THE EFFECTS OF A SCHOOL-BASED MENTORING PROGRAM ON ADOLESCENT WELL-BEING: A DUAL-FACTOR MODEL PERSPECTIVE

A Dissertation Presented to the
Faculty of the College of Education
University of Houston

In Partial Fulfillment
of the Requirements for the Degree

Doctor of Philosophy in School Psychology

by
Jacqueline R. Anderson

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Abstract

Background: To address the unmet mental health needs of adolescents, alternative mental health service models need to be explored. One solution involves expanding the range of personnel who can deliver mental health services while reconceptualizing mental health service delivery through alternative frameworks such as the dual-factor model (DFM), which assesses symptoms of psychopathology and subjective well-being. **Purpose:** The current study examined the effectiveness of mentoring to improve mental health using the DFM of mental health as an explanatory framework. **Methods:** The study took place at a local low-income middle school during the spring 2017, fall 2017, and spring 2018 semesters. One hundred and twelve students were recruited to participate in the study. Sixty-six students were mentored over an 8- to 12-week period with a manualized AMPED (Academic Mentoring Program for Educational Development) mentoring program. **Results:** When using unidimensional analysis, the mentored students did not significantly improve their subjective well-being or alleviate symptoms of psychopathology compared to the control group. When using a DFM classification, the percentage of students in the four DFM groups was similar to that of previous studies, but tests for higher rates of positive outcomes measured by DFM category status were non-significant. Exploratory analysis found that students in the mentoring group were more likely to make small changes relative to the control group. **Conclusion:** Consistent with current mentoring research, the changes in the experimental group pre- and post-mentoring were small relative to the control group. However, the study was grossly underpowered to test the research hypotheses. These results warrant further investigation of the feasibility and efficacy of using the AMPED intervention as well as evaluation of other school-based mental health interventions using the DFM framework based on prior analysis and sufficiently powered studies.

Table of Contents

List of Figures

List of Tables

CHAPTER I

Introduction

While most adolescents in the United States experience few mental health problems, approximately 20% (15 million children) have diagnosable mental health issues that warrant intervention (Kirby, Keon, & Dinsdale, 2006; U.S. Department of Health and Human Services, National Institute of Mental Health, 2016). Despite the numbers, only about 1 in 4 youth who need mental health services receive treatment, leaving approximately 75% untreated (Kirby et al., 2006; Ringel & Sturm, 2001). Schools are often the *de facto* mental health service providers for children and adolescents, providing approximately 75% of mental health services available to children and youth (Rones & Hoagwood, 2000). While schools are the primary setting for mental health services, limitations in resources reduce their capacity to provide adequate mental health support to students in need (Meyers & Swerdlik, 2003; Mills, Stephan, Moore, Weist, Daly, & Edwards, 2006; Rones & Hoagwood, 2000; Weir, 2012). Therefore, reconsidering the means and ways school mental health services are provided warrants attention.

One reasonable alternative involves considering mental health from a dual-factor model (DFM) of mental health. DFM researchers posit that mental health encompasses more than the mere absence of psychopathology, but, rather, is composed of both psychopathology and subjective well-being, that is, an individual's cognitive and affective evaluations of his or her life (Diener, Oishi, & Lucas, 2009). Thus, emerging research suggests that a lack of clinical symptoms does not necessarily equate to good mental health; rather, high levels of subjective well-being and the absence of psychopathology are both necessary for optimal psychological functioning (Diener, 2000; Greenspoon & Saklofske, 2001; Seligman & Csikszentmihalyi, 2000; Suldo & Shaffer, 2008).

By incorporating well-being or how we evaluate our quality of life, the DFM framework presents a unique conceptualization of mental health that offers several advantages over more

traditional conceptualizations (Diener et al., 2009). First, it allows for identification of students in need of services, especially those who are most typically overlooked (i.e., students who show subclinical symptomatology and low levels of subjective well-being). Second, it can provide additional insights into appropriate levels of treatment intensity, potentially classifying an individual based on a tiered or triage system of need. Finally, from a treatment perspective, it allows both mental health professionals and nonprofessionals to target both symptoms of psychopathology and subjective well-being, thus expanding the pool of service providers.

Current research suggests that subjective well-being may be a more malleable factor for intervention and treatment than symptoms of psychopathology. Additionally, subjective well-being can also act as a protective factor that can mitigate symptoms of psychopathology (Diener, 2000; Greenspoon & Saklofske, 2001; Seligman & Csikszentmihalyi, 2000; Suldo & Shaffer, 2008). Treatment of psychopathology and its various symptoms has typically been the domain of mental health professionals with advanced degrees; however, treatments targeting well-being can be implemented by nonprofessionals with minimal training. Thus, conceptualizing mental health treatment from a DFM perspective widens the range of professionals able to deliver mental health services via interventions that improve subjective well-being. One setting where mental health services are always in high demand, yet typically suffers from a shortage of qualified professionals to provide services, is schools (Weir, 2012). Schools may be able to more easily meet this demand by adopting a DFM model of mental health. That is, by conceptualizing mental health from a DFM perspective, schools can identify and tailor treatment to meet the needs of their students while simultaneously expanding the pool of professionals who can provide mental health treatment.

Several studies have attested to the benefits of using the DFM to identify students in need of services (Antaramian, Huebner, Hills, & Valois, 2010; Greenspoon & Saklofske, 2001; Kelly, Hills, Huebner, & McQuillin, 2012; Suldo & Shaffer, 2008; Suldo, Thalji, & Ferron, 2011). However, there

is limited research to date on the effectiveness of interventions using the DFM framework within schools. Hence, the benefits of this model are only partially realized. More studies are clearly needed that examine the usability of the DFM approach in the context of school-based mental health services if its potential to address resource limitations and mental health needs is to be fully realized.

To this author's knowledge, while no applications of the DFM model within schools have been reported in the literature, several studies have investigated interventions targeting well-being, a foundational component of the DFM framework, in schools. Although the evidence of its effectiveness on student well-being has been mixed, one of the most promising of these interventions, a program called Academic Mentoring Program for Educational Development (AMPED), has resulted in significant improvements in the well-being of students along with a variety of academic indicators (e.g., grades, attendance, and school engagement) (McQuillin & Lyons, 2016; McQuillin, Strait, Smith, & Ingram, 2015).

One of the essential characteristics of the AMPED program is that it is delivered by mentors who are not mental health professionals with advanced degrees. Thus, the intervention can increase student well-being without burdening school resources. Mentoring offers several benefits that make it an ideal intervention to embed within a DFM framework: It is cost effective, it can be implemented by nonprofessionals, and it is already well established in most schools (Dubois, Portillo, Rhodes, Silverthor, & Valentine, 2011). In short, the AMPED program may be able to positively impact student well-being as seen through a DFM framework, which would improve overall mental health through a DFM lens.

School-Based Mental Health Services

School-based mental health services have multiple benefits, a key being ease of access by students (Doll, Nastasi, Cornell, & Song, 2017). In addition to being convenient for students to access counseling or small-group sessions, the use of a familiar setting reduces the stigma often associated

with seeking and receiving mental health services. Furthermore, school-employed mental health professionals are trained to provide a variety of direct and indirect intervention services to school-aged youth in the school setting (National Association of School Psychology, 2010). In recent decades, the provision of school-based mental health services has been structured around a response-to-intervention (RtI), or more recently multi-tier system of supports (MTSS) triaging. Although not universally adopted, both RtI and MTSS provide promising systems-oriented school-based overarching meta-frameworks designed to address the academic and behavioral needs of the entire student population. This method of service delivery has also been shown to have a significant impact on improving the mental health outcomes of both children and adolescents (Strein, Hoagwood, & Cohn, 2003).

MTSS has been widely used to identify and provide services related to academic and behavioral performance, but is now also being applied to the provision of mental health services to students. The three tiers of the MTSS framework include all students (universal/Tier 1), at-risk students (targeted/Tier 2), and students with severe/chronic problems (tertiary/Tier 3; Rossen & Cowan, 2014). Tier 1, the universal tier, provides schoolwide or classroom-level interventions to promote student success such as positive behavior intervention support. Tier 2 services typically include small-group interventions for students who have been identified as at risk of failing academically or for mental health issues, and who do not respond to the universal interventions in Tier 1. Finally, students in Tier 3 have been identified as having significant concerns that impair their ability to be successful in school and who need individualized support such as special education or individual counseling. This multi-tiered system is a promising means of service delivery to the entire student population with heterogeneous behavioral, emotional, and academic needs.

Despite the advantages of MTSS and other service delivery models, schools still struggle to effectively identify student mental health issues, thus limiting the potential of these models to

positively address student mental health needs. For example, although students complete mental health screeners within an MTSS framework, many may go unidentified due to lack of sensitivity and specificity of the screeners (Mills et al., 2006). More comprehensive measures are often costly and require specially trained personnel for administration and progress monitoring (Short & Strein, 2008). Further complicating the matter is the almost exclusive focus of identification on externalizing behaviors (e.g., noncompliance) at the expense of students who may exhibit internalizing behaviors (e.g., depression) (Domitrovich, Bradshaw, Greenberg, Embry, Poduska, & Ialongo, 2010).

In addition to the difficulty in identifying students who need services, schools lack a sufficient number of trained service providers (e.g., mental health experts, counselors) to meet students' mental health needs. While the majority of schools offer some access to mental health service providers (e.g., school counselors, school psychologists, social worker), these professionals tend to have large caseloads, which limits the amount of time they can spend implementing direct services to students. For example, school counselors average 471 students on their caseload, which exceeds the caseload of 250 students recommended by the American School Counselor Association (2013). Similarly, school psychologists are encouraged to have caseloads of 500 to 700 students, yet their average ranges from 2,000 to 3,500 students per school psychologist (Weir, 2012). Therefore, it is not surprising that mental health needs of students often go unattended.

In summary, ineffective identification practices, dubious assessment practices, burdensome caseloads, and lack of qualified personnel leave many students in need of mental health services untreated. Given that current service delivery models are failing to address student mental health needs, exploration of alternative models is warranted. One such alternative is the dual-factor model of mental health (Greenspoon & Saklofske, 2001).

Dual-Factor Model of Mental Health: A Brief Overview

In the DFM model of mental health, positive indicators of wellness (subjective well-being) are integrated with more traditional negative indicators of illness (psychopathology) to provide a more comprehensive conceptualization of mental health (Greenspoon & Sasklofske, 2001). These two groups of indicators combine to create four distinct health categories based on the levels (high or low) of psychopathology and subjective well-being. The four categories of mental health are as follows: (a) Troubled (high psychopathology and low subjective well-being; mental illness); (b) Symptomatic, but Content (high psychopathology and subjective well-being); (c) Complete Mental Health (low psychopathology and high subjective well-being; mental health); and (d) Vulnerable (low psychopathology and low subjective well-being) (Antaramian et al., 2010; Greenspoon & Saklofske, 2001; Kelly et al., 2012; Suldo & Shaffer, 2008; Suldo et al., 2011). The rationale for the distinction between subjective well-being and psychopathology is that they are seen as separate constructs that make unique contributions to predictions of youth functioning.

Conceptualizing mental health from a DFM perspective can provide schools with an innovative means of identifying "at-risk" students (i.e., vulnerable group), who typically have negative outcomes (e.g., development of mental illness or poor academic functioning). Using the present models of service delivery, students belonging to the Vulnerable group often remain unidentified due to low levels of psychopathology, and thus often are not considered in need of intervention. In taking a closer look at each group, researchers have found that the Vulnerable group has a higher rate of negative outcomes (e.g., lower grades, poor self-concept, less engagement in school activities) than the Symptomatic, but Content group (traditionally identified for mental health services group). Yet, the Vulnerable group still goes without services (Antaramian et al., 2010; Kelly et al., 2012; Suldo & Shaffer, 2008; Suldo et al., 2011).

Researchers have posited that that difference in the above findings resides in students' level of well-being (an individual's cognitive and affective evaluations of his or her life) (Diener et al., 2009) and that, therefore, well-being serves as a buffer from psychopathology. Thus, schools may be able to use assessment of well-being to distinguish the level of mental health services needed by students (Antaramian et al., 2010; Kelly et al., 2012; Suldo & Shaffer, 2008; Suldo et al., 2011). By incorporating the DFM framework, schools can improve methods of identification of mental health concerns and use more sensitive assessment for mental health concerns by adding well-being. In so doing, schools may be able to reduce the demands on highly trained personnel by expanding service delivery options, to include having nonprofessionals address less severe mental health concerns.

Interventions targeting well-being. To date, no published studies have investigated the impact of interventions on improvements in an individual's DFM classification. However, the findings of several studies support the notion that certain interventions (e.g., social-emotional learning and positive psychology interventions) can improve people's subjective well-being or evaluations of their satisfaction with their life, and that these interventions can be implemented by nonprofessionals. For example, social-emotional learning and positive psychology interventions have led to improvements in academic and social functioning along with lower levels of internalizing symptomatology (e.g., depression and anxiety) (Boiler, Haverman, Westerhof, Riper, Smit, & Bohlmeijer, 2013; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). These interventions can be implemented by a wider range of professionals, including teachers, undergraduates, and graduate students.

Despite promising outcomes of these interventions on subjective well-being, there are several limitations to the research, however. The body of research of positive well-being is still emerging, and presents several limitations (Bolier et al., 2013; McCabe, Bray, Kehle, Theodore, & Gelbar, 2011; Proctor, Tsukayama, Wood, Maltby, Eades, & Linley, 2011; Quinlan, Swain, Cameron, & Vella-Brodrick, 2015). Limitations include impracticality of interventions given limited school resources,

personnel, and time constraints within schools (Elias, Zins, Graczyk, & Weissberg, 2003; Fagan, Hawkins, & Shapiro, 2015). Thus, implementation of these interventions likely exceeds the capacity of many schools. One promising way to provide needed mental health services while not exceeding the limited resources of schools is school-based mentoring.

Dual-factor model of mental health and mentoring. Mentoring consists of a relationship between a child or adolescent (mentee) and a non-parental adult (mentor), who provides the mentee with wisdom and guidance, and creates an emotional bond (DuBois & Karcher, 2005). The bond formed through mentoring allows the mentor to guide and support the youth in developing skills that can operate to buffer or protect youth from developing mental health problems. Studies have shown that mentoring has been associated with a number of positive student outcomes, including improvements in academic, psychosocial, and behavioral domains (Aseltine, Dupre, & Lamlein, 2000; Grossman & Rhodes, 2002; Herrera, Grossman, Kauh, Feldman, & McMaken, 2007).

There are numerous advantages to school-based mentoring. First, mentoring typically uses local community and/or university resources (e.g., personnel) and, therefore, is not a resource drain on schools. Second, school-based mentoring allows for much-needed flexibility in terms of mentor caseload, experience and time commitment compared to more resource-dependent, outside-of-school mentoring (Herrera, 2004). Finally, the cost of operating a school-based mentoring program is relatively low compared to other service delivery approaches because it taps into available school resources such as classroom space and utilities provided by the school (Herrera et al., 2007). Driven by ease of fit into existing school ecologies, school-based mentoring has become popular, and a developing body of research supports beneficial impact on school-aged youth.

Despite these promise, few mentoring studies have directly investigated the impact of mentoring on student well-being. It is plausible that mentoring may enhance well-being by promoting student skills that foster coping abilities, social-emotional functioning, and identity development

(Rhodes, 2005; Rhodes, Spencer, Keller, Liang, & Noam, 2006). As noted, there is a paucity of research on the impact of mentoring on well-being. To the author's knowledge, only one mentoring program has examined the improvements in well-being, namely Academic Mentoring Program for Education and Development (AMPED). Students mentored using AMPED demonstrated improved well-being as measured by a life satisfaction survey (McQuillin & Lyons, 2016; McQuillin et al., 2015). While more research is needed, initial findings on the AMPED program show promising outcomes for adolescents' well-being factors or adolescents' cognitive and affective evaluations of their life.

In summary, schools are the optimal setting for the provision of mental health services for youth. Yet, schools often face severe resource limitations that hamper efforts to adequately meet the mental health needs of children and youth. Alternative service delivery models need to be explored to address these limited resources. One alternative is to conceptualize mental health service delivery from a DFM approach. By adopting a DFM framework, schools can not only use professional personnel but also capitalize on nonprofessionals to target mental health to improve well-being of more students. The most common nonprofessionals involved in schools are mentors – an available resource that can be used to promote the mental health of children and youth. Therefore, a school-based mentoring program, specifically the AMPED program, may be the ideal intervention to promote mental health from the DFM framework by targeting student well-being.

Purpose of Study

The purpose of this study was to examine the effects of the AMPED program, a school-based mentoring program, on student self-reported mental health outcomes using a dual-factor model of mental health framework. The AMPED curriculum was implemented in a high-poverty public middle school by student mentors from University of Houston. By incorporating the DFM, a conceptual framework is provided to interpret the results.

