intervention materials for use during the 2018-19 school year.
  ➢ *Mid-Year Screening:* In the *intervention* group schools, the USF team will examine students' emotional and academic status through a screening done mid-way through the year. The USF team will look at students first semester grades, and ask teachers which students may need extra help. Students will complete a short 5-minute survey with questions about their stress and feelings about school. You have the right to inspect the screening instruments to be used before the brief survey is administered. The surveys and directions for administering the surveys will be available at your school within a reasonable period of time prior to the screening.
  ➢ *Extra Support:* Extra support will be offered to students whose screening data indicate 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, strengths, and goals, and plan strategies to achieve their future goals. At the end of each meeting, students will be asked to provide feedback on the meeting content and usefulness, through completing brief rating scales. Completion of these questions will take about 5 minutes on each occasion.

In total, participation in research on the ACE program will take no more than 2 hours (*control* group) to 2 to 3 hours (*intervention* group) of your time during the 2017-18 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 research assistants. Your responses during some program activities will be 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. Although your specific responses will not be shared with school staff, if you indicate that you intend to harm yourself or someone else, or if your responses on surveys or comments during meetings with an ACE coach indicate extreme emotional distress, we will contact district mental health counselors to ensure your safety as well as others' safety.

✓ Please Note: Your involvement in this research study is completely voluntary. By signing this form, you are agreeing to take part. If you choose not to participate, or if you wish to stop taking part in the study at any time, you will not be punished in any way. If you choose not to participate, it will not affect your grades or your relationship with your high school, USF, or anyone else. You do not have to participate in this study.

✓ What We'll Do With Your Responses: We plan to use the information from this study to further develop and improve materials for a program created to promote academic success and emotional well-being among AP and IB students. The results of this study may be published. However, your responses will be combined with responses 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 study, please raise your hand now or ask us at any time. You may contact us later at (813) 974-2223 (Dr. Suldo) or (813) 974-7007 (Dr. Shaunessy-Dedrick). 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. Refer to eIRB # 22787.

Sincerely,
Shannon Suldo, Ph.D.   Elizabeth Shaunessy-Dedrick, Ph.D.
Professor of School Psychology   Professor of Gifted Education
Department of Educational and Psychological Studies   Department of Teaching and Learning

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ASSENT 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 assent form for my records.

_____   _____   _____
Signature of child taking part in the study   Printed name of child   Date

(Portion for USF to Complete): Statement of Person Obtaining Informed Assent

I certify that participants have been provided with an informed assent 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 assent   Printed name of person   Date

USF
UNIVERSITY OF

District C (ACE Program Assent):

USF
UNIVERSITY OF
SOUTH FLORIDA
COLLEGE OF EDUCATION

Dear Student:

This Letter Tells You...
About a study being done at your school by researchers from the University of South Florida (USF). You are being asked to take part in this study. We are doing this study to evaluate the Advancing Coping and Engagement (ACE) program. The ACE program is a classroom curriculum. It was designed to teach students ways to manage stress tied to their International Baccalaureate (IB) or Advanced Placement (AP) courses. The ACE program seeks to improve academic and emotional well-being among AP and IB students.

Who We Are
We are Shannon Suldo and Elizabeth Shaunessy-Dedrick, Professors in the USF College of Education. Our research team includes graduate students and school psychologists who are also in the USF College of Education. We created the ACE program to help 9th grade students in AP or IB classes feel good and achieve well at school.

Why We are Requesting Your Participation
This study is part of a project called "Supporting High School Students in College-Level Classes." We are doing this study to figure out how well the classwide and extra supports for students in AP and IB classes work to improve student success. Also, we are trying to improve the materials in the ACE program. Your decision to assent (agree) to take part in the research study, including the extra support meetings, is voluntary. If you refuse to take part, you will not get in trouble or lose access to the supports that are always available in your class or at your school. You are free to stop taking part in this study at any time. Deciding to participate, not to participate, or to stop participating at any point during the study, will in no way affect your student status, grades, or your relationship with your high school, school district, USF, or anyone else. You will not be paid for taking part in the study.

> *Potential Benefits of Participation in This Study*: The goal of the ACE program is to improve 9th grade AP and IB students' coping skills and strong connections to their school, and help them stay happy, experience less burnout and be academically successful. We also created brief, extra supports for students who may have challenges managing their academic demands. We are interested to see how well the ACE program impacts students' emotional and academic well-being. The information that we collect from students will be used to improve our classwide and extra support materials, for better use with future AP and IB students. You will receive no direct benefits by participating in this study that will evaluate the ACE program.

> *Possible Risks If You Participate in This Study*: 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. You will be asked personal questions about your feelings that can make some people upset. You can refuse to answer any questions that make you uncomfortable, and choose to stop taking part at any time. There are no known additional risks to students who take part in this study.

What Will Happen During This Study
There are four main parts to this research study: (1) program evaluation, (2) ACE program feedback (3) mid-year screening, and (4) extra support for some students.

