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Using a Dual-Factor Model to Understand the Mental Health of Students with School Refusal Behavior

Zachary D. Maupin
Chapman University, zamaupin@chapman.edu

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A Dissertation by

Zachary D. Maupin

Chapman University

Orange, CA

Donna Ford Attallah College of Educational Studies

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Committee in charge:

Amy-Jane Griffiths, Ph.D., Co-Chair

Kelly Kennedy, Ph.D., Co-Chair

Michael Salce, Ed.D.

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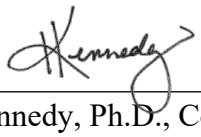
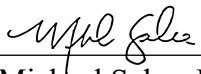
The Dissertation of Zachary D. Maupin is approved.

Amy-Jane Griffiths, Ph.D., Co-Chair



Kelly Kennedy, Ph.D., Co-Chair



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ABSTRACT

Using a Dual-Factor Model to Understand the Mental Health of Students with School Refusal Behavior

by Zachary D. Maupin

Students with school refusal behavior (SRB) often present complex cases that include variations of internalizing (anxiety and depression) and externalizing (opposition and defiance) mental health struggles. Historically, incongruent classification methods and terminology have hindered the progress of effectively or consistently assessing SRB. Consequently, practitioners face several obstacles in the process of identifying and understanding these students. Despite guidance from past literature, several questions about how SRB interacts with students' mental health are left unanswered. The present study used data from over 100,000 student responses on the California Healthy Kids Survey-Secondary Core Module. A review of attendance questions from this survey resulted in similar prevalence outcomes as other large surveys. Through additional analysis, select demographic variables (grade, gender, race/ethnicity, socioeconomic status) presented a significant relationship with attendance. These findings were supported by previous research with similar results. Further, Cross-sectional data from the Social-Emotional Health Survey-Secondary and Social-Emotional Distress Scale-Secondary was used to assess students' mental health. Together, these measures reflect a dual-factor approach to mental health that considers both subjective well-being and psychopathology. Responses to these mental health screeners were compared in groups of students based on the amount of school they reported missing or skipping. Findings indicated that students' subjective well-being and psychological distress significantly changed as they missed or skipped school more frequently. Substantially lower reports of subjective well-being and greater reports of psychological distress were found as

students reported more frequent attendance problems. However, as students began skipping or cutting school once a month or more often in the past 12 months (twice a month, once a week, and more than once a week), there was no longer a statistically significant difference in their mental health. Student responses appeared to plateau as their SRB became more chronic or frequent. These critical findings provided a better understanding of this unique behavior and advanced evidence-based assessment practices for earlier identification of SRB. Considering subjective well-being, in addition to measuring psychopathology, was a crucial component to understanding changes in mental health for students with SRB. These findings have extensive implications for practice and future research.

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LIST OF ABBREVIATIONS

Abbreviations	Meaning
AIR	Average Item Response
ANOVA	Analysis of Variance
APA	American Psychiatric Association
BERS	Behavioral Emotional Rating Scale
BESS	Behavioral Emotional Screening System
BMSLSS	Brief Multidimensional Student Life Satisfaction Scale
CFA	Confirmatory Factor Analysis
CHKS-SCM	California Healthy Kids Survey-Secondary Core Module
CSCRS	Child Self-Control Rating Scale
DF	Degrees of Freedom
DSM	Diagnostic and Statistical Manual of Mental Disorders
DV	Dependent Variable
EFA	Exploratory Factor Analysis
ERIC	Education Resources Information Center
GAC	Gratitude Adjective Checklist
GAD	Generalized Anxiety Disorder
ICD	International Classification of Disease
IDEA	Individuals with Disabilities Education Act
IV	Independent Variable
K-W	Kruskal-Wallis

Abbreviations	Meaning
LCAP	Local Control Accountability Plan
LEA	Local Education Agencies
LGBT	Lesbian, Gay, Bisexual, Transgender
NASP	national association of school psychologists
PANAS-C	Positive and Negative Affect Scale for Children
PEASS	Experiences at School Scale
PHQ	Patient Health Questionnaire
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
RYDM	Resilience Youth Development Module
SAP	school attendance problems
SEDS-S	Social-Emotional Distress Scale-Secondary
SEHS-S	Social-Emotional Health Survey-Secondary
SES	Socioeconomic Status
SLSS	Student Life Satisfaction Scale
SRAS-R	School Refusal Assessment Scale-Revised
SRB	School Refusal Behavior
TUPE	Tobacco Use Prevention and Education
WHO	World Health Organization
YLOT	Youth Life Orientation Test
YRBBS	Youth Risk Behavior Surveillance Survey