Research Questions

The current study addressed the following research questions:

1. Is there a difference between the intervention and the wait-list control group in terms of students' life satisfaction, positive affect, negative affect, and psychopathology after participating in the mentoring program?
    a. It was hypothesized that participation in the manualized mentoring program, AMPED, would significantly and positively impact life satisfaction, positive and negative affect, and reduce both internalizing and externalizing symptoms of psychopathology.
2. Is there a difference between the intervention and the wait-list control group in terms of positive change in the DFM framework after participating in the mentoring program?
    a. It was hypothesized that group classification within the DFM would positively change for students in the manualized intervention: students in the troubled or vulnerable group would move into complete mental health or the symptomatic, but content group (see Figure 2).

Methods

The University of Houston Institutional Review Board (IRB) approved the mentoring program for implementation at a local middle school. One hundred participants were recruited from a local low-income middle school from spring 2017, fall 2017, and spring 2018. Students were recruited based on school procedures: sending home parental consent forms for every eligible student. Interest in the AMPED program was generated by a school social worker and AMPED personnel, who recruited students at different school events and recommendations by school personnel.

To be eligible to participate, students had to return a signed copy of a consent form to school personnel with the understanding that they might be placed on a wait-list control condition. Students who did not receive mentoring (i.e., waitlisted) one semester were invited to receive mentoring the

following semester if they were still willing to participate. All students were English speaking. Participants included students who were in the 6th, 7th, or 8th grade during spring 2017 to spring 2018.

Mentors were selected in the fall and spring of 2017-2018. Mentors were primarily undergraduate students from the University of Houston, who were recruited from different undergraduate classes from the Colleges of Education and Psychology. A total of 47 undergraduate students were trained to use and deliver the mentoring intervention.

The program director, program coordinator, and the principal investigator developed initial online introductory training and two initial trainings sessions to train the undergraduate students on the AMPED program. Each mentor completed an initial interview, background check, and required training before meeting with middle school students. The mentors were paired with mentees based on shared schedules and the sex of the students. Male students matched with male mentors when possible.

Participants (40 wait-list control group and 72 treatment group) completed pre- and posttest measures, *Brief Multidimensional Students' Life Satisfaction Scale* (BMSLSS), *Positive Affect and Negative Affect Scale for Children* (PANAS), and Causey's *Self-Report Coping Scale*, to assess their overall mental health using the DFM framework (Causey & Dubow, 1992; Huebner, Seligson, Valois, & Suldo, 2006; Laurent et al., 1999). The BMSLSS and PANAS assessed the students' subjective well-being and Causey's *Self-Report Coping Scale* assessed students' level of psychopathology. Measures were completed before the mentoring program began (Time 1) and after the mentoring program was completed (Time 2). The mentors attempted to meet for eight separate occasions (sessions) with their assigned student mentees (the detailed curriculum is described in Table 1). Mentees completed posttest measures after the majority of the treatment group completed the eight sessions (typically 8-12 weeks after Time 1). Hypothesizes were tested using multiple regressions, chi-squared tests, logistical regressions, and multinomial regressions.

Results

First, the effectiveness of mentoring in improving components of mental health (i.e., improving life satisfaction and positive affect and reducing negative affect, internalizing symptoms, and externalizing symptoms) was examined. The mentoring intervention was not effective for improving the individual components of mental health compared to the control group. These results could be impacted by the small sample size, shown by the power analysis to be insufficient to reveal statistical significance at $p < .05$.

At baseline, participants were accurately classified into the four categories of mental health based on the DFM framework. The classifications were divided in similar ratios to previous research: Complete Mental Health group (62%), Symptomatic, but Content group (7%), Vulnerable group (18%), and Troubled group (13%). Previous research has shown that a majority of students fall into the Complete Mental Health group (e.g., range of 57-67% in other studies) while a smaller proportion (approximately 8-15% each) of students fall into the other classification (Antaramian et al., 2010; Suldo & Shaffer, 2008). Results revealed no statistically significant differences between mentoring and control group students at baseline, $\chi^2 (3) = 7.57$, $p > .05$.

At posttest, participants were categorized into the dichotomous variable (i.e., positive change or negative change) as follows: 70% of mentored students ($N = 46$) showed a positive change compared to 67.7% of control students ($N = 23$) reporting a positive change in mental health group classification (see Table 9). Results suggested that the majority of the students in both groups experienced a positive change. A logistic regression was conducted to examine the hypothesis that mentored students will demonstrate a positive improvement in mental health group compared the control group. This hypothesis was not supported. Results showed that the majority of the students in both groups experienced a positive change.

Due to limited variability in the findings, an exploratory analysis was conducted to further examine the level of mental health group change. The change was divided into three groups: Negative Change, Slight Positive Change, and Change to Complete Mental Health. In the control group, half of the students (50%; $N = 17$) was placed in the Slight Positive Change Group, 10 students (29%) were in the Negative Change group, and 7 students (20%) were placed in the Change to Complete Mental Health Group. In the mentoring group, the majority (54.5%; $N = 36$) was categorized into the Slight Positive Change Group, 33.3% of the students ($N = 22$) were in the Negative Change group, and 12.2% students ($N = 8$) were in the Change to Complete Mental Health (see Table 9).

Two comparisons were made: (a) Change to Complete Mental Health versus Negative Change and (b) Change to Complete Mental Health versus Slight Positive Change. The comparison of Change to Complete Mental Health versus Slight Positive Change group suggested that working with a mentor statistically significantly ($p < .05$) increased the odds of belonging to the Slight Positive Change group (see Table 10) compared to the control group. The odds ratio has a moderate deviation from one indicating a moderate effect size for this prediction. For the Change to Complete Mental Health classification, no significant difference was found between the treatment and control groups.

A final multinominal regression was conducted to test whether the hypothesis group classification would positively change for students participating in the AMPED treatment. That is, whether DFM group classification was predicted by students in the control group and students with mentors. This model did not produce significant results.

Discussion

Initial findings suggest that mentoring had no impact on changing mental health classification. Results did, however, support the previous literature of four unique mental health classification using the DFM framework classification (Antaramian et al., 2010; Suldo & Shaffer, 2008). Specifically, two additional groups (Vulnerable and Symptomatic, but Content) identified in the DFM by

assessment of well-being would not have been identified using the traditional model of mental health. This additional information could aid professionals in identifying students with different levels of mental health needs and, thus, being able to triage according to mental health needs. However, this approach has not been explored, so additional research is needed on the DFM framework to understand how mental health professionals could implement the DFM framework into MTSS to perhaps refine triaging to appropriate levels of support.

The binomial logistic regression did not significantly predict positive DFM classification movement. However, the multinomial regression significantly predicted that students with mentors underwent a slight positive change in group classification compared to the control group. This finding suggests that students with mentors may be more likely to experience small positive group movement than the control group. Therefore, the mentoring program may be an appropriate prevention strategy for Tier 1 MTSS services, or students who are on a wait-list of services from mental health professionals. Again, mental health professionals may be able to address the current limitations of mental health services by increasing the amount of time and providing higher quality of services to students with a Tier 2 or Tier 3 level of mental health needs (Walcott, Lyson, & Loe, 2017; Weir, 2012). Further exploration of this possibility is warranted to fully understand the implications of these findings.

Limitations

The present study was an unfunded dissertation project. The main limitation is the small sample size. The study's analyses were vastly underpowered. Therefore, it would be extremely difficult to detect statistical significance. Another limitation is the unequal group sizes. Since the group sizes were small and unequal, the ability to detect statistical significance might have been further impacted. Other methodological factors related to limitations include the use of nonstandardized measures, fidelity of implementation, and the historical event of Hurricane Harvey.

Hurricane Harvey was a Category 4 hurricane causing approximately $125 billion in damage in Southern Texas (Emanuel, 2017). The final limitation involves the DFM framework. The DFM framework is relatively new; therefore, the theory underlying the framework may not fully explored and understood at this time.

Future Directions

Although marginal, the present study provides evidence to support notion that nonprofessionals may be able to effect a small change to mental health classification using the DFM framework and, therefore, alleviate the burden on school mental health providers. However, it is imperative that DFM framework be explored further to understand the feasibility of using the framework in schools for identification and intervention. Thus, research is needed to thoroughly explore the DFM theory and its potential for assisting researchers in developing intervention practices that can be tested, replicated, and generalized. Additional research is also needed with larger sample sizes to investigate if the current results could be replicated and fully determine whether or not the hypothesis that nonprofessionals can promote mental health from the DFM framework is supported. This research could potentially help solve the current crisis of the high need for mental health services and lack of services available.

CHAPTER II

Literature Review

Evolution of School-Based Mental Health for Adolescents

Before the 1950s, traditional mental health services were provided to youth (children and adolescents) in primary care centers or private practices (Catron, Harns, & Weiss, 1998). Lack of interest in or barriers to accessing services resulted in limited use of these services, leading to school-based mental health services as the *de facto* service delivery option for many children and youth.

Provision of mental health services in school settings made sense since schools represented a readily available and natural setting for services to students (Nelson, Babyak, Gonzalez, & Benner, 2003). In a further evolution, schools partnered with community mental health agencies and programs to promote a transition from traditional mental health services to school-based mental health services (Weist, 1997). In ensuing years, researchers investigated the impact of school-based mental services on important child outcomes, and found positive effects across an array of important student outcomes, including academic success and reduced problem behaviors – evidence that school-based mental health services were a viable alternative to more traditional modes of mental health services (Weist, Garbacz, Lane & Kincaid, 2017; Weist et al., 2014). The promise of school-based service delivery led to changes in federal legislation positively impacting mental health services in schools (Flaherty & Osher, 2003), including more funding for mental health services in schools. The advent of school-based service delivery heralded many initiatives targeted at improving child and youth mental health.

History of Mental Health Services in Schools

From the 19th to the 21st century, the school-based mental health landscape changed in numerous ways with far-reaching implications. The changes were driven by increases in the school-based population, challenges with integrating culturally diverse students in schools, and recognition of

the developmental impact of trauma over the lifespan, especially in children and adolescents (Weisz, 2005). As the work force grew in the 19th century, more and more children started to attend school instead of being home-bound (e.g., children attending school instead of working on family farms). And as the population of students in schools grew, educators became more aware of the high prevalence of behavior problems in children and adolescents that were either untreated or undertreated (Weisz, 2005). As the prevalence of behavioral problems increased, educators noted that many of the problems were associated with psychological symptoms or illness in students (Weist et al., 2017). Legislation to address the mental health needs of children and youth soon followed.

One of the first legislative acts addressing mental health for youth was The Community Mental Health Act of 1963, which drastically changed mental health service delivery by decreasing institutionalization and promoting outpatient treatment options. It was the first law to support community mental health centers to provide services to promote psychological services to adults and children (Weist et al., 2017). During this legislative shift, the field of psychology grew, as psychologists learned more about the connection between the environment and the individual and, more importantly, prevention of mental illness, especially for children and youth. With this initial legislation success, advocates continued to push for change in the mental health landscape for children and youth, culminating in landmark legislation.

One such landmark legislative act was The Individuals with Disabilities Education Act (IDEA) passed in 1975. IDEA mandated the inclusion of all students in least restrictive environments. This meant that children with disabilities were to be educated, to the maximum extent appropriate, alongside students without disabilities. Further, the placement of these students with disabilities must be consistent with their educational need. The law made it necessary for mental health professionals to be included as essential members of school-based teams who provide educational assessment, evaluation, and treatment of students in need of services (Flaherty & Osher, 2003). Additionally,

mental health professionals, such as school psychologists and school counselors, were to provide direct and indirect services to students with disabilities and their families. However, as a result of the almost exclusive focus on academic rather than mental health concerns, student emotional and/or social disturbances were not adequately addressed (Flaherty & Osher, 2003), and many of children and youth continued to demonstrate distress.

In 1997 the passage of an amendment to IDEA expanded special education services to include supporting and addressing the emotional and/or behavioral disabilities of students. Additionally, the amendment expanded services to include individualized educational plans (IEP), schoolwide prevention, intervention, and program development for students with emotional and/or behavioral disabilities (Weist et al., 2017). Despite the promise of school mental health services afforded by IDEA, funding challenges and lack of qualified mental health personnel currently limit the availability of school-based mental health services.

Challenges related to funding and availability of qualified personnel in schools have translated to many children and youth not receiving needed services. In 2010, for example, millions of children reported to have mental health issues warranting intervention were not receiving services (Kenney, Lynch, Cook, & Phong, 2010; U.S. Department of Health and Human Services, n.d.). To address these concerns, the government pursued new legislation and reform. For example, The Patient Protection and Affordable Care Act (ACA) led to greater access to prevention and mental health treatment services in both medical and educational settings (English, 2010). Mental health advocates in schools responded to the passage of ACA by adopting a public health approach that incorporates a school-based multi-tiered system of support: universal, targeted, and individualized intervention (U.S. Department of Education, 2010). Further support for the facilitation of mental health service delivery came from the Every Student Succeeds Act (ESSA) passed in 2015. Through the ESSA, mental and behavioral wellness was acknowledged as an important and direct link to student academic success.

ESSA provided funding to schools to improve and grow mental and behavioral health services (Mathis & Trujilo, 2016).

In response to federal assistance, and to organize the delivery of services to all students, schools adopted a multi-tier system of supports (MTSS) framework to reach the entire student body in terms of academic, emotional, and behavioral support. The MTSS framework is designed to provide academic and behavioral support services for all students based on demonstrated levels of need. Services are divided into several tiers: all students (universal/Tier 1), at-risk students (targeted/Tier 2), and students with severe/chronic problems (tertiary/Tier 3) (Rossen & Cowan, 2014). Students are assessed at each tier to identify the level of service need and provided a corresponding level of intervention (Rossen & Cowan, 2014). Students are monitored for their academic, behavioral, and emotional progress through screeners given by the school staff (e.g., teachers, academic, emotional, or behavioral interventionists, and professional mental health staff), and moved to different tiers based on their functioning in the different areas. Placement decisions are typically made by an MTSS team (i.e., data-based decision-making team.)

Despite the advantages of MTSS and other service delivery models, the lack of service providers (e.g., mental health experts, counselors) in schools limits the potential impact of these models. That is, while the majority of schools offer some access to mental health service providers (e.g., school counselors, school psychologists, social worker), these professionals often have large caseloads that limit the amount of time spent implementing direct services (Walcott et al., 2017; Weir, 2012). Additionally, since MTSS and other service delivery models are not federally mandated, schools may implement MTSS differently with minimal oversight of the fidelity of implementation. Thus, the quality of the services provided in the MTSS framework may vary greatly across schools.

Compounding issues involving lack of mental health personnel and quality mental health service delivery models, schools also struggle to accurately identify students' mental health problems.

That is, although students are asked to complete mental health screeners through MTSS, many may go unidentified due to poor instrument sensitivity and specificity (Mills et al., 2006). More comprehensive measures to identify students with emotional and behavioral needs are often costly and require specially trained personnel for administration and progress monitoring (Short & Strein, 2008). Complicating the matter is the tendency for schools to focus almost exclusively on externalizing behaviors (e.g., noncompliance) at the expense of internalizing behaviors (e.g., depression) (Domitrovich et al., 2010). Thus, many students, especially students with internalizing disorders, often go underserved.

Despite laws requiring that all students identified as having an academic and/or socio-emotional need receive appropriate services, many students go without such services due to limited resources within the schools. Those professionals whose job within the schools is to identify and provide these services are often overburdened with high caseloads (National Association of School Psychologists, 2010; Walcott et al., 2017). Overwhelmingly, mental health professionals such as school psychologists spend their time conducting comprehensive assessments to determine the presence or absence of academic and social/emotional needs of their students at the expense of providing mental health interventions (Barley & Beesley, 2007; Data Accountability Center, 2011; National Association of School Psychologists, 2010; Walcott et al., 2017). These assessments focus almost exclusively on academic deficits and psychopathology and often fail to consider the students own evaluations of their lives or their subjective well-being. Given the existing problems with current service delivery models, more comprehensive and inclusive paradigms in school-based service delivery models are necessary.