> *Program Evaluation*: Schools will be randomly assigned to one of two groups: *intervention* or *control*. Students in both groups will be asked to complete a survey packet asking about how they cope with academic stress, feelings about school, and emotional well-being. Emotional well-being includes questions about students' happiness and current symptoms of mental and psychological problems. Students will also be asked to share their demographic information. Survey packets will be given near the beginning and end of the school year, and will take approximately 45 minutes to complete on each occasion. All activities will be during regular school hours and scheduled to be minimally disruptive to your academic day. You have the right to inspect the evaluation surveys before they are administered, if a request is made within a reasonable period of time. The surveys and directions for administering the surveys will be available at your school within a

reasonable period of time prior to the evaluation administration. Participation in this study also involves a review of your educational records. This includes demographics such as, 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 (grades and end-of-course exam scores), attendance records, and discipline history during 2017-18.

➢ *Weekly ACE Program Feedback*: Schools assigned to the *intervention* group will receive support through USF during the 2017-18 school year. During the fall semester, USF ACE team members along with one of your teachers, will work together to deliver the ACE program to select classes of 9th grade AP/IB students. Students in schools in the intervention group will be asked to provide feedback on the content of the ACE program at the end of each weekly presentation through brief rating scales. Completion of these questions will take about 5 minutes on each occasion. Schools placed into the *control* group will receive the ACE program training and intervention materials for use during the 2018-19 school year. In total, participation will take no more than 2 hours (*control* group) to 2 to 3 hours (*intervention* group) of your time during the 2017-18 year.

➢ *Mid-Year Screening*: In the *intervention* group schools, the USF team will examine students' emotional and academic status through a screening done mid-way through the year. Students with parent permission to participate in the screening will complete a short 5-minute survey with questions about their current level of stress and feelings about school. You have the right to inspect the screening instruments to be used before the brief survey is administered. The surveys and directions for administering the surveys will be available at your school within a reasonable period of time prior to the screening administration.

➢ *Extra Support*: Extra support will be offered to students whose screening data indicate signs of challenges with managing academic demands. That support involves 1-2 meetings with an ACE coach from the USF research team. Within each 30-60 minute meeting, students describe their values, strengths, and goals, and plan strategies to achieve their future goals. At the end of each meeting, students will be asked to provide feedback on the meeting content and usefulness, through completing brief rating scales. Completion of these questions will take about 5 minutes on each occasion. Additional consent and assent forms for this part of the project will be given out to select students at a later date, only to students who previously received parent permission to participate in the screening.

Confidentiality of Your Responses
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 your specific responses will not be shared with school staff or anyone other than our research team. Although this information is not explicitly discussed, any evidence of child abuse or neglect disclosed during completion of surveys or through comments made to a research staff must be reported to authorities. Also if you write or say that you plan to harm someone or yourself, or if your responses on surveys or comments during meetings indicate extreme emotional distress, research staff (ACE coaches) must tell people at the school to help you.

Your responses during some program activities will be digitally audio recorded, 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.

We plan to use information from this study to evaluate and improve ACE program materials that are intended to support AP and IB students. Results from data collected during this study may be published. However, the data 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. All records from the study will be destroyed in five years.

Questions?
If you have any questions about this research study, please raise your hand now or ask us at any time. You may contact us later at (813) 974-2223 (Dr. Suldo) or (813) 974-7007 (Dr. Shaunessy-Dedrick). If you have questions

USF

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 USF at 813-974-5638. Refer to eIRB # 22787.

Your Participation in This Study
If you would like to take part in the evaluation of the ACE program, complete the assent form below by signing and printing your name (titled "Assent to Participate in Evaluation"). Keep the other copy of this letter for your records. As a reminder, student who take part in the evaluation will complete the pre- and post-assessment survey packet, and have their school records examined by the USF team. Also, students enrolled in intervention schools will complete brief rating scales after each weekly presentation of the ACE program to give their feedback on program content. You do not have to participate in any part of this research. Students who do not agree to participate in the evaluation will still receive information about coping and engagement through their class if their school is in the intervention group, but will not complete the weekly feedback forms. Students who do not agree to participate in the evaluation will not complete the packet of surveys nor have their school records examined by USF.

Sincerely,
Shannon Suldo, Ph.D.   Elizabeth Shaunessy-Dedrick, Ph.D.
Professor of School Psychology   Professor of Gifted Education
Department of Educational and Psychological Studies   Department of Teaching and Learning

---

ASSENT TO PARTICIPATE IN EVALUATION
(Form for Student to Complete)

I freely give my permission to take part in this evaluation study. I understand that this is research. I have received a copy of this letter and assent form for my records.

_____   _____   _____
Signature of child   Printed name of child   Date

(Portion for USF to Complete):
Statement of Person Obtaining Informed Assent
I certify that participants have been provided with an informed assent 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 assent   Printed name of person obtaining assent   Date

USF

District C (MAP Assent):

Dear Student:

This Letter Tells You...
About a study being done at your school by researchers from the University of South Florida (USF). The goal of the study is to figure out how well the USF ACE program helps students succeed. The USF ACE program aims to give all AP and IB students effective ways to manage academic stress and strengthen school connections. Congratulations on completing the ACE program lessons in AP Human Geography or IB Inquiry Skills! The USF ACE program is now offering several students in your class extra support to keep developing effective coping strategies and strong connections.

Who We Are
We are Shannon Suldo and Elizabeth Shaunessy-Dedrick, Professors in the USF College of Education. Our research team includes graduate students and school psychologists who are also in the USF College of Education. We created the classwide ACE program and the extra supports to help 9th grade students in AP or IB classes feel good and achieve well at school.