LIST OF SYMBOLS

Symbols	Meaning
α	Alpha Level
φ	Phi Effect Size
Δ (*delta*)	Glass' Effect Size
χ^2	Chi-Squared
F	Ratio of Mean Variance
H	Kruskal-Wallis (K-W) H Test
N/n	Population/Sample
r	Correlation
V	Kramer's Effect Size

Chapter 1: Introduction

Public school systems have become an essential component of our society and early childhood development. Compulsory education laws in California require children from 6-18 years of age to attend school (California Department of Education, 2020). Students who regularly do not attend school potentially face several adverse outcomes and a variety of concerns related to learning and academic achievement (Carroll, 2010; Gottfried, 2014), at-risk behaviors (drug use [Chou et al., 2006; Henry & Huizinga, 2007], teen-pregnancy [Almeida et al., 2006], school drop-out [Christle et al., 2007]), employment and higher education opportunities (Attwood & Croll, 2006), social-emotional development (Garland, 2001; Hersov, 1990; Malcom et al., 2003), and mental health conditions (Heyne & Sauter, 2013; Kearney & Albano, 2004). These difficulties, when left unaddressed, can result in significant problems that persist across a lifetime. Unfortunately, students who refuse to attend school are often unidentified for up to 1-2 years before receiving support (Kearney, 2001).

A variety of complications often accompany cases in which school attendance is a problem. Simultaneous influences may be present in mental health, medical, familial, and contextual factors that can impact attendance. Unfortunately, practitioners may overlook these underlying factors if social maladjustment or other maladaptive behaviors occur (Egger et al., 2003). This dilemma often prevents students with attendance problems from being formally identified or diagnosed with a mental health condition (Kearney, 2007). As a result, students are often unidentified, misunderstood, and face several other barriers to gaining support. This study seeks to understand the mental health changes in students with school attendance problems.

Background Information and Context

Concerns about attendance typically present most prominently during significant age or grade transitions (e.g., 5 to 6-, 11 to 13-, and 14 to 15-year-olds) (Kearney et al., 2004; Tolin et al., 2009). As students grow older, attendance problems often increase, and the reasons students refuse school also change. Due to varying criteria and definitions, the prevalence of school attendance problems has included a broad range of 5-28% of the student population (Kearney, 2001, 2008; King & Bernstein, 2001). Attendance problems become notably problematic when a child misses (a) 25% of the total school time in a given two-week period, (b) they demonstrate significant difficulties attending classes for at least two weeks with significant interference to the family or school routines, or (c) they are absent for at least ten days across a fifteen-week period; generally, missing at least 25% of the school day is considered an absence (Kearney & Albano, 2018).

Terms and Definitions

Scholarly discourse has resulted in several attempts to (re)define this phenomenon, including school attendance problems (SAP) (Heyne et al., 2019), extended school non-attendance (Pellegrini, 2007), school refusal behavior (Kearney & Silverman, 1990 & 1993), and truancy (Gentle-Genitty et al., 2015; Keppens & Spruyt, 2017). A general comprehension and understanding of semantics are vital when exploring this topic; however, thorough discussions are reviewed elsewhere (Heyne et al., 2019; Kearney, 2007; Kearney & Silverman, 1996). Heyne and colleagues (2019) provide a helpful table and timeline of definitions with references in their recent review (p. 9). Unfortunately, interchangeable and incongruent use of terms has resulted in ambiguity, inconsistency, and other substantial obstacles to assessment, identification, treatment, and working knowledge of this topic (Heyne et al., 2019; Kearney, 2003).

The present study utilized the term school refusal behavior (SRB) as it currently appears most commonly used and well understood throughout the research and practice of assessing attendance problems. A substantial body of research relies on the definition and classification of SRB, amounting to over 30 years of literature. Heyne and company (2019), while proposing a separate classification model and critiques of the term SRB, have recognized the consistency of Kearney and his colleague's definition in literature. Additionally, "SRB" aligns with the National Association of School Psychologists (Wimmer, 2010). NASP recognized "SRB" as a more inclusive term that absorbs students often neglected in the scope of other terms (i.e., truancy and school withdrawal) (Inglés, 2015).