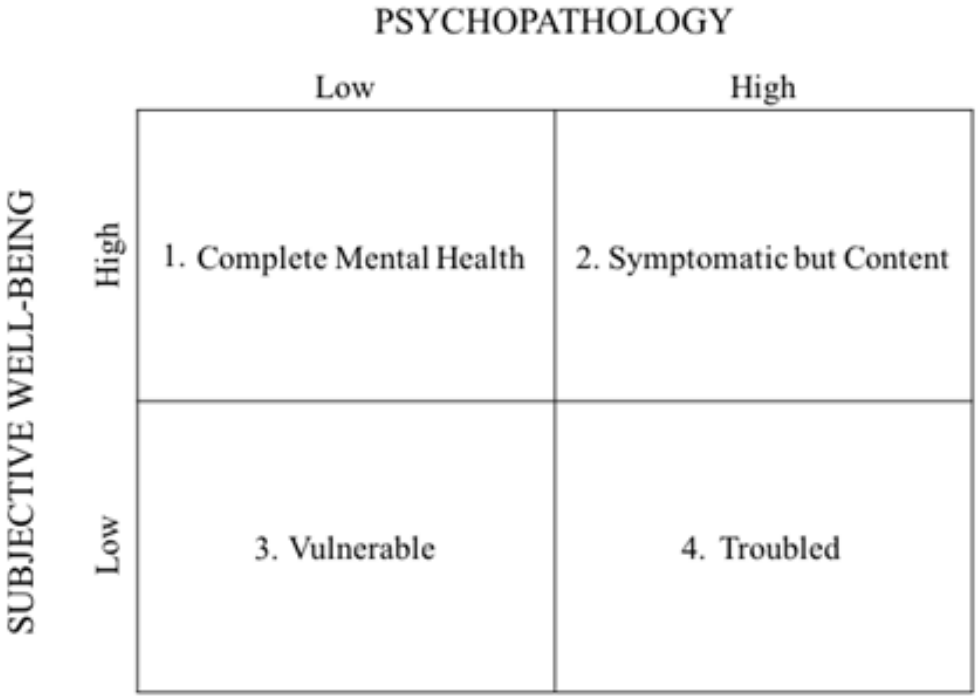
Dual-Factor Model of Mental Health

One new conceptual framework that may address both resource limitations and problems with identification of mental health problems is the dual-factor model of mental health (DFM). By

conceptualizing mental health by using the DFM model, mental health services can reach a broader population through this alternative paradigm. The new paradigm both meets the service delivery needs of more students and also can possibly increases the number of personnel (e.g., nonprofessionals) capable of providing needed mental services thus expanding the pool of services providers to meet needs of under or unserved students (Greenspoon & Sasklofske, 2001).

The DFM posits that there are two dimensions of psychological functioning running along a continuum: mental health and mental illness (Greenspoon & Sasklofske, 2001). The DFM framework is based on the theory that mental health and mental illness are measured by two separate constructs, psychopathology and subjective well-being. The inclusion of well-being provides a unique perspective on an individual's overall functioning (behavioral, emotional, and social) compared with the traditional mental health model (focused only on symptoms of psychopathology) (Greenspoon & Sasklofske, 2001). Instead of identifying whether an individual is mentally healthy or mentally ill (i.e., medical model orientation), the DFM framework categorizes individuals into four categories of mental health with different mental health needs based on an individual's level of well-being and psychopathology: (a) Complete Mental Health (low psychopathology and high well-being), (b) Symptomatic, but Content (high psychopathology and high well-being), (c) Vulnerable (low psychopathology and low well-being), and (d) Troubled (high psychopathology and low well-being). Figure 1 depicts the four distinct DFM categories of mental health. Incorporating well-being into the definition of mental health creates more fine-tuned variability and allowing for improved identification and classification and, thereby, the opportunity to deliver mental health services by nonprofessionals and professionals alike depending on level of need.

Figure 1. Dual-factor model categories.



Research on the DFM has shown that different academic and social-emotional outcomes correlate with the four mental health groups (Suldo & Shaffer, 2008). For example, the Complete Mental Health (CMH) group tends to have the most positive academic and social-emotional outcomes (academics, behaviors, and social relationships) compared to the other DFM groups (Suldo & Shaffer, 2008). Conversely, the groups characterized by low subjective well-being (Troubled and Vulnerable groups) tend to be at greater risk for developing negative long-term academic, behavioral, and social outcomes (Antaramian et al., 2010; Kelly et al., 2012; Suldo & Shaffer, 2008; Suldo et al., 2011). Students in the Troubled group are most often identified by the schools as eligible for special education services due to their high levels of psychopathology. However, based on the DFM model, the presence of high levels of psychopathology should not be the sole indicator of whether or not students are in need of mental health services.

Two groups that schools may not be identifying and intervening with are the Vulnerable group and the Symptomatic, but Content group. Findings of studies of the former suggest that these students were more likely to develop negative mental health symptoms (e.g., increased likelihood of developing psychopathology) or have negative outcomes (e.g., poor academic performance, fewer social connections, and less engagement in extracurricular activities) over time (Antaramian et al., 2010; Kelly et al., 2012; Suldo & Shaffer, 2008; Suldo et al., 2011). Therefore, for the Vulnerable group, it is essential that prevention services be implemented early to mitigate the onset of serious mental health symptoms and corresponding negative outcomes. Additionally, early prevention might alleviate the demand on school resources and caseloads of mental health professionals by preventing these youth from developing severe mental health concerns and, thus, needing more intense services provided by highly trained individuals who are in limited supply

Studies of adolescents characterized as belonging to the Symptomatic, but Content group have shown that members of this group are less susceptible to the negative effects of psychopathology. In this group, well-being acts as a protective factor that mitigates the impairments and symptomatology associated with high levels of psychopathology (Kelly et al., 2012). Additionally, students presenting with higher levels of well-being reported higher self-esteem and greater sociability even among those with high levels of psychopathology (Greenspoon & Saklofske, 2001; Kelly et al., 2012). Because these students (Symptomatic, but Content group) show high levels of psychopathology, they often qualify for mental health services. However, they students may be functioning both academically and/or socially-emotionally at higher levels and, thus, may need less intensive intervention that can be addressed by nonprofessionals (Greenspoon & Saklofske, 2001). As such, this group may benefit from Tier 1 services – services available to all students within the school – thus reducing the need for more intensive services and use of highly trained professional personnel.

By reconceptualizing mental health services classification through the DFM framework, more mental health resources may become available to more students in need. With a possible reduction in the caseloads of mental health professionals such as school psychologists, more of their time can be spent identifying and providing services for students with the greatest need. Students in need of less intensive services could be served by nonprofessionals such as school mentors to meet their needs.

In summary, conceptualizing mental health service delivery from a DFM framework may provide schools with an effective means of early detection of student mental health problems to inform appropriate and early prevention intervention within MTSS. Using the DFM framework, a greater number of students in need of mental health services can be identified and differentiated along levels of mental health support need. Therefore, the use of DFM framework is a promising approach to reducing the excessive caseloads of school specialists by providing tiered services in terms of triaging students mental health needs based on DFM groupings.

To date, no published studies have examined the feasibility of using a DFM framework to provide comprehensive mental health services in schools. Despite the absence of studies, the benefits of using the DFM framework within schools are promising, but studies on interventions that target student well-being are needed. The current literature on subjective well-being suggests that it is malleable to interventions and can be implemented effectively by nonprofessionals.

Subjective Well-Being

A key underlying construct of the DFM model is subjective well-being, referring to the affective and cognitive evaluations of one's satisfaction with one's life (Diener et al., 2009). Subjective well-being is comprised of three distinct, but related, factors: (a) life satisfaction, (b) experiences of pleasant/positive emotions, and (c) minimal experiences of negative emotions (Diener, 2000). Life satisfaction includes both domain-specific and global appraisals of one's satisfaction with life. Global life satisfaction refers to an individual's overall evaluation of personal happiness; in

contrast, domain-specific life satisfaction is typically evaluated as happiness across various life domains, including self, friends, family, and school. Strong direct relations between domain-specific and global life satisfaction have been supported throughout the literature and through factor-analytic studies (Huebner, Gilman, & Laughlin, 1999). Experiences of positive emotions include frequent pleasant feelings and moods (e.g., elation, delight, and joy), while experiences of negative emotions or affect refer to bothersome or disagreeable emotions (e.g., guilt, anger, and sadness). The positive and negative affective components of subjective well-being refer to emotions and moods and as such are susceptible to changes and shifts within an individual. That is, an individual reporting high subjective well-being would have a positive evaluation of overall quality of life and experience a greater degree of positive emotions and moods relative to negative ones. The integration of both positive and negative indicators of subjective well-being into mental health assessment yields a more comprehensive picture of an individual's psychological functioning and quality of life.

History of subjective well-being. Research on subjective well-being has its roots in positive psychology. Initial studies examined the relation between subjective well-being and overall happiness and productivity in adults. While the majority of these studies were conducted with adults, recent studies have been extended to include youth populations (Gilman, Huebner, & Furlong, 2014). Findings from these studies generally support the notion that well-being is moderately stable over time and plays a crucial role in, and is directly related to, an individual's mental health and daily functioning (Gilman et al., 2014; Haranin, Huebner, & Suldo, 2007; Suldo & Huebner, 2004). These promising findings have led to a body of literature on youth's subjective well-being. Furthermore, emerging studies have begun to investigate how interventions can be developed and implemented to promote well-being and, thus, improve youth outcomes.

Well-being and individual functioning. Well-being has a strong relationship with mental health and daily functioning. Research using the positive psychological approach to mental health has

shown that individuals with higher levels of subjective well-being are more likely to possess more positive attributes (self-esteem, self-efficacy, resilience) and fewer negative attributes (negative behaviors and negative emotions (Huebner, 2004; Suldo & Huebner, 2004). Additionally, several studies have found that, among adolescents, having higher levels of subjective well-being predicted lower levels of internalizing behaviors: depression, anxiety, and social distress (Haranin et al., 2007; Huebner, Funk, & Gilman, 2000). In turn, students with higher levels of well-being engaged in less delinquency and reported fewer aggressive and externalizing behaviors (Gilman & Huebner, 2006; Suldo & Huebner, 2006).

Overall, the research suggests that subjective well-being among youth may act as a protective factor against vulnerability to the development of psychopathology (Huebner, 2004; Suldo & Huebner, 2004). Finally, research has also shown support for the relations between subjective well-being and other positive outcomes in youth, including social relations with peers and family and academic achievement (Dew & Huebner, 1994; Proctor et al., 2009; Suldo & Huebner, 2004 Suldo & Shaffer, 2008).

Well-being and social relationships. A strong and positive relationship between adolescents' well-being and the quality of their social relationships has also been documented. Specifically, students with greater levels of well-being perceived more social support and had a better-quality relationship with their family, peers, and teachers (Dew & Huebner, 1994; Proctor et al., 2009; Suldo & Huebner, 2004, 2006). Conversely, students with lower levels of well-being reported increased perceptions of peer victimization and decreased perception of parental support (Martin, Huebner, & Valois, 2008; Saha, Huebner, Suldo, & Valois, 2010). Furthermore, the associations between well-being and social relationships were stable over time. Finally, students with higher levels of well-being made noticeable improvement in their relationship quality with peers and teachers over an academic school year (Stiglbauer, Gnambs, Gamsjäger, & Batinic, 2013). These findings suggest that well-being

plays an important role in how students experience social relationships and how they interact in social settings.

Well-being and academic functioning. A modest-to-moderate relationship has also been found between subjective well-being and academic success. For example, across elementary and secondary grade levels, students with higher levels of well-being were more likely to have higher GPAs and standardized test scores (Gilman & Huebner, 2006; Quinn & Duckworth, 2007; Suldo & Shaffer, 2008; Suldo, Shaffer, & Riley, 2008). Similarly, high levels of well-being at the start of the school year predicted higher GPAs and fewer absences one year later (Suldo et al., 2011). Furthermore, students with higher levels of life satisfaction, a component of subjective well-being, tended to have more positive perceptions of school (e.g., academic self-efficacy, perceived school support) and higher level of school engagement (e.g., high levels of participation in school-based and extracurricular activities) (Danielsen, Samdal, Hetland, & Wold, 2009; Gilman, 2001; Suldo et al., 2008; Vilhjalmsson & Thorlindsson, 1992). These studies support the notion that higher levels of well-being are related to both increased short- and long-term academic success.

Overall, studies on the influence of well-being in youth have demonstrated its relations to various positive personal circumstances, including psychological health, academic functioning, and social interactions (Dew & Huebner, 1994; Proctor et al., 2009; Suldo & Huebner, 2004 Suldo & Shaffer, 2008). In particular, findings have shown that subjective well-being may prevent future problems from manifesting. Thus, attending to the subjective well-being of students in schools can serve a preventive role in the promotion of youth mental health, a foundational tenet of the DFM framework. However, before capitalizing on the benefits of subjective well-being in students, it is vitally important that schools are able to accurately measure and identify different levels of subjective well-being within youth.

Measurement of subjective well-being. Subjective well-being is commonly assessed through a self-report measure that taps into its three distinct factors: life satisfaction and positive and negative affect. The most widely used measures of subjective well-being with adolescents include the (a) *Students' Life Satisfaction Scale* (SLSS; Huebner, 1991b); (b) *Multidimensional Students' Life Satisfaction Scale* (MSLSS; Huebner, 1994); (d) *Brief Multidimensional Students' Life Satisfaction* (BMSLSS; Seligson, Huebner, & Valois, 2003, 2005); and (d) *Positive and Negative Affect Scale for Children* (PANAS-C; Laurent et al., 1999). Each scale has a specific target audience, intended use, strengths, and limitations.

Students' Life Satisfaction Scale (SLSS). The SLSS (Huebner, 1991a, 1991b), the first measure developed to assess life satisfaction among youth, is a seven-item self-report measure for youth ages 8 to 18 years old. Youth are asked to indicate on a six-point scale ranging from 1 (strongly disagree) to 6 (strongly agree) the degree to which they endorse general statements (e.g., "My life is going well") (Gilman & Huebner, 1997; Huebner, 1991a). Higher scores indicate higher levels of life satisfaction.

The SSLS has been used since 1990s to investigate diverse ranges of populations, from at-risk students to gifted students to chronic health conditions (Ash & Huebner, 1998; Dew & Huebner, 1994; Hexdall & Huebner, 2007; Huebner, 1991a; Huebner & Alderman, 1993). A review of the psychometric properties suggests good internal consistencies (.82), sensitivity to change, and meaningful patterns of convergent and discriminant validity (Huebner & Hills, 2013). The main limitation of this measure is that the wording of certain questions may be problematic for younger children (Proctor, Linley, & Maltby, 2009). Additionally, it only assesses the cognitive component of well-being.

Multidimensional Students' Life Satisfaction Scale (MSLSS). The MSLSS is a 30-item measure (or 40 item measure – original) to assess a youth's satisfaction in five specific life domains:

school, family, friends, self, and living environment (Huebner, Zullig, & Saha, 2012). It may be used for children (8-18 years old) with varying ability levels, ranging from mild developmental disabilities to gifted children. Items are rated on a 6-point Likert scale. In the review of the measure, its reliability was found to be adequate with internal consistency ranging from .70 to .90, and retest reliability falling within the same range (Huebner & Hills, 2013). Additionally, the measure demonstrates adequate convergent and discriminant validity across multi-informant and multi-method assessments.

An advantage of this measure is that it assesses the five specific life domains whereas the majority of measures on subjective well-being tend to only measure global life satisfaction. The primary limitation of the measure is its length compared to the other life satisfaction measures and that it only assesses cognitive component of life satisfaction.

Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS). The BMSLSS was developed as a brief screener of the five domains life satisfaction for children age 8 to 18 (Seligson et al., 2003). The BMSLSS has six items reduced from the 30-item MSLSS described above. The measure uses a 7-point option scale (Andrews & Withey, 1976); however, a 5-point option is also available (Athey, Kelly, & Dew-Reeve, 2012). The review of the measure suggests that the reliability is adequate (.70 - .80), scores are stable across short and long periods of time, and it has acceptable convergent and discriminant validity (Huebner & Hills, 2013; Seligson, Huebner, Valois, & Suldo, 2006). Given that this measure has similar psychometrics to the longer version (MSLSS), but is significantly shorter, it may be more efficient to switch to the BMSLSS in many school-based situations for time efficiency. Finally, similar to the previous measures, the BMSLSS, does not account for the affective features of subjective well-being.

Positive Affect and Negative Affect Scales for Children (PANAS-C). The PANAS-C is a 27-item self-report scale that assesses the positive (12 items) and negative affect (15 items) of a child (Laurent et al., 1999). The child is instructed to reflect on how he or she felt in the past week and then

respond to the item. The scale has shown consistent reliability (high internal consistency on both scales) and significant convergent and discriminant validity (Ebesutani, Regan, Smith, Reise, Higa-McMillan, & Chorpita, 2012; Laurent et al., 1999). Ebesutani and colleagues (2012) also developed an abbreviated version of the PANAS-C consisting of 10-items: 5 positive emotions (e.g., joyful and proud) and 5 negative emotions (e.g., miserable and scared). Cronbach's alpha coefficient for the 5-item PA scale and 5-item NA scale was.85 and .83, respectively, indicating acceptable internal consistency (Ebesutanieta et al., 2012). The correlation between the PANAS-C NA and PA scales is -.14 ($p < .01$), demonstrating discriminant validity (Ebesutanieta et al., 2012). PANAS-C is the only established measure to assess the affective component of subjective well-being, but it does not assess the cognitive component of well-being. It is commonly used with the measures described above in order to get a full picture of the youth's subjective well-being.

To summarize, support for conceptualizing mental health, to include positive psychological indicators such as subjective well-being, has gained support over the last few decades. Findings relating subjective well-being to various positive life indicators have promoted research investigating ways to capitalize upon it as a means of improving mental health outcomes in children and youth. In turn, this has led schools and organizations to implement programs aimed at promoting student well-being. However, despite schools adopting these programs as a means of improving student mental health, the move away from the traditional conceptualization of mental health – the presence or absence of psychopathology – has been slow. Nevertheless, schools may benefit from adopting a more holistic framework, such as the DFM, that includes positive and negative indicators of mental health. While no research has investigated the application of the DFM model in schools, much can be inferred from studies of interventions targeting well-being, a foundational component of the DFM framework.