Why We are Requesting Your Participation
This study is part of a project called "Supporting High School Students in College-Level Classes." We are doing this study to figure out how well the classwide and extra supports for students in AP and IB classes work to improve student success. Also, we are trying to improve the materials in the ACE program. We are inviting you to take part in this next step of the study because the results of the mid-year screening indicate that you may be experiencing some challenges with managing your academic demands. Your decision to assent (agree) to take part in the research study, including the extra support meetings, is voluntary. If you refuse to take part, you will not get in trouble or lose access to the supports that are always available in your class or at your school. You are free to stop taking part in this study at any time. Deciding to participate, not to participate, or to stop participating at any point during the study, will in no way affect your student status, grades, or your relationship with your high school, school district, USF, or anyone else. You will not be paid for taking part in the study.
   ➢ *Potential Benefits of Participation in This Study*: The extra support is intended to help students develop ways to cope with stress and connect to school. Past research has shown that coping and connections link to success in AP and IB classes. Therefore, you may benefit directly from getting the extra support. We are testing the usefulness of the extra support with lots of students who may have challenges managing their academic demands. The information that we get from you and other students will help us improve our extra support materials. This will help make sure the program works well for future AP and IB students.
   ➢ *Possible Risks If You Participate in This Study*: 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. You will be asked personal questions about your feelings that can make some people upset. You can refuse to answer any questions that make you uncomfortable, and choose to stop taking part at any time. There are no known additional risks to students who take part in this study.

What Will Happen During This Study
This extra support involves 1 or 2 one-on-one meetings with an ACE coach. ACE coaches are from the USF research team, and do not work for Pinellas County Schools. Meetings last about 30 to 60 minutes. We schedule meetings at a time that fits best with your schedule. In the first meeting, students discuss their values, strengths, and goals. Students connect their personal goals to the topics discussed in the ACE program.

Students select an area for improvement, like how to cope with school stress through using more time and task management strategies, and work with the ACE coach to create an action plan. Students can choose to meet with the ACE coach at a later date. In the second meeting, students review their progress, celebrate success, and maybe pick another target for improvement.

Confidentiality of Your Responses
During all meetings, ACE coaches will respect your privacy. No information that identifies you will be kept or used after the extra support has ended. Information discussed in the extra support meetings will not be shared with school staff and will be kept confidential to the extent of the law. Your responses during extra support sessions will be digitally audio recorded, and then assigned a code number to protect the privacy of your statements. Although this information is not explicitly discussed, any evidence of child abuse or neglect disclosed during an extra support meeting must be reported to authorities. Also if you say that you plan to harm someone or yourself, research staff (ACE coaches) must tell people at the school to help you.

Questions?
If you have any questions, please contact the leader of the USF ACE Program: Dr. Shannon Suldo at (813) 974-2223. 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.

Your Participation in This Study
Please complete the assent form below, titled "Assent to Participate in Extra Support." Check if you would either like to receive the extra support from a USF ACE coach ("Yes, I give my permission...") or do not want to receive the extra support ("No, I do not give my permission..."). Then, sign and print your name. Keep the other copy of this letter for your records.

Sincerely,
Shannon Suldo, Ph.D.   Elizabeth Shaunessy-Dedrick, Ph.D.
Professor, School Psychology Program   Professor, Gifted Education Program
Department of Educational and Psychological Studies   Department of Teaching

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ASSENT TO PARTICIPATE IN EXTRA SUPPORT
(Form for Student to Complete)

_____Yes, I give my permission to take part in extra support offered to some AP or IB students at my high school. I have received a copy of this letter and assent form for my records.

_____No, I do not give my permission to take part in the extra support offered to some AP or IB students at my high school. I have received a copy of this letter and assent form for my records.

Signature of child	Printed name of child	Date

(Portion for USF to Complete):
Statement of Person Obtaining Informed Assent
I certify that participants have been provided with an informed assent 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 assent	Printed name of person obtaining assent	Date