Assessment and Identification

Students who refuse to attend school present with complex, heterogeneous symptoms that often evade traditional, categorical diagnostic systems (Atkinson et al., 1985; Kearney & Albano, 2018). While a student with SRB may have mental health struggles (e.g., anxiety, depression, or opposition), their symptoms are often masked, overlooked, or dismissed (Egger et al., 2003; Haight et al., 2011). As a result, these children often do not meet formal criteria or receive a diagnosis, or they are given several (up to five) diagnoses in an attempt to recognize the extent of comorbid mental health struggles (Kearney & Albano, 2004; Kearney et al., 2005). These complexities have remained detrimental to the identification, classification, and treatment of students with SRB (Elliot, 1999; Elliot & Place, 2019; Kearney, 2008; King & Bernstein, 2001; Lauchlan, 2003).

Incongruent terms used in research and practice have also prevented accurate prevalence information from being established (Kearney, 2008; Last & Francis, 1988). Despite a plethora of terms offered, a unitary nosology does not exist in the American Psychiatric Association's (APA)

Diagnostic and Statistical Manual of Mental Disorders (DSM-5) or the World Health Organization's (WHO) International Classification of Disease (ICD-10) (APA, 2013; Inglés et al., 2015; WHO, 2004). Further, criteria for special education eligibility in the Individuals with Disabilities Education Act (IDEA) (34 CFR. § 300.34[a]) face similar challenges in its categorical eligibility procedures. A majority of special education disability categories having been unchanged for the past 50 years and present vague descriptions (Triano, 2000) that are unlikely to capture the complex nature of SRB. Literature on SRB significantly lacks guidance studies using school-based data sources or consideration of special education disabilities. As a result, there is confusion on how special education can optimally identify and support this population.

Problem Statement

In collaboration with the Civil Rights Data Collection (2015-16), the United States Department of Education cited chronic absenteeism as a *hidden educational crisis.* Based on students missing school in California because they felt unsafe, Baam and colleagues (2017) estimated funding losses of $276 million annually. Literature on the topic of assessing, identifying, and understanding SRB has been at a stand-still for the past 20 years. Following their initial article in 1999, Elliot and Place (2019) provided a follow-up literature review on these topics declaring that few advances had been offered to guide practitioners since the turn of the 21st century. As discussed previously, Heyne and colleagues (2019) reviewed chronic incongruencies in the terms and subsequent identification systems used for attendance problems.

Inconsistencies and shortcomings from previous research coupled with heterogeneous mental health symptoms consistent in SRB cases pose a significant problem in research and practice. A further gap is emphasized by the lack of consideration for emerging models of mental

health- mainly the dual-factor model. This model of mental health considers both subjective well-being and psychopathology to encourage a holistic perspective of mental health. How these combined elements to the dual-factor model present in students with SRB remains a mystery.

Purpose of the Present Study

Despite a large body of literature on techniques for assessing SRB, there is a clear need for more empirical studies on how school attendance and mental health interact. With recent developments to our comprehension of mental health, assessment procedures should consider additional factors beyond traditional clinical symptoms or deficits (i.e., anxiety, depression, and opposition). In addition to these common psychopathological symptoms (i.e., negative indicators of mental health), the dual-factor model of mental health proposes subjective well-being (i.e., positive indicators of mental health) as critical components to an individual's mental health (Suldo & Shaffer, 2008). Conceptualizing SRB within a dual-factor lens may reduce the heterogenous roadblocks to successful understanding of students with SRB. As a result, more effective identification and treatment can be developed on account of the whole child.

This study used existing data from a popular school climate measure (California Healthy Kids Survey [CHKS]) as well as measures of subjective well-being (Social-Emotional Health Survey-Secondary [SEHS-S]) and psychological distress (Social-Emotional Distress Scale-Secondary [SEDS-S]). The focus of this study was to analyze groups based on levels of students' attendance to determine what differences exist in their mental health. Select questions from the CHKS were used to create groups based on levels of school absenteeism. Descriptive statistics and initial analysis determined the differences in these groups across grade levels, gender, race/ethnicity, and socioeconomic status. According to the dual-factor model, the SEHS-S and SEDS-S were used to capture a holistic measure of mental health. Scores from these measures

compared students with varying levels of absenteeism to establish differences in mental health. A copy of select attendance questions from the CHKS, the SEHS-S, and the SEDS-S, are included as Appendices A, B, and C, respectively.