Interventions to promote student well-being in schools. As previously noted, schools can serve as an ideal setting for intervening on students' subjective well-being (Seligman & Csikszentmihalyi, 2000). Since well-being has been found to play a role in positive outcomes (e.g., individual functioning, meaningful relationships, and academic functioning) for adolescents, many schools have started to incorporate social-emotional learning and positive psychology interventions to support the positive development of well-being in their students.

Social-emotional learning. Social-emotional learning (SEL) is a process of facilitating the learning of fundamental skills for daily functioning by promoting emotional well-being. Skills taught in SEL range from recognizing and managing emotions to caring for others to problem solving (Collaborative for Academic, Social, and Emotional Learning, 2005; Durlak et al., 2011). SEL interventions continue to grow in popularity, with over 200 programs being used in schools, and approximately 66 targeting middle schools (Durlak et al., 2011). But despite their increased popularity, there is minimal research to identify critical features of these programs.

A review of existing SEL studies revealed a focus on general principles (e.g., social skills and school engagement) rather than critical features of the interventions (e.g., how to cope with stress using cognitive-behavioral therapy), making it difficult to synthesize the nature of the programs. Nevertheless, the following characteristics were identified as major themes of SEL curricula: skill acquisition (e.g., aggression, violence, exercise to promote self-esteem, social skills, and promoting mental health) and school climate characteristics (e.g., schoolwide character education program, prevention of violence or bullying, peer and family initiatives) (Durlak et al., 2011; Weare & Nind, 2011).

Numerous programs have been listed as SEL programs because they target some area of socio-emotional development in youth. While it may not be clearly stated how these programs promote well-being, many of them do so via improving youths' concept of their cognitive and affective self-

evaluation of their life and experiences (i.e. well-being). Similar to outcomes of individuals with high subjective well-being, when programs are implemented effectively, they are linked to a number of positive outcomes, including better academic performance, improved social relationships, fewer depressive symptoms, greater indicators of mental health, fewer problem behaviors, and positive youth development (Brigman, Villares, & Webb, 2011; Catalano, Hawkins, Berglund, Pollard, & Arthur, 2002; Domitrovich et al., 2007; Greenberg, Domitrovich, & Bumbarger, 2001; Horowitz & Garber, 2006; Reyes, Brackett, Rivers, Elbertson, & Salovey, 2012; Wang, Iannoti, & Nansel, 2009). Although the programs may differ methodologically (see Durlak et al., 2011 for meta-analysis), it is reasonable to assume that school-based SEL interventions may produce positive effects indirectly by promoting well-being (Durlak et al., 2011; Weare & Nind, 2011).

Despite such promise, SEL programs have been criticized as suffering from several limitations. One major concern is lack of clarity on the underlying mechanisms of change that drive the SEL programs and how they lead to changes in well-being (Waterhouse, 2006). Thus, it is still unclear which features of SEL curricula are needed for change and which ones are not. Another criticism involves the sustainability of SEL programs (Durlak et al., 2011; Hoffman, 2009). That is, most social-emotional curricula are implemented by teachers, university researchers, or outside consultants, and this may not be sustainable long term due to the cost of resources (e.g., financial costs, time to train, dissemination of information, and fidelity of program). The sustainability issue is mentioned in several studies, the with primary concern surrounding who will implement the programs long term and how to maintain program fidelity (Elias et al., 2003; Fagan et al., 2015; Jones & Bouffard, 2012; Oberle, Domitrovich, Meyers, & Weissberg, 2016).

Positive psychology interventions. Positive psychology interventions (PPIs), intended to improve subjective well-being by targeting positive psychology constructs such as gratitude, character strengths, and hope, were initially developed for adults, and later adapted for youth. PPIs are often

implemented in schools as a Tier 1 intervention with the goal of increasing well-being and reducing the risk of mental health problems of all children and youth.

The most popular PPIs include (a) gratitude interventions, (b) character strength interventions, and (c) interventions on hope. In gratitude interventions youth typically engage in journaling, writing a letter, drawing a picture, or exposure to a comprehensive grateful-thinking curriculum (Froh, Sefick, & Emmons, 2008; Froh, Kashdan, Ozimkowski, & Miller, 2009; Froh et al., 2014). Many of these interventions have been associated with positive outcomes related to well-being, such as fewer negative emotions, lowered depression, and greater positive emotions and life satisfaction (Froh et al., 2009, 2014). However, some studies have shown no significant changes in negative or positive emotions and life satisfaction (Froh et al., 2008; McCabe et al., 2011).

As second type of PPI, character strength intervention, focuses on increasing students' positive character traits. Character strengths include a comprehensive set of 24 cross-culturally recognized character traits that represent moral values and virtues (e.g., love, creativity, and persistence) (Peterson & Seligman, 2004). Character strength interventions include a curriculum to develop and practice the use of these traits such as Strathhaven Positive Psychology program with 20 to 25 lessons or 6-week strength program using the Gallop Strength framework (Austin, 2005; Seligman et al., 2009). The findings on character education are mixed. While some studies have found that children in these interventions improved overall functioning, others have found no effect of this type of intervention (Proctor et al., 2011; Seligman, Steen, Park, and Peterson, 2005).

Hope, the third construct often emphasized in PPIs, is defined as a positive motivational state where thoughts and strategies are developed to meet an individual's goals (Snyder et al., 1991). Hope interventions teach youth about hope, help youth develop goals, and teach students skills in reframing barriers to success (Green, Grant, & Rynsaadt, 2007; Marques, Lopez, & Pais-Ribeiro, 2011; Owen & Patterson, 2013). Evidence suggests that students receiving hope interventions were more likely to

demonstrate greater positive mood levels, well-being, and self-esteem. Further, Owens and Patterson (2013) found that hope interventions ("best possible self") resulted in greater improvement in self-esteem compared to the gratitude interventions.

Taken together, these PPIs show mixed findings that warrant further investigation to better understand the underlying mechanisms and what components of intervention may produce positive outcomes and contribute to improvements in well-being (Boiler et al., 2013; Sin & Lyubomirsky, 2009). Additionally, there is concern about the sustainability of these interventions within the school setting, since many of them must be implemented by trained professionals. However, PPIs do show some promise given that some components of the programs produce improvements in well-being and that it is a construct that is malleable to change.

In summary, subjective well-being is a construct associated with several positive outcomes (e.g., school, personal, and social) over both short and long periods of time. Moreover, the literature supports the notion that well-being can be promoted in interventions implemented by nonprofessionals (e.g., teachers, undergraduates, and graduate students). Yet, the number of investigations into these interventions is still small. The available evidence is mixed and characterized by limitations similar to those of many school-based mental health services (i.e., lack of personnel). Alternative solutions must be explored that emphasize subjective well-being as a key feature of mental health support and are not burdensome to school resources. One such intervention that is already present in schools, can be implemented by professional and nonprofessionals alike, has the potential to meet the mental health needs of a wide population of students, and has the potential to impact well-being is school-based mentoring.

School-Based Mentoring

Mentoring refers to a relationship between a child or adolescent and a nonparental adult (mentor), whereby the adult provides the mentee with wisdom, guidance, and creates an emotional

bond (DuBois & Karcher, 2005). More than 5,000 mentoring programs have been established nationwide, serving over 2 million students (Bruce & Bridgeland, 2014; Dubois, Portillo, Rhodes, Silverthorn, & Valentine, 2011). These mentoring programs aim to create quality relationships between the mentor and the mentee that can lead to positive outcomes, including character development, exploration of career paths, problem solving, coping strategies, and development of life skills (Herrera, DuBois, & Grossman, 2013).

These positive outcomes, in turn, may also promote students' well-being. That is, mentoring programs provide opportunities for students to enhance their well-being through developing coping skills, improving their socio-emotional functioning, and developing their identity (Rhodes, 2005; Rhodes, Spencer, Keller, Liang, & Noam, 2006). Furthermore, when the relationship between the mentor and student is positive and supportive, and emphasizes collaboration and empowerment, this bond may promote student well-being through student character development. Moreover, mentoring can have a positive impact on psychological functioning by promoting the development of optimal coping strategies (DuBois & Karcher, 2005; Jucovy & Garringer, 2008). Taken together, the experiences students have with their mentors can lead to improvement in their subjective well-being.

Theoretical models of mentoring. Despite their popularity, few theoretical models have been advanced to explain mentoring programs (DuBois & Karcher, 2005). Rhodes (2002) provides one of the most widely accepted conceptual frameworks for mentoring programs, which consists of three interrelated processes that can promote positive outcomes: (a) social-emotional learning, (b) cognitive flexibility development, and (c) identity development.

According to this conceptual framework, mentoring promotes social and emotional development through a supportive adult-child/adolescent relationship (mentee). Social-emotional development promotes greater self-awareness and satisfaction with students' lives, which is part of developing well-being. The relationship between the mentor and student is created and supported

through an interpersonal connection characterized by mutuality, trust, and empathy (Rhodes, 2002). The child or adolescent being mentored benefits from the opportunity to interact with an adult to process daily activities and discuss difficult experiences. The mentor can assist the mentee by providing a different perspective and encouraging corrective actions that then can generalize to other situations and settings. The mentee learns to regulate his or her emotions using the feedback from the mentor (Rhodes, 2002). These interactions result in development of emotional and social skills that often lead to more positive affect experiences and decreased negative affect experiences thus promoting well-being.

Although there is no conclusive evidence, through their effect on social-emotional well-being, mentoring relationships have the potential to impact cognitive development. For example, mentors often provide the mentee with new learning opportunities by challenging the mentee to think about and process new or existing ideas (Rhodes, 2002). These interactions, in turn, can lead to the acquisition and refinement of cognitive skills. Further, mentees may become more receptive to their mentors' socially positive values and perspectives (Rhodes et al., 2006). For example, carefully selected mentors often have rich life experiences and expertise that they can share with a mentee. These interactions, defined as "teachable moments," provide opportunities for the mentee to learn how to solve problems independently or seek support (Rhodes et al., 2006). Learning can continue as mentors have the option, depending on the program, of taking mentees to libraries, museums, or other places or activities the mentee may not have access to. Mentors also provide a safe environment for mentees to expand and challenge their thinking and take mentees' thinking a "step further" (Rhodes et al., 2006).

Beyond challenging their thinking through "teachable moments" and exposure to new experiences, mentees learn by observing the mentor. Mentors often demonstrate, explain how or why, and monitor their mentee. By creating a trusting relationship, the mentor can validate and support the

mentee's interests in diverse areas (Rhodes et al., 2006). The validation and support provided by the mentor can promote a positive perspective in the mentee, thus increasing the mentee's well-being. Given the characteristics of mentoring, it has the potential for mentees to develop skills that enhance the problem-solving and coping strategies needed to negotiate the demands of their environment and growing up, and in the process, their well-being may increase as well.

In summary, mentoring creates a supportive relational context whereby adults as mentors can promote the mentee's development through the interrelated processes of social, emotional, cognitive, and identity development. The bond formed through mentoring allows the mentor to guide and support the mentee through the development of skills (e.g., coping strategies, problem solving) that may promote well-being. In turn, increased levels of well-being may buffer or protect the mentee from developing social, emotional, or behavioral problems that interfere with learning and possibly result in mental health problems.

Mentoring as school-based service delivery. Several settings provide mentoring to children or adolescents: school-based, natural, community-based, and e-mentoring. One of the most popular and fastest growing of these is mentoring within the school setting (Dubois et al., 2011), typically during school hours. Students are typically referred to mentors by teachers, counselors, and other school staff (Jucovy & Garringer, 2008).

School-based mentoring offers numerous advantages. First, it utilizes volunteers from the local community or university, thereby reducing the number of school personnel needed compared to other types of interventions. Due to the decreased burden on school personnel, school-based mentoring can allow for more students to be served by adult volunteers who give their time to be a mentor (Herrera, 2004). Another benefit is that the cost of operating a school-based mentoring program is relatively low compared to other service delivery modalities because it uses available resources such as an empty classroom (Herrera et al., 2007).

While encouraging, the literature on school-based mentoring outcomes is mixed, with some studies demonstrating large effect sizes (e.g., social-emotional learning skills, d = .60), and others showing negligible effects (e.g., prosocial behavior, d = -0.11, small) (Bernstein, Rappaport, Olsho, Hunt, & Levin, 2009; Cohen, 1988; Dubois, Holloway, Valentine, & Cooper, 2002; Dubois et al., 2011; Wheeler, Keller, & DuBois, 2010). Multiple meta-analyses have suggested that the average effect size of youth mentoring programs is .14, with a range from .03 to .25, relatively small effect sizes using Cohen's *d* guidelines (Dubois et al., 2002; Rhodes, 2008). These different effects may be explained by program differences (e.g., different methodologies, population characteristics, implementation strategies, and data analytic strategies); yet, this is unclear because protocols and procedures of what occur while a mentor is with a student are scarce. Further research, therefore, is needed to specify what mentors are doing with the mentees that leads to change (McQuillin, Lyons, Clayton, & Anderson, 2018).

Despite the mixed evidence, studies continue to highlight the importance of school-based mentoring and its impact on adolescent development. For example, a large randomized clinical evaluation of Big Brother Big Sister School-Based Mentoring for 1,139 students revealed that students with mentors improved their academic performance (d = 0.09) and decreased problem behaviors (d = -0.26) compared to the control group. Support for mentoring's positive effects were found in smaller studies as well. For example, students engaged in school-based mentoring were more likely to improve their peer relationships (d = .58) and school connectedness (d = .34) (Karcher, 2008; Portwood & Ayers, 2005).

While these findings are promising in terms of improvements in academic performance, problem behaviors, and peer relationships among mentees, the results must be interpreted with caution as the studies vary by site, covariates, and participants (Bernstein et al., 2009; Herrera et al., 2007; Karcher, 2008; Wheeler et al., 2010). Inconsistent findings may reflect study design issues,

characteristics of the interventions, samples, measurement issues, data analytic strategies used, and lack of manualized implementation procedures. It is clear, therefore, that additional research is needed to attempt to disentangle some of the findings. One program that has tried to address discrepancies in the literature by manualizing the intervention is a school-based mentoring program called Academic Mentoring Program for Education and Development (AMPED).

AMPED

AMPED is an evidence-based mentoring program that uses a goal-focused and target-driven model of mentoring that incorporates specific academic goals and skill-building activities (McQuillin, Strait, Smith, & Ingram, 2015). In its current form, AMPED consists of eight sessions that focus on developing skills in four domains: academic behaviors, emotional regulation, relationship building skills, and behavior regulation. Each session lasts approximately 60 minutes over an 8- to 10-week period. The mentoring program is described in detail in Table 1.

AMPED research. The AMPED program was developed by Dr. Samuel McQuillin, who piloted the program in a charter school under his supervision and training. In the initial pilot study, 134 middle school students (6^{th} and 7^{th} grade; age = 11.9 years old) were randomized to a mentor (n = 74) or placement in a control group (McQuillin et al., 2015). The performance of students with mentors on the subjective well-being measure was better than that of students in the control condition (d = .25). Additional analyses showed that students with mentors received about one less behavioral office referral than the control group for the semester. Furthermore, academic performance results showed a positive effect for math grades (d = .30). However, nonsignificant results were found for school connectedness (d = .12), teacher connectedness (d = .12), and grades for reading (d = .02), English (d = .16), and science (d = -.05).

In a follow up evaluation, McQuillin and Lyons (2016) found similar positive outcomes for students participating in AMPED. Thirty-six students had mentors and 36 students were placed in the

control group (6th and 7th grade; mean age = 12.54 years old). Students with mentors showed improvements in life satisfaction (*d* = .49), math (*d* = .42), and English (*d* = .59),

Table 1

AMPED Program Curriculum Description

Session Number	Description of Session
1	In the initial session, the mentor focuses on developing a relationship with the student by having discussions about the student's daily life, values, and goals.
2	In the second session, the mentor will guide the student an activity about the "Big 3" – organize, goal, skill. The student organizes their schoolwork, creates a goal, and learns a skill to help him or her in her development. The student is asked to complete a self-assessment at the end of the session to guide the next few sessions. The self-assessment addresses the four different categories in which the student needs to build specific skills and tailored for the student.
3	In the third session, the self-assessment is reviewed with the student to gain input for the skill building modules. The mentor also introduces the goal-setting technique of SMART (specific, measurable, achievable, relevant, and timely) goals.
4	In the fourth session, the mentor checks in with the student to gain an understanding of how the student has used goal setting and big 3. The mentor and student select an appropriate skill building module to complete. The skill building modules range from activities to assist with academic skills to problem-solving strategies to how to cope with stress.
5-7	The fifth to seventh session follow a similar sequence as the fourth session with another self-assessment and review built into the fifth and sixth session. The mentor and student focus more time on the skill building modules as the sessions continue.
8	In the final session, the mentor reviews the student's progress throughout the duration of the mentoring program. Additionally, the mentor has the student discuss how to maintain and continue the progress the student has made by reviewing skills and discussing potential concerns. Finally, the mentor discusses what he or she gained from the experience of working with the students as a method of closure.

and school-related absences (d = .05). Further, students with mentors received approximately one less absence than the control group for the semester. These findings provided further evidence of AMPED's role in improving well-being and school functioning for the students who participated.