USF

Appendix C: Student Base Graph
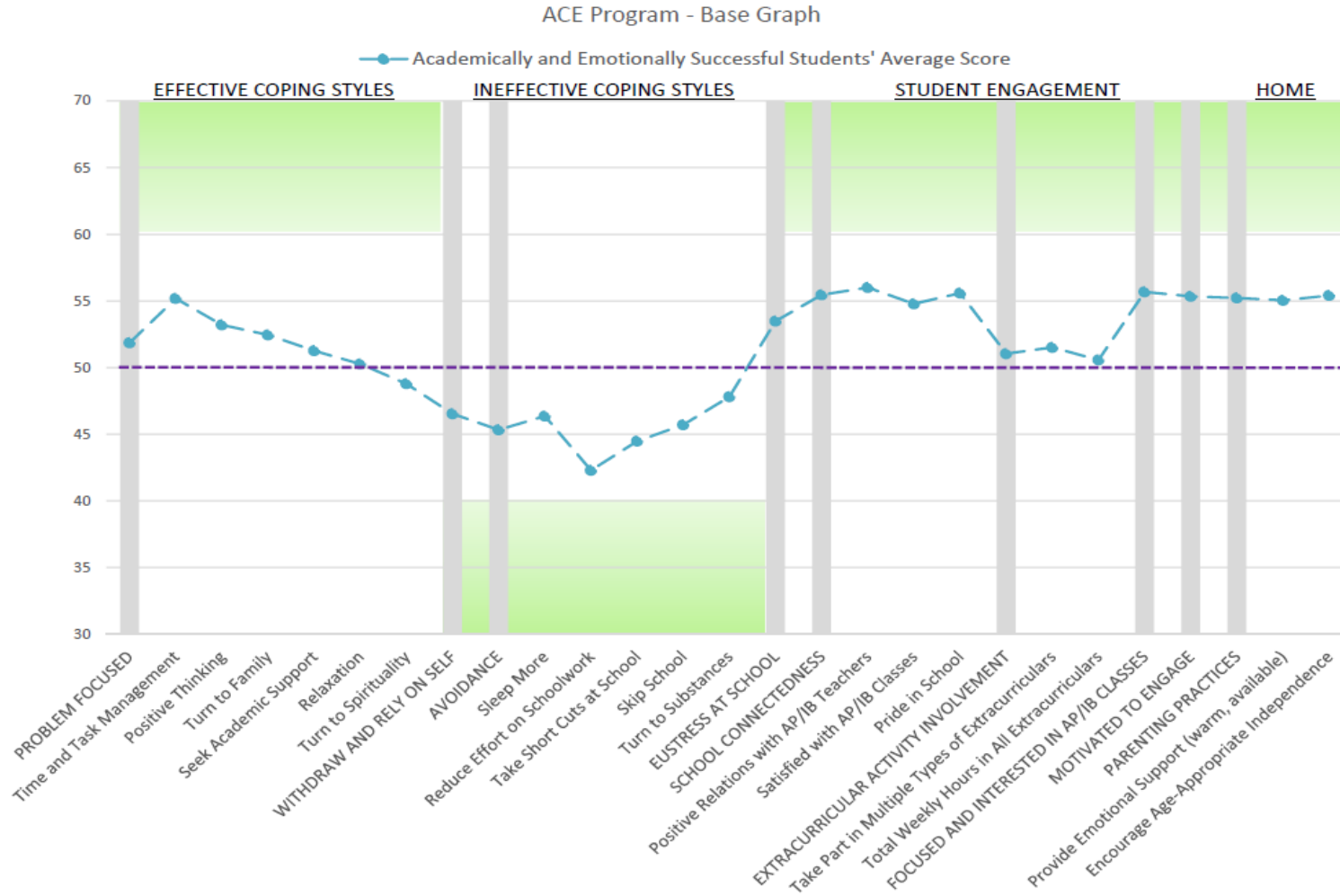
Figure 1A. Student Base Graph (blank) used during MAP Meeting One.

Appendix D: Sample MAP Student Graph
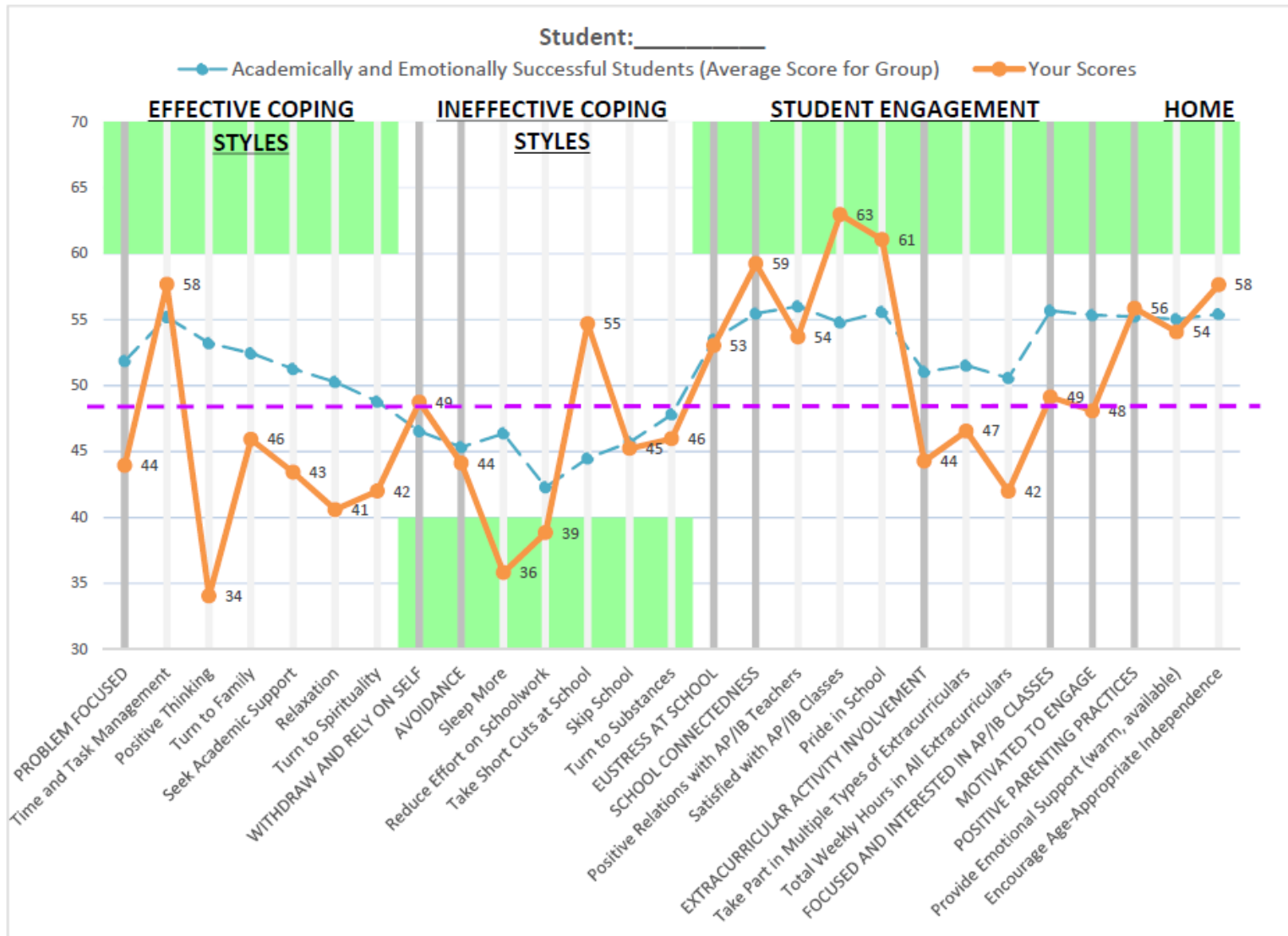
Figure 1B. Student Graph (sample) used during MAP Meeting One.