By establishing and analyzing what mental health differences exist across students with different levels of absenteeism, educators can build a more comprehensive understanding of how school attendance and mental health interact. In turn, this supports the development of comprehensive assessment and targeted interventions for students with SRB when considering factors of mental health. Schools, specifically, are urged to use data that is often readily available (i.e., CHKS) to understand and better support students with SRB. Future researchers are encouraged to promote the use of tiered school-based systems and screening procedures to more readily identify and support students with SRB.

Theoretical Frameworks

Several underlying themes, definitions, models, and tools were relied on for the present study to research the topic of SRB. A brief explanation provided below establishes a basis of knowledge for the reader to understand relevant issues.

Dual-factor Model of Mental Health

Traditional mental health assessments identify various internalizing (e.g., depression, anxiety) and externalizing (e.g., oppositional or antisocial behavior) symptoms to determine deficits. Essentially, clinicians rely on categorical systems of diagnoses that look for the presence or absence of an illness. The dual-factor model of mental health seeks to expand this approach. This perspective proposed that positive life factors (e.g., life satisfaction, self-acceptance, and social contribution [Diener, 2000]) be considered in addition to psychopathologies (Suldo & Shaffer, 2008). This conceptualization of complete mental health intends to bolster positive

assets in addition to identified weaknesses. Both subjective well-being and psychopathology are discernable from one another and necessary to conduct comprehensive evaluations (Greenspoon & Saklofske, 2001).

The additional spectrum of subjective well-being intersects the spectrum for psychopathologies, creating four discernable quadrants or groups (Suldo & Shaffer, 2008). Individuals demonstrating high levels of psychopathology with low levels of subjective well-being (troubled) are considered most at-risk compared to those with high psychopathology and high subjective well-being (symptomatic but content) or even those with low psychopathology and low subjective well-being (vulnerable). Low psychopathology indicators with reports of high subjective well-being indicate optimal mental health (complete mental health). This model is important for the early identification of mental health struggles. Although there may not be psychopathological concerns, students with low subjective well-being are often unidentified and unlikely to receive support despite their risk of developing mental health struggles (Suldo & Shafer, 2008).

Extant Data Source and Data Agreement

The present study used an extensive data set gathered by scholars from the University of California Santa Barbara (Furlong et al., 2020). With support from an Institute of Education Sciences grant initiated in 2017 (Grant #R305A160157), data collected across the 2017-18 and 2018-19 school years included over 100,000 students in California. This data includes student responses from the California Healthy Kids Survey and concurrent data from the Social-Emotional Health Survey-Secondary (SEHS-S) and Social-Emotional Distress Scale-Secondary (SEDS-S). Each of these measures holds strong validity and reliability and has been designed intentionally for their collective use in measuring complete mental health in the context of

schools (Furlong et al., 2020; Dowdy et al., 2018). Additional information can be found on the University of California Santa Barbara's Project CoVitality website (Project CoVitality University California Santa Barbara, 2020).

California Healthy Kids Survey (CHKS)

The California Healthy Kids Survey (CHKS) is a core component of the California School Climate, Health, and Learning Survey (CAL-SCHLS) System; two additional features include school staff and parent surveys. The California Department of Education (CDE), supported by WestEd, Duerr Evaluation Resources, and expert committees, developed the CHKS in response to the federal Safe and Supportive Schools (S3) initiative to enhance positive school climates (WestEd, 2011). The CHKS is now among the oldest and largest statewide surveys of resilience, protective factors, and at-risk behaviors in the nation (Austin et al., 2011).

The CHKS supports priorities aligned with the California Department of Education, the federal government, and Local Control Accountability Plan (LCAP) items for Local Education Agencies (LEAs) intended to foster pupil engagement, parent involvement, academic achievement, Common Core implementation, and basic core services (school facilities) (Zheng et al., 2017). Surveys are specifically available for grades 5, 7, 9, and 11, although other elementary grade levels may appropriately complete the core module. The purpose of this study will focus on the CHKS-Secondary Core Module (CHKS-SCM) items related to attendance, Questions 19 and 21. A copy of Questions 19 and 21 are included as Appendix A.