While it is clear that more research is needed, initial findings on the AMPED program show promising outcomes for adolescent well-being, academic performance, and behavior. By incorporating the DFM, the AMPED program could be a potential method to target student mental health by improving their well-being.

Gaps in the Existing Research

Due to its potential as part of school-based mentoring, there is a need to evaluate the efficacy of AMPED in order to fully understand the outcomes associated with mentoring of adolescents using this curriculum. Further research is needed to examine positive mentoring outcomes with a highly structured mentoring program like AMPED.

AMPED has produced positive effects on subjective well-being, yet no studies to date have examined the effects of mentoring on mental health through a DFM model of mental health. Incorporating an evaluation of well-being in addition to psychopathology yields a more comprehensive understanding of a student's mental health The current study aims to fill these gaps by assessing the effects of mentoring on positive change based on DFM classification by using a randomized control study with a wait-list control group.

Aims of the Current Study

The purpose of this study was to evaluate the effects of the AMPED program, a highly structured school-based mentoring program, on adolescent reported mental health outcomes (Time 1 to Time 2). In this study, 66 middle-school students were mentored by 59 undergraduate students from the University of Houston under the supervision and training of Dr. Sara Jones. Middle school students completed pre- and posttest measures to assess their overall mental health.

It was hypothesized that students participating in AMPED would show significant improvements in three areas: (a) life satisfaction, (b) positive and negative affect, and (c) symptoms of psychopathology compared to those not participating in the mentoring program. Moreover, data were analyzed such that students participating in the AMPED program were evaluated for significant improvements in their overall mental health comparing DFM classification between Time 1 to Time 2. Based on the DFM framework, it was hypothesized that participant group membership would positively change in the direction of better mental health as a result of participation in AMPED mentoring compared to the comparison group. This was operationalized such that students with mentors were expected to move to healthier/more positive groups within the DFM (e.g., Complete Mental Health or Symptomatic, but Content or maintain Complete Mental Health classification) whereas students without a mentor would not move to healthier or more positive groups within the DFM.

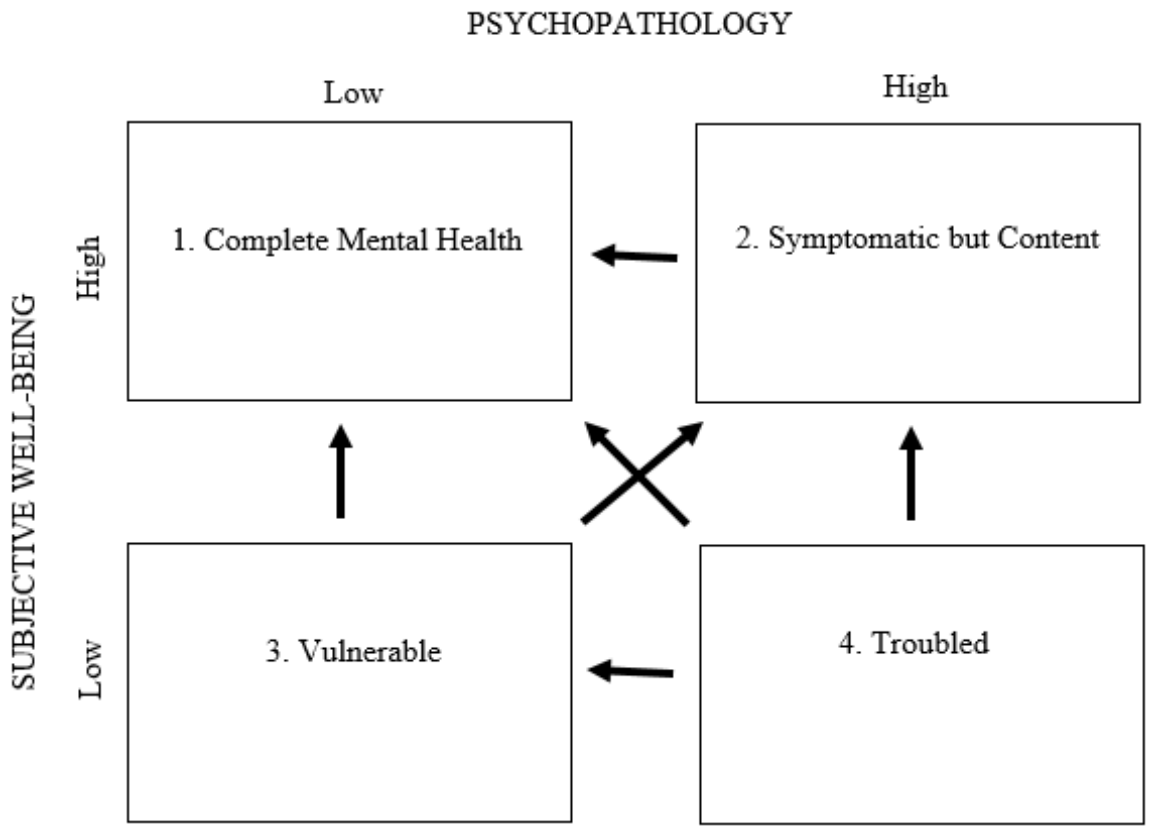
Research Questions. The current study addressed the following research questions:

1. Is there a difference between the intervention and the wait-list control group on students' life satisfaction, positive affect, negative affect, and psychopathology after participating in the mentoring program?
    a. It was hypothesized that participation in the AMPED program would significantly and positively impact life satisfaction, positive and negative affect, and reduce both internalizing and externalizing symptoms of psychopathology.
2. Is there a difference between the intervention and the wait-list control group on positive change as predicted by the DFM framework after participating in the AMPED mentoring program?

a. It was hypothesized that group classification would positively change for students participating in the AMPED treatment: compared to the wait-list control group (see Figure 2).

Figure 2. Hypothesized direction of positive change for DFM classification.

3.



CHAPTER III

Methods

Participants

One hundred and twelve participants (40 wait-list control group and 72 treatment group) were recruited from a middle school serving students from low-income families in a large urban school district. All students were English speaking. Participants included students who were in the 6th, 7th, or 8th grade during spring 2017 to spring 2018. In this sample, 39% of the students were female (n = 45) and 61 % were male (n = 67). Further, 53% were in 6th grade (n = 58), 37% were in 7th grade (n = 40), and 10% were in 8th grade. In addition, the majority of the sample identified as African American (88%, n = 88). About 10% identified as Latino and 2% identified as a bi-racial (African American and Latino). Every student in the sample qualified for free lunch, indicating low socio-economic status (SES).

Within the mentoring group, the majority of students were female (56%; N = 37). A chi-square test of independence was conducted to examine the relation between gender and treatment group (i.e., mentoring or control group). No significant differences were found. Demographic characteristics of the groups (i.e., mentoring or control) and total sample are reported in Table 2. Bivariate correlations were conducted to evaluate the associations by Time 1 and 2 for mentored students (Tables 3 and 5) and control group (Tables 4 and 6).

Table 2

Demographic Descriptive Statistics, by Treatment Group and Total

		Control	Mentored	Total
Gender				
	Male	24	37	61
	Female	10	29	39
Age				
	11	3	4	7
	12	12	22	34
	13	9	22	31
	14	2	7	9
	15	0	1	1
Grade				
	6	18	35	53
	7	12	25	37
	8	4	6	10
Ethnicity				
	Latino	2	8	10
	African American	31	57	88
	Mixed	1	1	2

Table 3

Correlations Pretest for Mentored Students

	Internalizing	Externalizing	Life Satisfaction	Positive Affect	Negative Affect
		Mentored (N = 66)			
Internalizing	1				
Externalizing	.72**	1			
Life Satisfaction	-0.12	-0.05	1		
Positive Affect	0	-0.01	0.53	1	
Negative Affect	0.34**	.31*	-0.01	.37**	1

Table 4

Correlations Pretest for Control Students

	Internalizing	Externalizing	Life Satisfaction	Positive Affect	Negative Affect
			Control (N = 34)		
Internalizing	1				
Externalizing	0.79**	1			
Life Satisfaction	0.23	0.19	1		
Positive Affect	-0.18	-0.27	-0.02	1	
Negative Affect	0.37	0.38	-0.18	.41*	1

Table 5

Correlations Posttest for Mentored Students

	Internalizing	Externalizing	Life Satisfaction	Positive Affect	Negative Affect
			Mentored (N = 66)		
Internalizing	1				
Externalizing	.74**	1			
Life Satisfaction	-0.08	0.31	1		
Positive Affect	0.11	0.55**	0.65**	1	
Negative Affect	0.58**	0.42*	0.41*	.64*	1

Table 6

Correlations Posttest for Control Students

	Internalizing	Externalizing	Life Satisfaction	Positive Affect	Negative Affect
			Control (N = 34)		
Internalizing	1				
Externalizing	.84**	1			
Life Satisfaction	-0.14	0.31	1		
Positive Affect	.67**	.55**	.65**	1	
Negative Affect	.58**	.42*	0.41*	0.64**	1

Setting

The City Middle School (pseudonym*)* is a public middle school in a large urban school district that serves a mostly at-risk population of students. Based on the Independent School District Campus Demographic Report (2017-2018), students at the school were primarily classified as economically disadvantaged based on their free or reduced-price lunch status (98%), and identified as minorities (81% African American and 17% Hispanic). Further, the neighborhood residents reported an annual income of $25,000 or less a year; 55% had a high school diploma. Research on neighborhood characteristics suggests that these adolescents are at high risk for negative social, psychological, and academic outcomes (City of Houston Planning and Development Department, 2017).

Measures

Three measures were used to establish a student's mental health classification within the DFM framework. Subjective well-being was measured with a composite created from the *Brief Multidimensional Students' Life Satisfaction Scale* (BMSLSS) and *Positive Affect and Negative Affect Scale (PANAS) for Children*. Symptoms of psychopathology were assessed by using Causey's *Self-Report Coping Scale*. These instruments have been used in several other studies investigating the DFM (Antaramian et al., 2010; Kelly et al., 2012; Lyons et al., 2013). Measures were administered before implementation of the intervention (Time 1) and after eight sessions had been completed (Time 2), generally 3-4 months after Time 1. The wait-list control group completed measures at the same times as the treatment group.

Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS). The BMLSS is a self-report measure that assesses overall life satisfaction of children and adolescents along five life domains: family, friends, self, school, and living environment (Huebner et al., 2006). A sixth item measures overall life satisfaction. The internal consistency reliability of the BMSLSS has been shown to be acceptable in many studies, with alphas ranging from .68 to .78 (Huebner & Hills, 2013;

Huebner, Seligson, Valois, & Suldo, 2005). In the current study, the internal consistencies were .90-.92.

Positive Affect and Negative Affect Scale for Children (PANAS-C). The PANAS-C measures the emotional component of well-being (Laurent et al., 1999). The scale consists of 27 items describing positive and negative feelings that respondents are asked to endorse on a 5-point Likert scale. Internal consistency is acceptable, with a Cronbach's alpha coefficient of .83-.85, and discriminant validity of -.14 (p<.01) (Ebesutanieta et al., 2012). Additional studies have shown a small negative correlation with positive affect and negative affect with the youth population which, along with numerous factor-analytic studies, supports the construct validity of this measure (Chorpita & Daleiden, 2002; Laurent et al., 1999). In the current study, the internal consistencies were .84-.88 for positive affect and .79-.88 for negative affect.

Causey's Self-Report Coping Scale (SRCS). The SRCS is used to assess psychopathology with internalizing and externalizing subscales (Causey & Dubow, 1992). Using a 5-point Likert scale, respondents are asked to endorse 34 items on five subtypes of coping: problem solving/self-reliance, seeking social support, distancing, internalizing, and externalizing. Internal consistencies for all subscales range from .64 to .84, and test-retest reliabilities range from .58 to .78 (Causey & Dubow, 1992). Additionally, the scale has shown adequate convergent validity (.85) (Causey & Dubow, 1992). The scale has been used in another DFM study, with internal consistencies ranging from 0.72 to 0.75 (Lyons, Huebner, & Hills, 2013). For the current study, the internalizing (7 items) and externalizing (4 items) subscales were used to determine psychopathology. In this study, the internal consistencies were .90-.95 for total scale, .75-.82 for internalizing, and .79-.84 for externalizing.

Procedures

Mentor recruitment and training. In the fall and spring of 2017-2018, undergraduate students from the University of Houston were recruited from the College of Education and the

Psychology Department to serve as AMPED mentors. A total of 59 undergraduate students were recruited and trained to deliver the intervention. Undergraduates who volunteered to be mentors did not receive any monetary compensation for their time. However, some participated to fulfill a service-learning component of a course or to receive extra course credit.

In this sample of mentors, 83% of the mentors were female (n = 49), and 17% were males (n = 10). Further, 51% (N = 30) were Human Development and Family Studies majors, 36% (N = 21) were Psychology majors, and 23% were majoring in other fields (e.g., biology, education, engineering, human resources, and liberal studies). Mentors were typically in their third to fourth year of college: first year (1.7%), second year (16.9%), third year (39%), fourth year (25%), and fifth year or beyond (16%). The mentors reported that they were primarily juniors (42%, N = 25) or seniors (41%, N = 24) at the university.

Each mentor completed an initial interview, background check, and required training before approved to mentor middle school students. The program director (Dr. Sara Jones), program coordinator (graduate student), and the program developer (Dr. Samuel McQuillin) created an initial online introduction training and two trainings sessions to train the undergraduate students on the AMPED program. The training consisted of didactic instruction, modeling, and opportunities for role-play. Trainees were observed in a role play as mentor with a practice mentee (another mentor) and observed by a supervisor. After the role play, immediate feedback was provided. Once the undergraduates had completed the training, they were asked to review the manual before every session. Mentors were also provided constant direct supervision from on-site supervisors if needed. On-site supervisors checked in with every mentor before and after the mentoring session occurred to assess whether they were prepared, knew the content and processes, and to review the session with the mentor.

Middle school student recruitment procedures. The Institutional Review Board (IRB) of the University of Houston approved the mentoring program in a local middle school and the corresponding research procedures and measures used for the study. The school social worker and AMPED personnel promoted the AMPED program for student recruitment. If students' guardian was interested, they were asked to complete a consent form. Consent from guardians and assent from students were obtained before the students were asked to complete baseline measures and prior to the first mentoring session. Students were given numeric identification numbers, and using a random number generator randomly assigned to the AMPED or waitlist control. Students in the wait-list control group were provided with a mentor and completed the AMPED program in the following semester. One hundred and twelve students initially consented to participate in the study; 100 students completed the study. Twelve students withdrew from the study due to change in schools (9 students) or no longer wanting (3 students) to participate in the research in both the mentoring (N = 5) and wait-list control group (N = 7).

Mentoring procedures. Throughout each semester (spring 2017, fall 2017, and spring 2018), mentors were to meet weekly with their assigned mentee on a one-on-one basis over an 8- to 12-week period for 45 to 60 minutes (detailed curriculum described in Table 1). The plan was to complete at least eight sessions during the semester. Mentors were paired with mentees approximately one month after school started in the fall (late September) or shortly after winter break (approximately mid-January).

In session one, the mentors worked on building rapport with their mentee and described the purpose of the mentoring program. In session two, the mentor guided the mentee through skills related to agenda keeping and organization. In session two, the mentor introduces the "Big 3" – organize, goal, and skill – which was a core theme in subsequent sessions. Mentees were taught to organize their school work, create a goal, and select a skill to help them. During the third session the mentees

selected a target goal to work on during subsequent mentoring sessions. In session four, the mentor guided the mentee to monitor his or her goal and revised the plan to achieve the goal or created a new goal. In the next few sessions (five through seven), the mentor reviewed the mentee's progress and taught the mentee a new skill each week. The mentee could choose from four categories of skills: academic (e.g., note-taking), emotional (e.g., how to cope with stress), behavioral (e.g., learning about antecedents, behaviors, and consequences), and social (e.g., tips for social media use). In session eight, the final session, the mentor reviewed the accomplishments achieved during the semester by the mentee, and then guided the mentee through a future-planning activity. After the eight sessions were completed, both the mentoring and the wait-list control groups completed posttest measures.

Mentoring fidelity. In fall 2017 and spring 2018, using Qualtrics (Qualtrics, Provo, UT), the survey software, the AMPED program staff collected mentor self-report fidelity data. The measure consisted of a series of questions designed to elicit general information and implementation integrity ratings. Specifically, the questions elicited information on the following: session number, module completed, fidelity adherence check (if everything was complete or not), if not complete, then an explanation provided, mentor perception of mentee engagement, mentor perception of quality of relationship, and if there were any concerns.