Student: _____   *USF Coach:* _____
School: _____   *Date:* _____

Motivation, Assessment, and Planning (MAP) Meeting: Student Success Planning Guide

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MAP AGENDA

1. Get to know more about your personal values, strengths, and goals.

2. Review your survey results and how they compare to other AP/IB students.

3. Develop a plan to help you meet your goals.

How well am I doing in each area below, factors related to academic and emotional success?

Factor/Target	Compared to Other AP/IB Students		
COPING WITH SCHOOL-RELATED STRESS			
Using Problem-Focus Coping Styles?			
Time and Task Management	Lower	Same	Higher
Positive Thinking	Lower	Same	Higher
Turn to Family	Lower	Same	Higher
Seek Academic Support	Lower	Same	Higher
Relaxation	Lower	Same	Higher
Turn to Spirituality	Lower	Same	Higher
Limiting Use of Withdrawal and Rely on Self Coping Style?	Higher	Same	Lower
Limiting Use of Avoidance Coping Styles?			
Withdraw and Rely on Self	Higher	Same	Lower
Sleep More to Avoid Stressors	Higher	Same	Lower
Reduce Effort on Schoolwork	Higher	Same	Lower
Take Short Cuts at School	Higher	Same	Lower
Skip School	Higher	Same	Lower
Turn to Substances	Higher	Same	Lower
Experiencing Eustress at School (Feel Motivated by Demands)?	Lower	Same	Higher
STUDENT ENGAGEMENT			
Feel Connected to School and AP/IB Program?			
Positive Relations with AP/IB Teachers	Lower	Same	Higher
Satisfied with AP/IB Courses/Program	Lower	Same	Higher
Pride in School	Lower	Same	Higher
Involved in Extracurricular Activities?			
Take Part in Multiple <u>Types</u> of Extracurriculars	Lower	Same	Higher
Healthy # of Total Weekly <u>Hours</u> in All Extracurriculars	Lower	Same	Higher
Focused on Schoolwork and Interested in AP/IB Classes? (high personal standards; persist towards goals; strategies to reach goals)	Lower	Same	Higher
Motivated to Engage in AP/IB Coursework? (confident in academic abilities; feel in control & absorbed during class)	Lower	Same	Higher
HOME			
Parents Provide Emotional Support (warm, available)?	Lower	Same	Higher
Parents Encourage Age-Appropriate Independence?	Lower	Same	Higher

Values, Strengths, and Goals

Areas of Importance	
1.	
2.	
3.	

Values	
1.	4.
2.	5.
3.	

Character Strengths from VIA classification:	
1.	4.
2.	5.
3.	

Goals for later high school or post-high school plans:	
1.	
2.	
3.	

Notes:

Problem-Solving Process in Action

Step 1: Recognize Factors that can be Improved Upon

Step 2: Determine the Potential Benefits of Addressing those Factors (skip this step if this is Action Planning meeting)

Step 3: Develop Alternative Solutions and Evaluate Possible Benefits

Option 1	Option 2	Option 3
Pros:	**Pros:**	**Pros:**

Step 4: Select the Best Solution and Try It Out

Step 5: Evaluate the Outcome; Savor Successes

Action Plan

Target: I want to maintain/improve/decrease: **Goal:**		

Steps	Action Steps	By (Date)
1.		
2.		
3.		
Additional Steps		

Sticking to My Plan
How will I keep myself accountable to this plan?   With whom can I share my progress? How and when?

Anticipating Bumps in the Road	
Potential Barriers	Solutions

I, _____, plan to carry out the planned steps and activities I worked on today with my ACE Program Coach, Camille Hanks.