Social-Emotional Health Survey-Secondary

The full CHKS core module is required for schools that choose to administer; however, several optional modules explore additional areas of interest. The Social-Emotional Health Survey (SEHS) was developed by researchers at the University of California Santa Barbara to

measure students' social-emotional strengths based on the Covitality model. This approach is rooted in positive psychology and focuses on strengths related to social-emotional development and well-being (Furlong et al., 2020). Numerous studies have validated this model and the development of 12 sub-scales across the following four secondary measures, belief-in-self (self-awareness, persistence, self-efficacy), belief-in-others (school support, family coherence, peer support), emotional competence (empathy, self-control, behavioral self-control), and engaged living (gratitude, zest, and optimism) (Furlong et al., 2013; Furlong, Dowdy et al., 2014; Furlong, You et al., 2014; You et al., 2014). Together, these constructs result in an individual's Covitality score; this overall measure is greater than the sum of its parts and represents the collective assets that comprise an individual's positive traits (Furlong et al., 2020).

Over time, modifications and expansions have refined the SEHS-S based on factor analysis research (Furlong et al., 2020). The most significant change involved aligning all responses to a four-point scale ("not at all true," "a little true," "pretty much true," and "very much true"); this response format is identical to the scale from the SEDS-S. Questions on the SEHS-S rely on positive indicators for well-being with relatable and appropriate language for adolescent children instead of using pathological (negative) indicators commonly used to describe mental health.

The SEHS-S includes 36 questions to account for the four secondary composites of Covitality and each of their three underlying assets. A standardized scoring process for the SEHS-S follows a rubric outlining the four secondary traits and their three underlying factors. Student responses (1-4) are averaged (divided by three), and each of the subdomains is combined and averaged (divided by nine) to form the composite for each secondary domain. Each secondary domain is added together and averaged (divided by four) to obtain the overall

Covitality score. Final scores plotted on an Average Item Response (AIR) Profile form indicate average ranges based on 119,756 California students in grades 7-12. A copy of the SEHS-S and a scoring template are included as Appendix B (Furlong et al., 2020).

Social-Emotional Distress Scale, Secondary (SEDS-S)

The SEDS-S was designed to be administered along with the SEHS-S to encourage a dual-factor approach when measuring positive and negative indicators of mental health and wellness (Dowdy et al., 2018; Furlong et al., 2020). As a broad measure of emotional distress, its use within a school's context can guide further formal or standardized assessment tools. By responding to ten questions about internalizing symptoms in the past month, the SEDS-S measures students' sadness, fear, anxiety, or emotional distress to provide a unitary measure of overall emotional distress and pathology (Dowdy et al., 2018).

Student responses are based on a four-point scale ("not at all true," "a little true," "pretty much true," and "very much true"). Results, averaged (divided by 10) for a total score, have an established average item response score of 2.0 with standard deviations of 1.0 (16-84% range). Outcomes from the SEDS-S are positively correlated with distress and significantly negatively correlated with positive indicators. A validation study established appropriate internal consistencies (Cronbach's alpha coefficient of .91) when normed across two separate but similar high schools (Dowdy et al., 2018). Additionally, the unitary outcome score for social-emotional distress was supported through confirmatory factor analyses finding an adequate model fit for a single-factor structural model. A copy of the SEDS-S and a scoring template are included as Appendix C (Furlong et al., 2020).

Summary

Going to school has become an important developmental component for overall success in our society (Henry & Huizinga, 2007). Students who struggle to attend school face debilitating mental health struggles as well. These struggles often present as heterogeneous, which can become complex and confusing. Subsequently, classification and identification procedures and informed treatment approaches are significantly lacking. The present study confronted this problem to understand the mental health changes in students at risk for SRB. Subjective well-being and psychological distress were both considered in students with varying degrees of SRB to support earlier identification, better assessment practices, and future guidance for more targeted interventions.

Research Questions

The following research questions guided the analysis of this study and were based on existing literature to address shortcomings concerning our understanding of mental health in students with SRB.