Forty-nine mentors completed the fidelity survey. The majority of the mentoring sessions were completed; however, occasionally (67.3%-69.4%) the last two mentoring sessions had to be combined or skipped due to timing of the semester or mentees being out from school. Overall, the mentees tended to choose to complete behavioral or emotional modules (77.5%), such as relaxation or coping with stress, over academic modules (expository reading or study skills). Mentors reported that they completed every component of the session 88.6% of the time. When the mentor was not able to complete all components, they stated that it was due to lack of engagement from the student, timing, or combining two sessions. Mentors reported that their sessions generally went well (45.5%) or very

well (44.9%), with their students being engaged 83.64% of the time. Finally, mentors perceived that their overall relationship quality with their students was good (49.1%) to very good (41.3%).

DFM classification. Based on the Time 1 and Time 2 self-reported subjective well-being and psychological symptoms, the students were categorized into one of the four dual-factor model groups (Greenspoon & Saklofske, 2001). Following procedures in Antaramian et al. (2010) and Suldo and Shaffer (2008), a composite score of subjective well-being was calculated by adding standardized life satisfaction and PA (positive affect) scores and subtracting standardized NA (negative affect) scores.

Using the 30th percentile as a cut point (Suldo & Shaffer, 2008), students were classified as having either higher or lower subjective well-being (SWB) based on where they scored in relation to the overall study's sample. Students who scored below the 30th percentile (score of -5 or less) were classified as having lower SWB and students who scored above the 30th percentile were classified as having higher SWB. Students who fell one standard deviation above the mean ($T > 60$) on internalizing or externalizing on Causey's coping scale were classified as "high psychopathology (those who fell below [$T < 60$] were classified as "low psychopathology"). Using Suldo and Shaffer's (2008) nomenclature, students were assigned into the following groups: Complete Mental Health (high SWB and low psychopathology), Troubled (low SWB and high psychopathology), Symptomatic, but Content (high SWB and high psychopathology), and Vulnerable (low SWB and low psychopathology).

Data Analysis

A total of 100 participants provided sufficient power to examine differences between the control ($N = 34$) and the treatment group ($N = 66$) for multiple-regression analysis and underpowered for the other analyses. Treatment and control group was dummy coded. Dummy-coded variables were used to test an intent to treat analysis using IBM's Statistical Package for the Social Sciences—Version 21.0 (SPSS; IBM Corp., 2012). The study's hypotheses were tested using a multiple-

regression model. Using a regression-analysis, well-being factors were the predicted outcome with the regression slope of mentoring and regression slopes of the covariates. The model addressed the proposed hypothesis using a *t*-test of the regression coefficient. Assumptions (normality, homoscedasticity, and linear relationship) were visually assessed by inspecting data plots, skew, and kurtosis and were met. Cohen's *d* was calculated for all regressions (Cohen, 1988). Cohen's *d* is used to determine the size of an effect: .3 (small), .5 (moderate), and .8 (large).

Additionally, chi-squared tests were conducted to determine if there were any differences across DFM groups, demographics (age, ethnicity, SES, and gender), and mentored and non-mentored students (Hypothesis 2) at Time 1. Using a post-hoc power analysis (GPower; Faul & Erdfelder, 1992), it was determined that a sample size of 100 with an alpha of $p < .05$ has a power size of .22 (small) or vastly underpowered. Logistic regression was used to test the effect of mentoring on DFM classification and assess for differences between the four DFM groups over time between the students who were mentored and students without mentors. A dichotomous variable (DFM Change) was created for each student to indicate change in the DFM classification between Time 1 and Time 2.

For the positive change group, students would either improve their mental health category status to Complete Mental Health or Symptomatic, but Content from Vulnerable or Troubled or Troubled to Vulnerable or maintain the Complete Mental Health classification (healthiest mental health group). (Positive change is described in Figure 2.) For the negative change group, students would either worsen the mental health category from Complete Mental Health to Vulnerable, Symptomatic, but Content, or Troubled category status or Symptomatic, but Content to Vulnerable or Troubled or maintain a Vulnerable or Troubled category status.

Five assumptions of a logistic regression were analyzed. Specifically, the assumptions tested were (a) dependent variable is dichotomous, (b) one or more independent variable is categorical, (c) observations are independent, (d) linear relationship between any continuous independent variable,

and (e) no outliers. The first assumption was met because the dependent variable is a dichotomous variable (positive or negative change). The second assumption was also met because the independent variable is a categorical variable, with each participant belonging to either the intervention group or the control group. Assumption 3, addressing independence of observations, was met because participants demonstrated either a positive or a negative change. Assumption 4 did not apply and was therefore met because there are no continuous independent variables in the analysis. Lastly, assumption 5 was met because there were no outliers in the data.

Exploratory analyses were conducted to evaluate change. A multinomial logistic regression was conducted to predict group membership. The approach shows more robust violations of assumptions compared to more traditional approaches (Lyons et al., 2012). It may also be considered an extension of binomial logistic regression since it allows for more than two categories for the dependent variable.

Seven assumptions of a multinomial regression were analyzed. Assumption 1 of dependent variable has more than 2 groups was met for two separate analyses. One analysis had post-DFM classification as an outcome. Another analysis split the change into three groups: Negative Change, Slight Positive Change, and Complete Mental Health Group. Negative Change was defined as maintaining Troubled or Vulnerable classification or changing to Troubled or Vulnerable. Slight Positive Change was defined as a change of group membership from Troubled or Vulnerable to the Symptomatic, but Content group or maintaining Complete Mental Health. Finally, Complete Mental Health Change group was defined as a change of group membership to the Complete Mental Health group from any of the three other groups. Assumption 2 was to have one or more independent variables that are continuous, ordinal, or nominal. This assumption was met with the control and treatment group as the independent variable. Assumption 3, addressing independence of observations, was met because participants were classified into the defined independent variable groups.

Assumption 4 did not apply and was therefore met because there are no continuous independent variables in the analysis. Assumption 6 was met because the analysis is only examining one independent variable (i.e., intervention) and is therefore not highly correlated with other independent variables in the model. Lastly, assumption 7 was met by detecting no outliers in the data. With the interpretation of odd ratio, ratios close to one show little to no effects and the greater the deviation indicates a larger effect size (Lyons et al., 2012).

CHAPTER IV

Results

Mentoring Effects on DFM Components

It was hypothesized that students with mentors would demonstrate significantly higher levels of improvement for life satisfaction (observed statistical power = .75), positive affect (observed statistical power = .97), overall subjective well-being (observed statistical power = .93), reduced negative affect (observed statistical power = .78), and internalizing (observed statistical power = .99) and externalizing symptoms (observed statistical power = .80) of psychopathology over time. This hypothesis was not supported based on six multiple regressions, with observed power ranging from 0.75 to .97 (see Table 7). Effect sizes using Cohen's *d* were as follows: satisfaction (*d* = .06), positive affect (*d* = .15), negative affect (*d* = -.09), overall subjective well-being (*d* = .12), and internalizing symptoms (*d* = -.22) externalizing symptoms (*d* = -.07).

Table 7

Multiple Regression of Mentoring Effects of DFM Components

	B	SE	β
Life Satisfaction	0.087	0.185	0.05
Positive Affect	-1.31	2.42	-0.05
Negative Affect	-0.11	3.34	-0.01
Internalizing Symptoms	-0.86	1.76	-0.05
Externalizing Symptoms	0.3	0.10	0.31

DFM Group Membership

At baseline, 62 students (62%) were classified in the largest group – Complete Mental Health group – with high levels of SWB and low levels of psychopathology. Seven students (7%) were classified in the Symptomatic, but Content group; 18 students (18%) were labeled Vulnerable, and 13 students (13%) belonged to the Trouble group (low SWB and low psychopathology levels).

Chi-square tests were conducted to determine if differences were present between groups. No significant differences were found for gender, ethnicity, SES, and grade. A chi-square test was also conducted to test for significant differences in DFM group composition between mentoring and control groups at baseline. (Descriptive statistics for Time 1 and 2 for DFM classification and demographics are provided in Tables 8 and 9.) Results revealed no statistically significant differences between mentoring and control group students at baseline, $\chi^2(3) = 7.57$, $p > .05$.

Table 8

DFM Group Demographics for Time 1

		Complete Mental Health	Symptomatic, But Content	Vulnerable	Troubled
Gender					
	Male	37	5	10	9
	Female	25	2	8	4
Age					
	11	5	0	1	1
	12	15	4	10	5
	13	21	2	3	5
	14	7	1	1	0
	15	1	0	0	0
Grade					
	6	29	4	11	9
	7	26	3	5	3
	8	7	0	2	1
Ethnicity					
	Latino	7	0	2	1
	African American	54	7	16	11
	Mixed	1	0	0	1
Treatment					
	Control	17	4	5	8
	Mentored	45	3	13	5
	Total	62	7	18	13

Table 9

DFM Group Demographics for Time 2

		Complete Mental Health	Symptomatic, But Content	Vulnerable	Troubled
Gender					
	Male	34	7	9	11
	Female	25	3	8	3
Age					
	11	6	0	0	1
	12	18	4	10	2
	13	18	4	5	4
	14	4	2	0	3
	15	1	0	0	1
Grade					
	6	32	5	10	6
	7	22	5	5	5
	8	5	0	2	3
Ethnicity					
	Latino	8	1	1	0
	African American	49	9	16	14
	Mixed	2	0	0	0
Treatment					
	Control	18	5	7	4
	Mentored	41	5	10	10
	Total	59	10	17	14

Student Membership in DFM Groups: Stability and Dynamics

To assess change of group membership, participants were reclassified according to DFM using Time 2 self-report data collected after completion of AMPED mentoring sessions. Table 10 presents the frequency of group membership at Time 1 and Time 2 for mentoring and control groups.

Table 10

DFM Group by Treatment Group

		Positive Mental Health	Symptomatic, But Content	Vulnerable	Troubled
Time 1					
	Control	13	2	7	3
	Mentored	39	7	8	7
Time 2					
	Control	12	4	4	5
	Mentored	37	4	12	8

Of the 66 mentored students, 36.4% (*N* = 24) changed groups at Time 2; 37.5% of them (*N* = 9) improved to a healthier group. These findings showed that few students with mentors changed groups; however, 72.7% of the mentored students (*N* = 48) maintained Complete Mental Health group status. Of the 34 control students, 55.9% (*N* = 19) changed categories at Time 2, with 57.9% (*N* = 11) changing to a healthier group (e.g., movement to Complete Mental Health group from Symptomatic, but Content group, Vulnerable group, or Troubled group; movement to Symptomatic, but Content group from Vulnerable group or Troubled group; or movement to Vulnerable group from Troubled group; see Figure 2). Four control group students (11.7%) maintained their Complete Mental Health classification. When students were categorized into the dichotomous variable (i.e., positive change or negative change), 70% of mentored students (*N* = 46) demonstrated a positive change while 67.7% of control students (*N* = 23) reported a positive change in mental health group classification (see Table 11).

Table 11

Descriptive Statistics for Dichotomous Change

		Positive Change	Negative Change
Gender			
	Male	41	20
	Female	28	11
Age			
	11	6	1
	12	22	12
	13	22	9
	14	6	3
	15	1	0
Grade			
	6	37	16
	7	27	10
	8	5	5
Ethnicity			
	Latino	9	1
	African American	58	30
	Mixed	2	0
Treatment			
	Control	23	11
	Mentored	46	20
	Total	69	31

Results showed that the majority of the students in both groups were placed in the positive change group; however, for both groups at Time 1, the majority were in the Complete Mental Health classification. Therefore, classifying the variables into a dichotomous outcome reduced the variance. To address this concern, the level of change was categorized into three groups: Negative Change, Slight Positive Change, and Change to Complete Mental Health. For the control group, half of the group (50%; $N = 17$) was placed in the Slight Positive Change Group, 10 students (29%) were in the Negative Change group, and 7 students (20%) were placed in the Change to Complete Mental Health Group. For the mentoring group, the majority (54.5%; $N = 36$) was categorized into the Slight Positive

Change Group, 33.3% of the students (N = 22) were in the Negative Change group, and 12.2% students (N = 8) were in the Change to Complete Mental Health (see Table 12).

Table 12

Descriptive Statistics for Levels of Change

		Negative Change	Slight Positive Change	Change to Complete Mental Health
Gender				
	Male	20	4	37
	Female	12	1	26
Age				
	11	1	0	6
	12	11	2	21
	13	9	3	19
	14	5	0	4
	15	0	0	2
Grade				
	6	15	3	35
	7	12	2	23
	8	5	0	5
Ethnicity				
	Latino	1	1	8
	African American	31	4	53
	Mixed	0	0	2
Treatment				
	Control	10	17	7
	Mentored	22	36	8
	Total	32	5	63

Influence of Mentoring on DFM Group Change

To assess the predictive qualities of the independent variable on group change, a binomial logistic regression model was used to determine if mentoring predicted positive change in DFM group membership. The mentored group and control group were used to predict the dichotomous outcome variable (i.e., positive or negative change). No significant models were found (see Table 13). The

odds ratio was close to 1, indicating a very small effect of mentoring predicting positive or negative change. Post-hoc power analysis indicated an observed power of 0.51. With the given parameters, it is estimated that a sample size of 199 would be needed for an observed power of .80.

Table 13

Binominal Regression for Positive Versus Negative Change

	B	SE	Odds ratio - exp(β)
Treatment Group	0.095	0.45	1.10

Since the control group (67%) and treatment group (70%) demonstrated similar group change using the dichotomous variables, exploratory analyses of multinomial regressions were conducted to examine whether group classification would positively change for students participating in the AMPED treatment. In these analyses, group change was investigated by three different options for change in mental health categorization to create more variability: Slight Positive Change (movement to the Symptomatic, but Content group from Troubled or Vulnerable, or movement to Vulnerable from Troubled); Negative Change (movement to Troubled group from Complete Mental Health, Symptomatic, but Content, or Vulnerable; movement to Vulnerable from Complete Mental Health or Symptomatic, but Content; or movement to Symptomatic, but Content from Complete Mental Health); and Change to Complete Mental Health (movement to Complete Mental Health from any group).

The first multinomial regression examined whether the effects of mentoring would lead to positive group change (i.e., Change to Complete Mental Health classification or Slight Positive Change group) compared to the control group. Two comparisons were made: (a) Change to Complete Mental Health versus Negative Change and (b) Change to Complete Mental Health versus Slight Positive Change. The comparison of Change to Complete Mental Health versus Slight Positive Change group suggested that having a mentor resulted in a statistically significant ($p < .05$) increase in the odds of belonging to the Slight Positive Change group (see Table 14) compared to the control

group. The odds ratio has a moderate deviation from 1, indicating a moderate effect size for this prediction. For the Change to Complete Mental Health classification, there was no significant difference between the treatment and control group. The odds ratio suggests a very small effect size since the odds ratio was close to 1 for the Negative Change. This deviation suggested a small effect for students in mentoring to be predicted in this group compared to the control group.

Table 14

Multinomial Regression for Positive Versus Negative Change

Comparison	B	SE	Odds ratio - exp(β)
Complete Mental Health versus Negative Change			
Treatment Group	0.2	0.5	1.22
Complete Mental Health versus Slight Positive Change			
Treatment Group	2.38*	1.16	10.77

A final multinominal regression examined whether or not group classification would positively change for students participating in the AMPED treatment. That is, if DFM group classification was predicted by students in the control group and students with mentors. This model did not produce significant results. The first comparison did not produce significant results (see Table 15). The results for the Troubled group suggested that mentored students were less likely to be in the Troubled group; however, the effect size was very small. When examining the Symptomatic, but Content and Vulnerable groups, the results also showed a small effect. Therefore, it was more likely for mentored student to be in these two groups (Symptomatic, but Content and Vulnerable groups) than the control group.

A secondary multinomial regression was conducted to predict the level of change based on treatment group (i.e., mentored group or control group) for the Negative Change, Slight Positive Change, and Change to Complete Mental Health groups. Two comparisons were made: (a) Change to Complete Mental Health versus Negative Change and (b) Change to Complete Mental Health versus Slight Positive Change. The odds ratio suggests a very small effect size since the odds ratio was close

to 1 for the Negative Change. This deviation showed a small effect for students in mentoring to be predicted in this group compared to the control group.

Table 15

Nominal Regression for Levels of Change

Comparison	B	SE	Odds ratio - exp(β)
Complete Mental Health versus Symptomatic, but Content			
Treatment Group	0.82	0.69	2.28
Complete Mental Health versus Vulnerable			
Treatment Group	0.48	0.57	1.59
Complete Mental Health versus Troubled			
Treatment Group	-0.09	0.35	0.91

Chapter V

Discussion

The following research questions were addressed in this study: (a) Is there a difference between the intervention and the wait-list control group on students' life satisfaction, positive affect, negative affect, and psychopathology after participating in the mentoring program? and (b) Is there a difference between the intervention and the wait-list control group on positive change as predicted by the DFM framework after participating in the AMPED mentoring program?