I would receive a reminder copy of the action plan(s) I created today, in 2 week(s).

I would meet with the ACE Program Coach again, in 2 weeks.

_____   _____
Signature of Student   Date

_____   _____
Signature of ACE Program Coach   Date

Student: _____   *USF Coach:* _____
School: _____   *Date:* _____

Motivation, Assessment, and Planning (MAP) Meeting: Student Success Planning Guide

Values, Strengths, and Goals

MAP AGENDA

1. Review goals made during Meeting 1 and discuss any changes made since the first meeting.
2. Discuss personal values, strengths, and long-term goals.
3. Review graph and decide how to focus this meeting:
   a. Update your previous goal and revise the plan
   b. Work on creating a new goal together
4. Develop an action plan to help you overcome barriers and meet your goals

---

Areas of Importance	
1.	
2.	
3.	

Values	
1.	4.
2.	5.
3.	

Character Strengths from VIA classification:	
1.	4.
2.	5.
3.	

| Goals for later high school or post-high school plans:	
1.	
2.	
3.	

Notes:

Problem-Solving Process in Action

Step 1: Recognize Factors that can be Improved Upon

Step 2: Determine the Potential Benefits of Addressing those Factors (skip this step if this is Action Planning meeting)

Step 3: Develop Alternative Solutions and Evaluate Possible Benefits

Option 1	**Option 2**	**Option 3**
Pros:	**Pros:**	**Pros:**

Step 4: Select the Best Solution and Try It Out

Step 5: Evaluate the Outcome; Savor Successes

Action Plan

Target: I want to maintain/improve/decrease: **Goal:** 		

Steps	Action Steps	By (Date)
1.		
2.		
3.		
Additional Steps		

Sticking to My Plan
How will I keep myself accountable to this plan?   With whom can I share my progress? How and when?

Anticipating Bumps in the Road	
Potential Barriers	Solutions

I, _____, plan to carry out the planned steps and activities I worked on today with my ACE Program Coach, Camille Hanks.

I would receive a reminder copy of the action plan(s) I created today, in 2 week(s).

I would meet with the ACE Program Coach again, in 2 weeks.

_____   _____
Signature of Student   Date

_____   _____
Signature of ACE Program Coach   Date

Appendix G: MAP Meeting Reminder Letter

Dear Student,

Thank you for participating in the ACE Program's Motivation, Assessment, and Planning (MAP) meeting last month. It was so nice getting to know you better, and learning about your values, strengths, and goals for the future! I hope all is going well with school!

During our meeting on [Date], we created an action plan to help you use [target skill] more often in times of stress at school. You thought of great steps for taking action towards reaching your goal, including:

Step	Action	By (date)
1		
2		
3		
4		

In case you find yourself struggling to meet your goal, don't forget the great solutions to likely barriers you came up, including:

Potential Barrier	Solution

After [date], we can touch base and talk more about your action plan. In the meantime, <u>please consider completing the questions below.</u>

	Question to Self:	Notes to Self:
1	How am I doing in AP Human Geo, in terms of grades, emotional well-being, and stress?	
2	Why is academic and emotional success in AP important to my future?	
3	What are the three good things that would happen I reached my goal this week?	
4	What can I do to make use of my action plan this week more likely?	

I can't wait to see you in a couple of weeks to learn about your progress with this plan!

Best,

Camille Hanks, ACE Program Coach

Appendix H: ACE Program Check-In (Screening Measure includes School Satisfaction Subscale of MSLSS & PSS)

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 last semester (e.g., 3.25)? ___._____

16. What grade did you earn in IB Biology [or AP Human Geography]? _____

Appendix I: MAP Meeting One: Student Feedback Form (Includes Indicator of Therapeutic Alliance and Goal Attainment)

PART I Directions: Based on the meeting you had with a coach from the USF ACE Team, please rate your level of agreement or disagreement with the following statements.

Item	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. I felt comfortable during this meeting.	SD	D	N	A	SA
2. The purpose of this meeting was clear.	SD	D	N	A	SA
3. The survey packet that asked about my current coping skills, school engagement, and home life was easy to complete.	SD	D	N	A	SA
4. The data and graph used in the meeting were easy to understand.	SD	D	N	A	SA
5. I liked reviewing the data and the graph with the coach.	SD	D	N	A	SA
6. The *Student Success Planning Guide* was helpful.	SD	D	N	A	SA
7. I liked the process used to develop the action plan.	SD	D	N	A	SA
8. This meeting was effective in helping me develop an action plan of strategies to help me reach my short and long term goals.	SD	D	N	A	SA
9. I would recommend the meeting to other students.	SD	D	N	A	SA
10. The length of the meeting was too long.	SD	D	N	A	SA
11. I am likely to use ideas discussed today inside and outside of school.	SD	D	N	A	SA
12. I am ready to make a positive change in a target discussed during today's meeting	SD	D	N	A	SA
13. I will not make any changes in my behavior based on this meeting.	SD	D	N	A	SA

My Relationship with the USF Coach *Please select one answer for each question.*	Not at All	Only A Little	Some-what	Quite a Bit	Totally
14. Did this meeting head in the direction that you wanted?	1	2	3	4	5
15. Did you understand the things that your coach said in this meeting?	1	2	3	4	5
16. Did you and your coach work on problems together in this meeting?	1	2	3	4	5
17. In this meeting, did you feel that your coach would stick with you no matter how you behaved?	1	2	3	4	5
18. In this meeting, did you feel that your coach understood what it feels like to be you?	1	2	3	4	5

PART II Directions: Please take 2-3 minutes to record your thoughts. There are no right or wrong answers. Write down the first thought that comes to your head.