Research Question 1: *How do school attendance items from the current dataset compare to prevalence outcomes using other large datasets?*

Research Question 2a-2d: *Are student self-reports of attendance consistent across demographic items (i.e., [a] grade level, [b] gender and sexual orientation, [c] race/ethnicity, and [d] socioeconomic status)?*

Research Question 3a: *Are there differences in self-reported subjective well-being measures (i.e., Social-Emotional Health Survey-Secondary [SEHS-S]) across students based on the amount of school they reported missing in the past 30 days (i.e., Question 19)?*

Research Question 3b: *Are there differences in self-reported subjective well-being measures (i.e., SEHS-S) across students based on the amount of school they reported skipping or cutting in the past 12 months (i.e., Question 21)?*

Research Question 4a: *Are there differences in self-reported psychological distress measures (i.e., Social-Emotional Distress Scale-Secondary [SEDS-S]) across students based on the amount of school they reported missing in the past 30 days (i.e., Question 19)?*

Research Question 4b: *Are there differences in self-reported psychological distress measures (i.e., SEDS-S) across students based on the amount of school they reported skipping or cutting in the past 12 months (i.e., Question 21)?*

Research Question 5: *Using groups (a) Complete Mental Health, (b) Symptomatic but Content, (c) Vulnerable, and (d) Troubled from a dual-factor model approach, what percentage of students from each group presented with potential SRB?*

Chapter 2: Literature Review

Several factors can influence school refusal behavior (SRB), including medical factors, mental health and behavioral struggles, and social, familial, and interpersonal dynamics. A critical element to keep in mind is the heterogeneity of SRB- which makes any assumptions about a student's behavior patterns a slight guessing game. Further confusion emerges when secondary features mask a student's primary symptoms or struggles. For example, students may demonstrate oppositional behaviors while struggling with an underlying depression (Bools et al., 1990; Egger et al., 2003). Students with unique medical conditions may refuse school to avoid peer conflict or bullying (Lee et al., 2018). Regardless of why children resist attending school, the results are often dire to their development, learning, families, and society as a whole. Despite research on this topic growing for the past century, this literature remains confusing and inconsistent, urging clarification to understand students with SRB.

Defining SRB

A history of inconsistent and competing terms and definitions used interchangeably has complicated the topic of attendance problems. This paper will continue to rely on SRB as a more inclusive and flexible term used most frequently in practice and research. It is important to note that multiple factors or behaviors may simultaneously influence a child's absence from school (Kearney, 2002a). Family, community, school, and other contextual aspects of a student's life also significantly influence SRB (Lyon & Cotler, 2007).

The definition of SRB includes children, 5-17 years old, who refuse to attend school or struggle to remain in class for an entire day (Kearney, 2008). Absenteeism becomes notably problematic when a student (a) misses 25% of total school time in a given two-week period, (b) demonstrates significant difficulties attending classes for at least two weeks that interfere with

routines, or (c) is absent for at least ten days during a fifteen-week period; generally speaking, missing 25% of the school day is considered an absence (Kearney & Albano, 2018). However, these cutoff points may be arbitrary to a certain degree, and researchers have suggested a lower threshold to promote early identification and prevention (Lyon & Cotler, 2007). It is reasonable that enough time must surpass for a pattern of absence to be effectively detected. Recommendations have suggested missing 10% of school over three months as sufficient to identify cases before SRB becomes less manageable (Lyon & Cotler, 2007).

Several methods for categorizing absences have included excusable (due to medical illness or injury) or inexcusable (due to environmental, social, or psychiatric factors) absenteeism. Other variations of attendance patterns present in cases of SRB (chronic, acute, periodic, excessive, inconsistent) occur along a spectrum of severity (tardiness, missing a class period, entire days of absence, attending school despite discomfort) (Kearney, 2008). These features often increase the complexity of SRB cases and, subsequently, student concerns may not adhere to traditional diagnostic classification systems. Parent-motivated school withdrawal, for example, can involve parents keeping their child at home for several potential reasons (e.g., safety, child support, economic needs) (Kearney & Silverman, 1996; Kearney, Lemos, & Silverman, 2004).

The term SRB has gained distinction for avoiding diagnostic pitfalls and confusion that other classification attempts have faced by emphasizing underlying behavioral functions (Kearney, 2007; Phelp et al., 1992). It is intended to assume previous terms, including truancy, and embrace a universal understanding of this phenomenon that eludes traditional taxonomies and diagnostic systems (Kearney & Silverman, 1996). The term SRB is not unanimously upheld throughout the literature- primarily due to others refuting the inclusion of truancy-based school

refusal (Elliot & Place, 2019; Pellegrini, 2007). However, 30+ years of substantial research supports "SRB" as inclusive and aligned with the National Association of School Psychology (Inglés et al., 2015; Wimmer, 2010). Consensus over terminology is vital for establishing consistency in research and practice and remains a barrier for both (Lyon & Cotler, 2007).