Results revealed that the effect of the mentoring intervention on promoting student well-being was minimal when compared to the control group. Results were for the most part nonsignificant, indicating no effect of the mentoring program on mental health using the DFM framework. Nevertheless, while nonsignificant, the results did produce a small effect on positive affect, overall subjective well-being, and internalizing symptoms. Small effect sizes were also found in previous studies of mentoring. The study was substantially underpowered and thereby likely the culprit in findings of small effects. Results should be interpreted in the context of a high probability of Type II errors.

It was hypothesized that students with mentors would demonstrate improvement in life satisfaction, positive affect, and overall subjective well-being, and reduce negative affect and internalizing and externalizing symptoms of psychopathology over time compared to the wait-list controls. This hypothesis was not supported. Analysis determined that the mentoring intervention did not predict subjective well-being, positive and negative affect, and internalizing and externalizing symptoms.

The Kraft (2018) guidelines suggest that effect sizes should be compared to similar research results. Other mentoring studies with promising findings report positive effect sizes ranging from .20 to .44 for life satisfaction, and close to average effect sizes (d = .14), based on meta-analyses (Dubois

et al., 2002; McQuillin & Lyons, 2016; McQuillin et al., 2015; Rhodes, 2008). Using the Kraft (2018) guidelines, the current study's small effect sizes are comparable to previous AMPED research for social-emotional outcomes, yet nonsignificant. With a larger sample size, the results may support mentoring as an intervention for improving mental health in youth.

To further examine the effects of mentoring and test the second hypothesis of positive group change for students participating in the AMPED treatment compared to control, students were classified into different mental health categories based on the DFM. When classifying the entire sample into the four DFM categories, the majority of the sample fell into the Complete Mental Health group at Time 1, which is supported by the existing literature by having the majority in Complete Mental Health and the other groups with smaller populations, approximately 15% (Antaramian et al., 2010; Suldo & Shaffer, 2008).

These findings related to group classification support the growing literature that suggests that four distinct groupings can be identified using the DFM framework. Specifically, two groups (Vulnerable and Symptomatic, but Content) that are identified in the DFM through assessment of well-being would not have been identified using the traditional model of mental health. This additional support could aid professionals to identify students with different levels of mental health needs. Thus, mental health professionals could prioritize mental health services using different tiers such as Tier 3 for the Troubled group, Tier 2 for the Vulnerable group, and Tier 1 for students in the Symptomatic, but Content and Complete Mental Health groups. To date, this approach has not been explored, so additional research is needed on the DFM framework classifications in order to better understand how mental health professionals could implement the DFM framework into MTSS.

To examine the second research question, groups were placed into one of two categories to examine change in DFM categories following the mentoring intervention. Specifically, a dichotomous variable was created to show positive (i.e., movement to a healthier mental health category or

maintaining Complete Mental Health group) or negative change (i.e., movement to a more severe mental health category or maintaining Vulnerable, Symptomatic, but Content, or Troubled group or maintaining Vulnerable or Troubled group) in DFM categories between Time 1 and Time 2. The hypothesis that students participating in the intervention would demonstrate a more positive change compared to the control group was not supported. That is, there were no significant findings from the dichotomous level of change analyses (i.e., positive change or negative change). A major contributor to the finding of nonsignificant results was the limited sample size. Analysis indicated that a sample size that is approximately double the current sample size would be needed to produce significant findings.

Additionally, when comparing the mentored students to the control group, more than half of both groups experienced positive change (i.e., 70% mentored group and 67% control group), indicating small variability for group change. A nonsignificant finding could be related to the unequal group size with minimal variability of students with mentors (N = 66) and students without mentors (N = 34). Of the 66 mentored students, 48 maintained their classification of Complete Mental Health, and only 9 changed their group status positively. In the control group, 11 students improved their mental health group status, and 12 maintained their Complete Mental Health classification. Therefore, in the mentored group 18 students were compared for change to 22 of the control group. Again, the sample size for comparison was too small. Further, while many students did maintain the Complete Mental Health classification, the purpose of the study was to examine positive classification movement for those students at risk or in need of support (i.e., students classified in the Symptomatic, but Content, Vulnerable, and Troubled groups). Therefore, the study did not obtain the ideal number of "at risk" population.

To further distinguish the impact of mentoring on DFM improvement, multinomial regressions were conducted. While no power analysis can be conducted for multinomial regressions currently, the

present study was vastly underpowered. In another study, the Complete Mental Health group had 626 participants, Vulnerable, 72, Symptomatic, but Content, 87, and Troubled, 197 (Lyons et al., 2012). In comparison, the current study had 49 participants in the Complete Mental Health group, 8 in the Vulnerable group, 16 in the Symptomatic, and 13 in the Troubled. This comparison provides further evidence of how underpowered the present study was for analysis. However, to address the hypotheses, analyses were still conducted.

A multinomial regression was conducted to examine different levels of change to gain more variability: (a) change to Complete Mental Health versus Negative Change and (b) change to Complete Mental Health versus Slight Positive Change. For mentored students, there was a statistically significant relationship with experiencing "Slight Positive Change" but not with the "Negative Change" when compared to the control group. This suggests that students with mentors may be more likely to experience small positive group movement than the control group. Yet, a larger sample size is needed to fully understand the extent of the effectiveness of the mentoring program. If the same results are found with a larger sample size, the mentoring program may be an appropriate prevention strategy for Tier 1 MTSS services or for students who are on a wait-list of services from mental health professionals. Thus, mental health professionals may be able to address the current limitations of mental health services by increasing the amount of time and providing higher quality of services to students with Tier 2 or Tier 3 level of mental health needs (Walcott et al., 2017; Weir, 2012). Again, these results were extremely underpowered. Yet, they warrant additional research with a larger sample size to fully understand their implications.

A final multinomial regression examined specific mental health classification change for the mentoring and control groups. It was hypothesized that students with mentors would be more likely to be in the Complete Mental Health or the Symptomatic, but Content group. No significant results were found. Odds ratio was used to show effect sizes, which were found to range from very small to small.

Currently, there are no power analyses procedures available to estimate the sample size needed to obtain sufficient statistical significance for multinomial regressions. However, examination of the groups shows that the majority of both the mentoring and the control group were in the Complete Mental Health group at baseline (62%). In the mentoring group, the analysis investigated 20 participants for positive change. In the control group, the analysis examined 12 participants for change. The small sample sizes of each group need to be considered to understand that it was unlikely to find significant change.

Compared to previous AMPED evaluations, the current study differed in terms of structural and personnel factors that may have also contributed to the non-significant findings, specifically with regard to the site and the program director (McQuillin & Lyons, 2016; McQuillin et al., 2015). To begin with, in the original studies, the primary researcher had a long-standing relationship and familiarity with the implementation schools, opening up the possibility of a researcher or site effect. Thus, the original studies of AMPED occurred at a charter school with a different population (e.g., higher SES and racial backgrounds) and a three-year relationship with the AMPED program prior to the randomized control trial, whereas the present study took place in the first year of implementation at a public school. The charter school volunteered to participate and assisted in actively recruiting participants for the AMPED program. Additionally, the AMPED program had generated a positive reputation and appeal to school personnel based on consistent improvement of the AMPED participants in academic, emotional, and behavioral outcomes. For the most part, students at the charter school considered participation in AMPED a social status of sorts. Based on the students' improvements, the charter school staff qualitatively may have been more likely to buy into and support the ongoing efforts of the AMPED program, which, in turn, may have affected implementation fidelity. With the intervention being more acceptable, rapport could have been

established with more ease and thus resulted in more openness to the guidance from mentors to the students.

By comparison, the present study, there was difficulty recruiting participants and promoting the acceptability of the program. The AMPED program had been piloted with a very small group of students in the school the year before, and the AMPED program staff was still developing a relationship with the school during the time of implementation of the study. As AMPED program staff continued to develop this relationship, there may not have been a comparable acceptance of the intervention or buy-in from the public school staff to the previous AMPED studies. Another difference pertains to the program director. The AMPED evaluations at the charter school were conducted and overseen by the program developer, Dr. Samuel McQuillin, whereas the current study was overseen by Dr. Sara Jones. Dr. Jones assessed fidelity of the intervention, but such checks were not carried out previously, so the studies cannot be compared. Additionally, Dr. McQuillin did not participate in the transition to a public school setting, and he had not yet developed a revision to the procedures manual for implementing the AMPED program at a new site, especially a public school. Therefore, there may have been a developer effect between the initial studies and the present study, which may have significantly affected program acceptance in this study. The impact of program differences may be an indication of poor generalizability and likely contributed, in part, to the nonsignificant findings. Clearly, these program differences need to be addressed with additional manualized procedures that consider site characteristics and examined further in future studies.

In addition to program-level changes, the nonsignificant findings may be due to the fidelity of the implementation of the mentoring intervention. Examination of the fidelity data suggested that mentors sometimes had to combine sessions and did not always complete all components of the intervention (completing 88.6% of all components) due to lack of engagement from the mentee, the length of the session, or mentee absences. Not implementing the intervention fully may have

impacted its effectiveness. Additionally, when examining the specific features of the modules (skills) implemented during the intervention, mentored students selected more behavioral and emotional modules than academic modules. Behavioral/emotional modules included coping skills such as how to cope with stress or understanding antecedents, behavior, and consequences, and how to modify behaviors, whereas the academic modules included skills such learning how to outline while reading and study tips. It is unknown what modules were selected or at what frequency in previous AMPED studies. Additionally, while mentors may have taught the skills, the mentees may not have been able to master them sufficiently to use them independently within the eight-week time frame. Research suggests that mentors can teach mentees skills effectively, but the literature has focused mostly on academic skills (Karcher, Kuperminc, Portwood, Sipe, & Taylor, 2006; Sipe, 2006), so it is unclear whether indeed mentors are able to teach other skills beyond academic skills, and, consequently, more work is needed in this area. It is critical for future studies to understand how the intervention was implemented and check fidelity. With this information, the program directors and supervisors may be able to provide training and support to implement the intervention with fidelity.

The fact that the current study yielded numerous nonsignificant results and hypotheses were not supported may be explained by the small sample size. However, exploratory analysis examining group change from three levels did provide minimal evidence to support a slight positive change in mental health for students with mentors. With a larger sample size, more statistically significant findings may demonstrate that mentoring can be used in schools as a used as a cost-effective prevention program. Further, the study supported previous research that students can be distinguished into four classifications of mental health based on the DFM framework. However, it is still unclear how or if these classifications may assist in pairing students with tiered/appropriate intervention services based on their classification. For example, does the Vulnerable or the Symptomatic, but Content group need Tier 1 or Tier 2 services? Who will examine the students' mental health

classification and decide the appropriate level of mental health services? The logistics of using the DFM framework in schools is still unknown. Further research is warranted in order to explore the feasibility of the DFM framework within a school setting for intervention services and the effectiveness of mentoring as an acceptable intervention to promote mental health.

Implications

The current study supports the notion that students can be distinguished into four unique mental health classifications (Antaramian et al., 2010; Suldo & Shaffer, 2008). While the findings do not suggest high levels of mental health change, there is evidence of some positive change for students with mentors compared with the control group. Indeed, the study showed that mentoring may lead to a small change in mental health, but a much larger sample size is needed to fully understand the impact of the mentoring intervention. The AMPED mentoring program may be a promising means of prevention for students with low level mental health needs (i.e., Vulnerable or Symptomatic, but Content). Yet, multiple factors need to be addressed and explored to understand the feasibility of using this mentoring intervention alongside the DFM framework.

The results of the current study provided very limited support, mainly nonsignificant, for the feasibility and effectiveness of intervention services based on the DFM framework. To date, this study is the first to examine a school-based mentoring program as an intervention to promote mental health using DFM framework. It is possible that researchers are still unaware of the underlying critical features of DFM framework to target for intervention. While there is some evidence to support the claim that improving well-being is related to a number of positive outcomes, the current study did not find evidence of the hypothesis that a mentoring program promotes youth well-being and leads to improvement in mental health (Gilman et al., 2014; Haranin et al., 2007; Suldo & Huebner, 2004). Therefore, it is important to examine the scientifically informed theory of the DFM framework to develop intervention components to improve well-being and thus improve mental health. The AMPED

program was initially developed to target academic success. Although it has led to other positive outcomes (e.g., increased school connectedness, reduced problem behaviors, and improved life satisfaction), program modifications may be needed to improve mental health via subjective well-being. Overall, while the findings of this study should be evaluated with caution due to several limitations, further research is warranted to investigate the DFM framework and corresponding interventions to promote mental health.

Limitations

Several limitations should be considered when interpreting the findings of this study. First, the sample size was small ($N = 100$), which impacted the ability to detect a statistically significant effect using the threshold of $p < .05$. It was suggested for the logistical regression that a sample size of 199 would be needed to detect significance. In addition to the small sample size, the participants were classified into smaller unequal groups to examine positive change with the sample of 38 students in the more severe mental health groups and 62 in the optimal mental health group (i.e., Complete Mental Health). These unequal group sizes further hindered the ability to detect statistical significance. Additionally, the sample was small due to limited resources to recruit students (ratio of consents sent out to consents returned). Furthermore, the researchers of the intervention could only recruit students from the 6th and 7th grade during fall 2017 to spring 2018 because the 8th-grade population was involved in an alternative intervention. Finally, the generalizability of the sample is subject to limitations. Beyond the small sample size, the students were recruited from one school with a fairly homogenous population, all of which may impact generalizability.

Another limitation relates to the measures used to assess the DFM categories. Although the measures have been used across multiple studies, the measures in the DFM framework are not yet normed due to the continual development of the DFM field. Specifically, the well-being measures (i.e., PANAS-C and BMSLSS), per typical practice, are assessed using the current study's population

and 30th percentile as cut points to differentiate between high and low classifications (Antaramian et al., 2010; Suldo & Shaffer, 2008). By not using normed measures, the current study creates its own cut-offs based on its population, which could lead to a false positive (e.g., student incorrectly classified as low level of well-being). There are no current standardized or normed measures for well-being, so students are only compared to other students in the present study. Additionally, the measures used in this study were self-report, which may lead to a social desirability bias, and the supervisors reported that the students often asked about the meaning of the words on the PANAS-C, which may suggest that the students lacked emotional word knowledge, which could have impacted their responses. An additional limitation related to measurement is the timing of data collection. Specifically, the measures were collected at the end of a school semester with a break following in the next few weeks. Therefore, it is possible that students were responding positively to the self-report measures because they were anticipating a break from school, regardless of intervention.

A third limitation is the reported data by the mentors (self-report) for their fidelity checks. Digital fidelity checks were not implemented until fall 2017. Previously, mentors were asked to complete a checklist of the session procedures, and supervisors monitored and provided feedback. Mentors often had to combine at least two sessions into one meeting time, which reduced the overall dosage of the intervention. The AMPED program is an eight-session intervention, but the data show that students with mentors may only have received seven sessions of intervention. Additionally, mentors reported that they did not complete all components of the session. It is possible that failure to receive the full eight intervention sessions with all the components impacted the overall positive effects of the intervention, consequentially influencing self-report measures of mental health at Time 2.

A fourth limitation involves the time when the intervention was implemented. The area where the school district was located experienced a historical flood during part of this study. This event

might have unknown effects on students' mental health. That is, not only did students' school schedule change, including several missed weeks of school, but there may have been negative changes at home, such as loss of home, items, displacement, and other negative outcomes. Their parents could have also lost work, which could have impacted overall family stress at home. Thus, these circumstances may have canceled out many of the positive mental health outcomes associated with mentoring. However, many students in the control group may have experienced flooding as well. Given that the researchers/authors did not gather data on this factor, the effects that the flood had on students are unknown but should be noted as a limitation given the significance this event.

A final limitation is the familiarity with and stability of the DFM framework. The framework is relatively new, and this is the first known study to examine the effectiveness of an intervention to promote mental health using the DFM framework. As a result, other researchers may not fully understand the underlying levers to guide specific methods to improve mental health using the DFM framework. While the DFM researchers suggest that the addition of subjective well-being is a more malleable target for intervention to promote mental, this notion has not yet found support in the literature, especially among child and adolescent populations. A clear explanation of the theory could assist researchers in developing intervention practices that can be replicated and tested.

Conclusions

This study investigated the effects of the AMPED mentoring program in promoting mental health using the DFM framework. Consistent with previous research, students were classified into the four categories of the DFM framework, which provides unique insight into mental health by assessing both well-being and psychopathology as separate constructs (Antaramian et al., 2012; Suldo & Shaffer, 2008). By incorporating well-being into the mental health definition, the DFM framework identifies two additional groups (i.e., Symptomatic, but Content and Vulnerable) to the traditional

mental health model. Further research is needed to evaluate if these additional categories provide a unique method for identification for intervention.

More research is needed on the AMPED program to further understand if it can be generate positive outcomes with diverse school populations. Future research may include qualitative data on the feasibility, acceptability, usability, and understanding of the AMPED curriculum by mentors, or interviews from students about their experience in the AMPED program. Further, it could provide further understanding about how schools buy into and support the program. Such data may help the expansion of this program. Further, it may reduce the potential for developer effect and support other program directors in implementing the program.