A. *What part of the meeting did you find most interesting or useful?*

_____

B. *What recommendation(s) for change to the meeting do you have?*

_____

C. *Additional comments and suggestions.*

_____

_____

Appendix J: MAP Meeting One: Coach Feedback Form (Includes Indicator of Therapeutic Alliance)

PART I Directions: Please rate your level of skill or proficiency at doing each of the following after meeting with a student using a motivational interviewing-based approach.

THERAPEUTIC ALLIANCE RATING (Directions: *All questions below refer to the meeting that you just completed with this student. Please select one answer for each question).*					
1. In this meeting, how would you describe your relationship with this student?	Very Poor	Poor	Satis-factory	Good	Excel-lent
2. In this meeting, how do you think the student will rate your relationship with him/her?	Very Poor	Poor	Satis-factory	Good	Excel-lent
GLOBAL APPRAISALS					
3. The student seemed engaged during this meeting.	SD	D	N	A	SA
4. The student and I had a positive working alliance during this meeting.	SD	D	N	A	SA
5. The student seems likely to make a positive change in a target discussed during today's meeting.	SD	D	N	A	SA
6. I feel the student benefitted from taking part in the meeting.	SD	D	N	A	SA
When meeting with the student, I…	Poor	Below Average	Average	Above Average	Excel-lent
7. Allowed the student to influence the conversation, honoring the student's expertise and wisdom.	1	2	3	4	5
8. Accepted and affirmed the student's values.	1	2	3	4	5
9. Sought to understand the challenge from the student's point of view.	1	2	3	4	5
10. Placed the student's well-being and best interests above my own.	1	2	3	4	5
11. Provided accurate verbal reflections of what a student tells me.	1	2	3	4	5
12. Provided verbal reflections that represent my best gauge of what a student is attempting to communicate.	1	2	3	4	5
13. Used more complex reflections than simple reflections.	1	2	3	4	5
14. Asked open-ended questions.	1	2	3	4	5
15. Used affirming statements.	1	2	3	4	5
16. Used summary statements.	1	2	3	4	5
17. Attempted to categorize student speech as change or sustain talk.	1	2	3	4	5
18. Altered my interview strategies depending on student's use of sustain talk.	1	2	3	4	5
19. Used OARS skills to maximize change talk and minimize sustain talk.	1	2	3	4	5
20. Knew *when* to ask open questions that encourage student change talk.	1	2	3	4	5
21. Knew *how* to ask open questions that encourage student change talk.	1	2	3	4	5
22. Knew what to say to encourage student change talk.	1	2	3	4	5
23. Politely acknowledged and disregarded sustain talk in order to shift the focus of the conversation towards behavior change.	1	2	3	4	5
24. Worked to increase the depth and strength of student change talk.	1	2	3	4	5
25. Knew when to transition from discussing motivation to change to how the student sees change occurring.	1	2	3	4	5
26. Knew when to move on to the development of a change plan.	1	2	3	4	5

PART II. Please record your thoughts on the last MAP session you had with a student.

A. What part of the meeting did you think went the best?

B. What part of the meeting did you find challenging?

C. Please write additional comments below or on the back of this form

Appendix K: MAP Meeting Two: Student Feedback Form

PART I Directions: Based on the meetings you had with a coach from the USF ACE Team, please rate your level of agreement or disagreement with the following statements.

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
When answering these questions reflect back on the <u>first</u> meeting you had with your coach last month. Student's Goal:					
1. I like the goal my coach and I identified at the end of the first meeting.	SD	D	N	A	SA
2. Since last month, I've thought about my strengths and values and how they play out in my daily life.	SD	D	N	A	SA
3. I made progress on the goal I identified with my coach.	SD	D	N	A	SA
4. Since last month, barriers kept me from reaching my goal.	SD	D	N	A	SA
5. I made changes in my behavior based on the first meeting.	SD	D	N	A	SA
6. The letter I received from my coach a few weeks before today's meeting helped keep me on track with my goal.	SD	D	N	A	SA
When answering these questions reflect on the <u>second</u> meeting you just had with your coach (i.e., today's meeting).					
7. I felt comfortable during today's meeting.	SD	D	N	A	SA
8. The purpose of this meeting was clear.	SD	D	N	A	SA
9. This meeting helped me revise my goal (or create a new goal) that will help me reach academic and/or emotional success.	SD	D	N	A	SA
10. In this meeting, my coach helped me come up with ideas on how to overcome barriers I'm facing.	SD	D	N	A	SA
11. Because of this meeting, I feel confident that I will meet my goal.	SD	D	N	A	SA
12. I am ready to make a positive change in a target discussed during today's meeting.	SD	D	N	A	SA
13. I am likely to use ideas discussed today inside and outside of school.	SD	D	N	A	SA
14. I will <u>not</u> make any changes in my behavior based on this meeting.	SD	D	N	A	SA
15. The length of the meeting was too long.	SD	D	N	A	SA
16. I would recommend this meeting to other students.	SD	D	N	A	SA
17. This second meeting was unnecessary (I had all the information I needed after the first meeting).	SD	D	N	A	SA
18. It would be helpful to meet again or more often with an ACE coach.	SD	D	N	A	SA
My Relationship with the USF Coach *Please select one answer for each question.*	**Not at All**	**Only a Little**	**Some-what**	**Quite a Bit**	**Totally**
19. Did this meeting head in the direction that you wanted?	1	2	3	4	5
20. Did you understand the things that your coach said in this meeting?	1	2	3	4	5
21. Did you and your coach work on problems together in this meeting?	1	2	3	4	5
22. In this meeting, did you feel that your coach would stick with you no matter how you behaved?	1	2	3	4	5
23. In this meeting, did you feel that your coach understood what it feels like to be you?	1	2	3	4	5