Previous Literature Reviews

Several reviews of the literature on assessing SRB provide information identifying and appropriately treating this unique population (Elliot, 1999; Elliot & Place, 2019; Heyne et al., 2019; Inglés et al., 2015; Kearney, 2008; King & Bernstein, 2001; Lyon & Cotler, 2007). These works consistently recognized the value and importance of effective screening and multimodal assessment methods to detect underlying or primary concerns (medical, physical, or psychiatric conditions) and behavioral functions (Elliot, 1999; Elliot & Place, 2019; Kearney, 2008). Complex heterogeneous features were also recognized as a consistent phenomenon across each of these reviews of SRB.

These reviews provide foundational knowledge and insights; however, they remain unsatisfying in their scope of exploring the assessment of SRB. Their primary focus dwells on the history of incongruent terms and definitions, and recommendations are often limited to anxiety-based screening tools (Elliot, 1999; Elliot & Place, 2019; Heyne et al., 2019; King & Bernstein, 2001). The present study includes a systematic review of literature from the past 45 years to discover critical findings on assessing SRB. This information provided context for understanding mental health in students with SRB.

Methods

The objective of conducting this systematic review was to gain a better understanding of the assessment of SRB. A Boolean search included the terms "assessment" AND "school refusal"

in four databases including, Education Resources Information Center (ERIC), APA PsycINFO, APA PsycArticles, and MEDLINE. Adding or substituting terms such as "school phobia," "problematic absenteeism," and even "school refusal behavior" only served to decrease the resulting number of articles. In contrast, a term as general as "attendance" added an excessive amount (9,582). The initial search yielded 311 results ranging from 1974 to 2019. It is important to note that the term *school refusal behavior* assumed and replaced prior definitions (e.g., school phobia) relatively at this time. The author screened titles and abstracts for each of these articles to remove duplicates and narrow results based on the inclusion criteria presented below. The remaining 119 articles were stored in a Zotero folder to review full article content focusing on methods, results, and discussion sections. Further exclusion criteria specified the use of original or extant data in empirical studies assessing SRB. The author analyzed 40 remaining articles.