The hypotheses stating that mentored students would have higher levels of subjective well-being and lower levels of psychopathology were not supported. Nevertheless, exploratory analysis revealed small positive mental health changes, giving rise to further exploration of the effectiveness of mentoring as a means of promoting mental health using the DFM framework. Additional research is needed with larger sample size to determine if this promising finding is supported.

Further, the current intervention may need to be examined to adequately address the promotion of well-being and reduction of psychopathology. Potentially different aspects of the intervention should be investigated to specifically target students with lower well-being or psychopathology prior to the implementation of the intervention. A future study should consider using a larger sample size using multiple locations to assess these hypotheses. It would also be beneficial to investigate covariates that may impact positive change or group classification change during the implementation of intervention. Overall, additional research is needed to identify interventions to promote mental health using the DFM framework with large and diverse populations and the feasibility of the DFM framework.

In conclusion, findings of the current study suggested very limited support for a mentoring intervention to promote mental health and thus needs to be replicated with a much larger sample size to understand the implications of the mentoring intervention on mental health, including the use of the DFM framework in schools. Assessing both subjective well-being and psychopathology, rather than psychopathology alone, is a unique and important way to identify and classify students with mental health concerns. The current study is the first known study to investigate school-based mentoring as an intervention to promote well-being of children and adolescents. While more research is needed to establish effective interventions that promote adolescent mental health using a DFM framework, this study provides a novel way to provide mental health prevention services using mentoring.

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Appendix A

UNIVERSITY OF HOUSTON
PARENTAL PERMISSION

PRINCIPAL INVESTIGATOR CONTACT INFORMATION:

Sara J. Jones, Ph.D.
Department of Psychological Health and Learning Sciences
College of Education
University of Houston
Houston, TX
713-743-9137
sjjones3@uh.edu

PROJECT TITLE:

Your child is being invited to take part in a research project titled "Academic Mentoring Program for Education and Development Evaluation" conducted by Dr. Sara Jones from the Department of Psychological, Health, and Learning Sciences at the University of Houston**.**

NON-PARTICIPATION STATEMENT

Your child's participation in this study is completely voluntary and refusal to participate will not result in any penalty or impact your child's participation any school activities. If you decide to allow your child to participate in the study today, but later change your mind, you are free to withdraw your child from the study with no penalty to you or your child. Also, your child must voluntarily agree to participate in the study and sign an assent form that will be read to them. So, you might agree to have your child participate, but your child may refuse. If you child refuses to participate in mentoring you will be notified, but there will be no penalty.

PURPOSE OF THE STUDY

The University of Houston (UH) is conducting a study on a University of Houston Academic Mentoring Program (UH-AMPED). The UH-AMPED is a program in which students are assigned a UH student who will serve as their mentor for the semester. Mentors will meet with students weekly for 8-10 weeks to teach academic skills such as agenda keeping and binder organization, monitor progress towards reaching student goals, and troubleshoot difficulties that arise for meeting goals. This program is designed to motivate students to engage or continue to engage in academically responsible behavior. In the current study, we will evaluate how well the UH-AMPED works with students who are identified at-risk. We are asking you, a parent or guardian of a student, to voluntarily agree to allow your child to participate in the study. If you agree to your child's participation, your child will have a 50% chance to receive a mentor. If your child does not receive a mentor, he or she will participate in school normally.

PROCEDURES

If you are willing to allow your child to participate in the study, you will need to read the following form, print your child's name, and sign this document.

If you agree to allow your child to participate in this study, your child will be randomly assigned to receive a mentor or not. "Random assignment" means that your child has an equal chance of receiving a mentor (being in the "mentoring group") and of not receiving a mentor and continuing to participate

in school as usual (being in a "control group"). If your child is randomly assigned to receive a mentor, your child will meet 8-10 times for 1 hour over the course of a school semester with a mentor who will teach academic enabling skills such as agenda keeping and binder organization, monitor progress of reaching goals, and trouble shoot difficulties that arise for meeting goals. If your child does not receive a mentor, he or she will continue participating in school as usual. All students have an equal chance of being selected to receive a mentor. Students, parents, teachers, or researchers cannot pick whether or not the child receives a University of Houston mentor. Group assignment will be done by chance alone.

Students assigned to the mentoring program will be assigned an undergraduate student from the University of Houston who will serve as their mentor. They will meet with their mentor once a week for approximately 1 hour, with each meeting having a guided agenda. There will be approximately 8-10 sessions of mentoring. The mentor will help students become organized, select and work toward goals, troubleshoot obstacles that arise, and assist them with homework or study skills. All of the mentoring activities will be on school grounds, either during school day or during sanctioned after-school activities. School staff or a University of Houston supervisor will be in the same room as your child's mentor during every meeting. The mentoring will take place during times of the day that will not interfere with core curriculum. For example, your child may come after they finish lunch, or during a non-academic elective that the school and student agree is a good time.

If you consent to this study, your school will provide Dr. Jones with your student's grades, absences, demerits, and information from a behavioral and emotional screening that the school uses. All data provided to Dr. Jones will **not** include your students name or any other identifying information. Instead the information will be completely anonymous, and only the school will retain information from these records.

CONFIDENTIALITY

The school staff will collect all of the data. Before data is entered into a computer it will be de-identified. De-identified means that your child's name will not be on any of the data collected. Instead of your child's name, a random number will be used. The school will have a key that can match students to their number, but no one else will have this key. The de-identified data will be kept in a password protected hard drive in Dr. Sara Jones's office at the University of Houston.

RISKS/DISCOMFORTS

Participating in the mentoring program should involve no risks beyond what is normally encountered in typical school day or after-school program. Although we promise confidentiality with the data used, and all researchers involved in this project have been trained on confidentiality procedures, there is always a slight risk that someone might violate study procedures and release confidential information. Under such circumstances you will be notified and the staff member that violated confidentiality will be immediately removed from the project and given no further access to data.

BENEFITS

Mentoring has been associated with a variety of benefits to school children, including better connections with school, attendance, and academic success. There is no guarantee that mentoring will help your child, but it is likely to be helpful. The UH-AMPED is a new program, but is designed to help your child be successful in school. There is no guarantee that this program will help your child, but it is likely to help your child make plans to do well in school.

ALTERNATIVES
Participation in this project is voluntary and the only alternative to this project is non-participation.

PUBLICATION STATEMENT
The results of this study may be published in scientific journals, professional publications, or educational presentations; however, no individual subject will be identified.

SUBJECT RIGHTS
I understand that parental consent is required of all persons under the age of 18 participating in this project. I understand that my child (student) will also be asked to agree to participate.

All procedures have been explained to me and I have been provided an opportunity to ask any questions I might have regarding my child's (student's) participation.

Any risks and/or discomforts have been explained to me.
Any benefits have been explained to me.

I understand that, if I have any questions, I may contact Dr. Sara Jones by phone at 713-743-9137 or by email at sjjones3@uh.edu

I have been told that my child or I may refuse to participate or to stop his/her participation in this project at any time before or during the project. My child may also refuse to answer any question.

ANY QUESTIONS REGARDING MY CHILD'S RIGHTS AS A RESEARCH SUBJECT MAY BE ADDRESSED TO THE UNIVERSITY OF HOUSTON COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS (713-743-9204).

All information that is obtained in connection with this project and that can be identified with my child (student) will remain confidential as far as possible within legal limits. Information gained from this study that can be identified with my child (student) may be released to no one other than the principal investigator. The results may be published in scientific journals, professional publications, or educational presentations without identifying my child (student) by name.

SIGNATURES

I have read (or have had read to me) the contents of this consent form and have been encouraged to ask questions. I have received answers to my questions to my satisfaction. I give my consent to participate in this study, and have been provided with a copy of this form for my records and in case I have questions as the research progresses.

NAME OF CHILD (STUDENT): _____

I agree to allow my child (student) to participate in this research project:

YES_____ NO_____

Signature of Parent/Guardian:_____

Appendix B

UNIVERSITY OF HOUSTON
ASSENT TO PARTICIPATE IN RESEARCH

PRINCIPAL INVESTIGATOR CONTACT INFORMATION:

Sara J. Jones, Ph.D.
Department of Psychological Health and Learning Sciences
College of Education
University of Houston
Houston, TX
713-743-9137
sjjones3@uh.edu

Project Title: Academic Mentoring Program for Education and Development Evaluation

About the Study

You are being asked to participate in a study where you might receive a mentor for 1 school semester. This mentor may meet with you once per week for 8-10 weeks.

Participation in the Study

If you participate in this study, you may receive a mentor. You will be randomly assigned to receive a mentor or not. "Random assignment" means that you have an equal chance of receiving a mentor (being in the "mentoring group") and of not receiving a mentor and continuing to participate in school as usual (being in a "control group"). If you are randomly assigned to receive a mentor, you will meet 8-10 times for 1 hour over the course of a school semester with a mentor who will teach academic skills such as agenda keeping and binder organization, help you reach school goals, and trouble shoot difficulties that arise for meeting goals. If you do not receive a mentor, you will continue participating in school as usual. All students have an equal chance of being selected to receive a mentor. Students, parents, teachers, or researchers cannot pick whether or not you receive a University of Houston mentor. Group assignment will be done by chance alone.

If you do this study, you may receive a mentor that will talk to you about school and help organize your agenda and book bag and help you problem solve issues in school.

If you do this study, you will be asked to complete two series of questionnaires that will take approximately 30 minutes each. You will be asked to complete these questionnaires whether or not you receive a mentor. You are free to decline to complete the questionnaires, and you will not get into trouble or be penalized for declining.

Voluntary Participation

You do not have to do this study. You also do not have to have a mentor. If you do not want to answer the questions, simply tell the researcher that you do not want to do the survey. If you agree to do the study, but later change your mind, you are free to stop doing the study. If you receive a mentor, and then do not want to have a mentor anymore, tell the program coordinator (i.e. Dr. Jones), or school staff. There will be no penalties or punishments if you decide not to do the study.

Benefits
The mentor may help you become more organized and do better in school.

Confidentiality
Participation is confidential. Only the research staff will see your survey answers. Study information will be kept in a secure location at the school. The results of the study may be published or presented at professional meetings, but your identity will not be revealed.

Risk of Participation

Doing this study involves no risks beyond what normally happens at school or in an after-school program. Although we promise to keep your survey answers private, there is always a slight risk that someone might tell someone else about what you talked about with your mentor. If this happens, that person will not be able to work on the study any longer.

Consent
I understand that my parents have raised no objections to me doing this study.

I also understand that I do not have to do this study if I do not want to.

By signing below, I am showing that a researcher has read this form to me and answered all of my questions about the study. By signing, I am saying that I understand that my participation in this study is voluntary and that all of my information will be kept confidential. By signing my name below I agree to participate in this research project.

SIGNATURES

If you want to participate in this study, check "Yes" and sign below. If you do not want to participate, then do not sign.

I agree to participate in this research project:

YES_____
Signature of Student:_____

Appendix C

Academic Mentoring Program for Education and Development

BECOME A MENTOR!

- Undergraduate and graduate students are eligible to mentor.
- Commit to mentor middle school students for 8 weeks, 1.5 hours per week.
- Must pass background check.
- Must have transportation (or carpool arrangements) to school.
- Mandatory online trainings and in-person training sessions.
- Must be available Mon, Tue, Wed, Thu, or Fri during typical school hours. (one day per week)

Work with UH Faculty and acquire letters of recommendation!

Gain experience working with middle school students!

Opportunity to assist in educational research and make a difference!

UNIVERSITY of HOUSTON
COLLEGE OF EDUCATION

For more information or to sign-up visit:

uhamped.com

(click "Become a Mentor" then "Apply Now(UH)")

Appendix D

Causey's Coping Scale

♦ ♦ ♦Here is a list of ways that kids your age often respond to problems they may have. When you have an argument or fight with a friend……

Circle **1** if you **NEVER** deal with the problem this way.
Circle **2** if you **ALMOST NEVER** deal with the problem this way.
Circle **3** if **SOMETIMES** you deal with the problem this way.
Circle **4** if you **ALMOST ALWAYS** deal with the problem this way.
Circle **5** if you **ALWAYS** deal with the problem this way.

	Never	**Almost Never**	**Sometimes**	**Almost Always**	**Always**
1. Tell a friend or family member what happened.	**1**	**2**	**3**	**4**	**5**
2. Try to think of different ways to solve it.	**1**	**2**	**3**	**4**	**5**
3. Make believe nothing happened.	**1**	**2**	**3**	**4**	**5**
4. Take it out on others because I feel sad or angry.	**1**	**2**	**3**	**4**	**5**
5. Talk to somebody about how it made me feel.	**1**	**2**	**3**	**4**	**5**
6. Change something so things will work out.	**1**	**2**	**3**	**4**	**5**
7. Go off by myself.	**1**	**2**	**3**	**4**	**5**
8. Become so upset that I can't talk to anyone.	**1**	**2**	**3**	**4**	**5**
9. Get help from a friend.	**1**	**2**	**3**	**4**	**5**
10. Decide on one way to deal with the problem and I do it.	**1**	**2**	**3**	**4**	**5**
11. Forget the whole thing.	**1**	**2**	**3**	**4**	**5**
12. Worry too much about it.	**1**	**2**	**3**	**4**	**5**
13. Ask a friend for advice.	**1**	**2**	**3**	**4**	**5**
14. Do something to make up for it.	**1**	**2**	**3**	**4**	**5**
15. Tell myself it doesn't matter.	**1**	**2**	**3**	**4**	**5**
16. Cry about it.	**1**	**2**	**3**	**4**	**5**
17. Ask a family member for advice.	**1**	**2**	**3**	**4**	**5**
18. Know there are things I can do to make it better.	**1**	**2**	**3**	**4**	**5**
19. Just feel sorry for myself.	**1**	**2**	**3**	**4**	**5**
20. Refuse to think about it.	**1**	**2**	**3**	**4**	**5**
21. Yell to let off steam.	**1**	**2**	**3**	**4**	**5**
22. Ask someone who has had this problem before what he or she would do.	**1**	**2**	**3**	**4**	**5**

23. Go over in my mind what to do or say.	**1**	**2**	**3**	**4**	**5**
24. Do something to take my mind off of it.	**1**	**2**	**3**	**4**	**5**
25. Worry that others will think badly of me.	**1**	**2**	**3**	**4**	**5**
26. Curse out loud.	**1**	**2**	**3**	**4**	**5**
27. Try to understand why this happened to me.	**1**	**2**	**3**	**4**	**5**
28. Say I don't care.	**1**	**2**	**3**	**4**	**5**
29. Ignore it when people say something about it.	**1**	**2**	**3**	**4**	**5**
30. Get mad and throw or hit something.	**1**	**2**	**3**	**4**	**5**
31. Get help from a family member.	**1**	**2**	**3**	**4**	**5**
32. Get mad at myself for doing something that I shouldn't have done.	**1**	**2**	**3**	**4**	**5**
33. Try extra hard to keep this from happening again.	**1**	**2**	**3**	**4**	**5**
34. Talk to the teacher about it.	**1**	**2**	**3**	**4**	**5**

Appendix E

Your Satisfaction with Life

Please place an 'X' in the <u>one</u> box that best indicates how satisfied or dissatisfied you <u>CURRENTLY</u> are with each item below. There is no right or wrong answer.

	HOW SATISFIED OR DISSATISFIED ARE YOU WITH...	Very Dissatisfied	Somewhat Dissatisfied	Neither Satisfied Nor Dissatisfied	Somewhat Satisfied	Very Satisfied
1.	Your family life	☐	☐	☐	☐	☐
2.	Your friendships	☐	☐	☐	☐	☐
3.	Your school experience	☐	☐	☐	☐	☐
4.	Yourself	☐	☐	☐	☐	☐
5.	Where you live	☐	☐	☐	☐	☐
6.	Your life overall	☐	☐	☐	☐	☐

Appendix F

Feelings and Emotions (PANAS-C)

This scale consists of a number of words that describe different feelings and emotions.

Read each item and then circle the appropriate answer next to that word.

Indicate how much you have felt this way during the past few weeks.

	Not much or not at all	A little	Some	Quite a bit	A lot
Interested	1	2	3	4	5
Sad	1	2	3	4	5
Frightened	1	2	3	4	5
Alert	1	2	3	4	5
Excited	1	2	3	4	5
Ashamed	1	2	3	4	5
Upset	1	2	3	4	5
Happy	1	2	3	4	5
Strong	1	2	3	4	5
Nervous	1	2	3	4	5
Guilty	1	2	3	4	5
Energetic	1	2	3	4	5
Scared	1	2	3	4	5
Calm	1	2	3	4	5
Miserable	1	2	3	4	5
Jittery	1	2	3	4	5
Cheerful	1	2	3	4	5
Active	1	2	3	4	5
Proud	1	2	3	4	5
Afraid	1	2	3	4	5
Joyful	1	2	3	4	5
Lonely	1	2	3	4	5
Mad	1	2	3	4	5
Fearless	1	2	3	4	5
Disgusted	1	2	3	4	5
Delighted	1	2	3	4	5
Blue	1	2	3	4	5
Daring	1	2	3	4	5
Gloomy	1	2	3	4	5
Lively	1	2	3	4	5