PART II Directions: Please take 2-3 minutes to record your thoughts. There are no right or wrong answers. Write down the first thought that comes to your head.

A. *What part of the meeting today did you find most interesting or useful?*
_____

B. *What recommendation(s) for change to the meeting today do you have?*
_____

C. *Additional comments and suggestions:*

Appendix L: MAP Meeting Two: Coach Feedback Form

PART I Directions: Please rate your level of skill or proficiency at doing each of the following when meeting with a student using a motivational interviewing-based approach.

THERAPEUTIC ALLIANCE RATING (Directions: *All questions below refer to the meeting that you just completed with this student. Please select one answer for each question*).					
1. In this meeting, how would you describe your relationship with this student?	Very Poor	Poor	Satis-factory	Good	Excel-lent
2. In this meeting, how do you think the student will rate your relationship with him/her?	Very Poor	Poor	Satis-factory	Good	Excel-lent
GLOBAL APPRAISALS					
3. The student seemed engaged during this meeting.	SD	D	N	A	SA
4. The student and I had a positive working alliance during this meeting.	SD	D	N	A	SA
5. The student seems likely to make a positive change in a target discussed during today's meeting.	SD	D	N	A	SA
6. I feel the student benefitted from taking part in the meeting.	SD	D	N	A	SA
7. The student made progress on the initial goal from the 1st meeting.	SD	D	N	A	SA

When meeting with the student, I…	Poor	Below Average	Average	Above Average	Excel-lent
8. Allowed the student to influence the conversation, honoring the student's expertise and wisdom.	1	2	3	4	5
9. Accepted and affirmed the student's values.	1	2	3	4	5
10. Sought to understand the challenge from the student's point of view.	1	2	3	4	5
11. Placed the student's well-being and best interests above my own.	1	2	3	4	5
12. Provided accurate verbal reflections of what a student tells me.	1	2	3	4	5
13. Provided verbal reflections that represent my best gauge of what a student is attempting to communicate.	1	2	3	4	5
14. Used more complex reflections than simple reflections.	1	2	3	4	5
15. Asked open-ended questions.	1	2	3	4	5
16. Used affirming statements.	1	2	3	4	5
17. Used summary statements.	1	2	3	4	5
18. Attempted to categorize student speech as change or sustain talk.	1	2	3	4	5
19. Altered my interview strategies depending on the student's use of sustain talk.	1	2	3	4	5
20. Used OARS skills to maximize change talk and minimize sustain talk.	1	2	3	4	5
21. Knew *when* to ask open questions that encouraged change talk.	1	2	3	4	5
22. Knew *how* to ask open questions that encouraged change talk.	1	2	3	4	5
23. Knew *what* to say to encourage change talk.	1	2	3	4	5
24. Politely acknowledged and disregarded sustain talk in order to shift the focus of the conversation towards behavior change.	1	2	3	4	5
25. Worked to increase the depth and strength of student change talk.	1	2	3	4	5
26. Knew when to transition from discussing motivation to change to how the student sees change occurring.	1	2	3	4	5
27. Knew when to move on to the development of a change plan.	1	2	3	4	5

PART II. Please record your thoughts on the last MAP session you had with a student.

A. What part of the meeting did you think went the best?

_____

B. ***What part of the meeting did you find challenging?***

_____

C. Please write additional comments below or on the back of this form

Appendix M: Sample Coded *Progress towards MAP Goal* (Includes Indicator of Goal Attainment)

Name: _____   **Date of MAP Meeting 2:_____**

Thank you for taking part in the ACE Program's Motivation, Assessment, and Planning (MAP) meeting on ==January 31st==. During our meeting, we created an action plan to help you ==use time and task management strategies more often== in times of stress at school. You set a terrific goal: ==use time and task management strategies to be more organized and prepared for class==. You thought of great steps for taking action towards reaching your goal, including:

Step	Action	By (date)	Progress		
			None	**Some**	**Completed**
1	*Use a planner consistently*	*Today! (1/31/17)*			
2	*Organize binders for class and book bag*	*Tomorrow (2/1/17)*			
3	*Talk with sister to get tips; organize book bag together*	*Tomorrow (2/1/17)*			
4	*Revisit worksheets from the ACE program modules on coping with stress through Time and Task Management*	*As needed*			