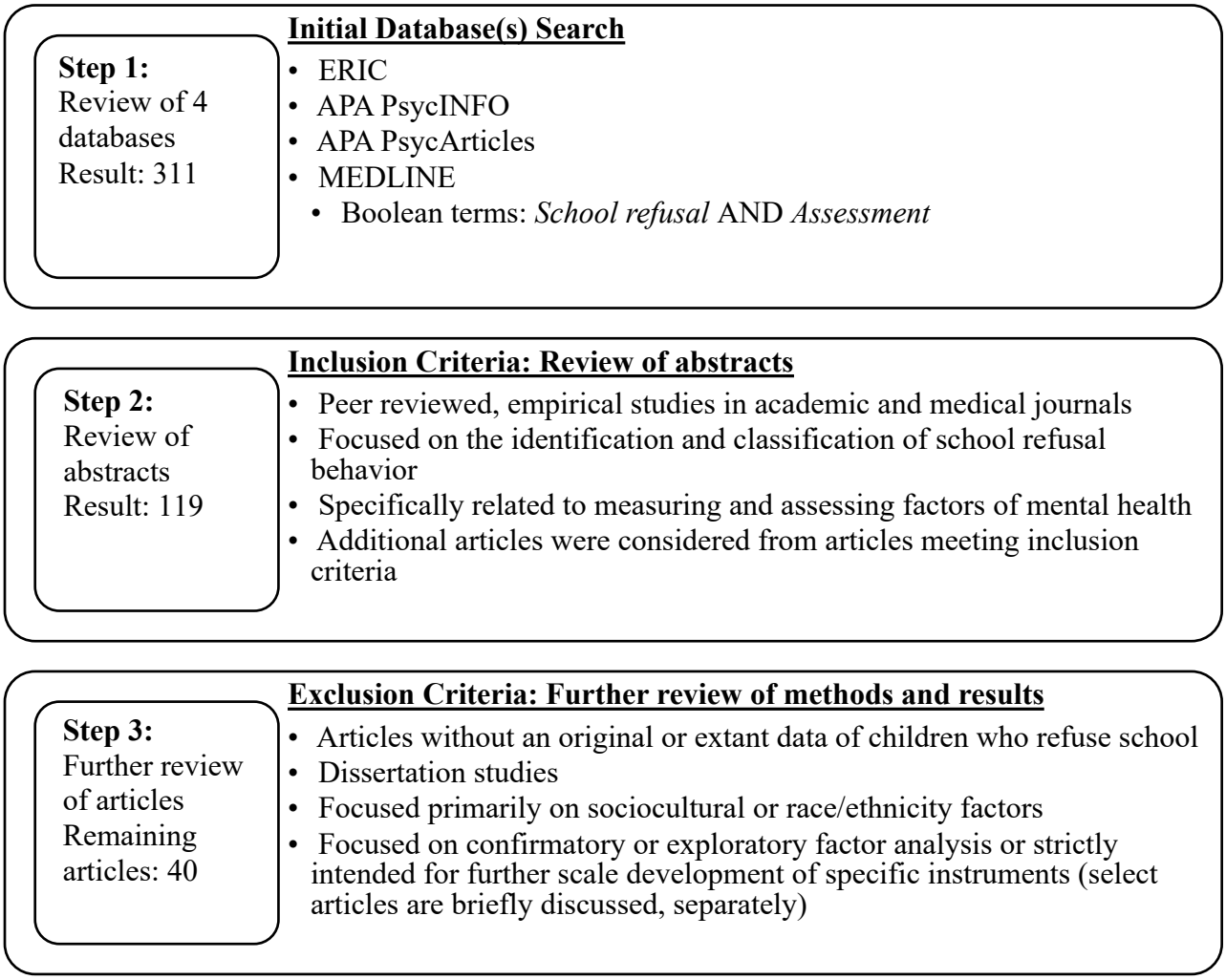
Inclusion & Exclusion Criteria

An extensive amount of literature was considered to understand what previous research findings suggest for assessing SRB. Recommendations from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol were employed throughout the literature search and analysis (Moher et al., 2009). Articles were selected for further examination from peer-reviewed academic or medical journals with content focusing on the assessment, identification, and classification of SRB. Parameters for selection included articles that mentioned measurement or assessment related to medical, psychiatric, or mental health factors (e.g., depression, anxiety, attachment, and externalizing or internalizing behavior). Articles that were not empirical by design or did not utilize an original or existing dataset were excluded. A dissertation co-chair provided support with further analyzing article content to ensure a central focus on assessing SRB.

Articles intended solely for furthering the design and construction of the School Refusal Assessment Scale (across culture, language, and other populations) were excluded to maintain a focus on the overall assessment of SRB. This tool and the research surrounding it include an additional >81 articles that warrant a separate and more thorough review. While international sources or studies were maintained, further criteria excluded articles that strictly focused on components of race/ethnicity, culture, or language and its interaction with SRB. Additionally, nine dissertation studies were omitted. Secondary and external reviewers provided further confirmation of article content. From the initial articles selected for consideration, 40 final articles satisfied all inclusion and exclusion guidelines warranting further review for this study. This process was outlined below in Figure 1.

Figure 1

Systematic Review Process



Study Participants

Across these studies, researchers consistently took into consideration age, gender, race/ethnicity, socioeconomic factors; students ages 5-9 years old were less represented. This growing body of literature spans from studies conducted in the United States, India, Japan, Germany, England, Netherlands, Spain, and other countries, contributing to a better understanding of SRB. However, the settings these studies took place in lacked diversity and primarily took place in clinical settings. Seventy-two percent of the 40 articles selected included

out-patient or in-patient settings. Further, 90% of these papers were published in clinical (medical, behavioral, or psychiatric) journal sources. These findings indicate an underrepresentation of educational settings in studies of SRB. Consequently, this potential disparity may influence the portrayal and perception of SRB research.

Analysis Plan

Following inclusion and exclusion procedures, investigators analyzed content from each article by focusing primarily on the method, results, conclusion, and discussion sections to identify components and critical outcomes for the assessment of SRB. Information about participants (ages, gender, and setting for each study) was compiled into a table with relevant assessment tools and critical implications of the selected work. Themes were identified and further reviewed by secondary and external reviewers. An emphasis remained on identifying critical content relevant to the assessment and implications of SRB to guide researchers and practitioners.

This review established outcomes to analyze regarding the development and understanding of SRB assessments. A list of critical outcomes from this analysis with select details from each study is provided in Appendix D. Results from this review are intended to guide future research and practice by establishing congruent assessment findings to maintain consistency and efficacy. By grounding assessment practices in empirical studies, schools can seek to better support and understand SRB, despite tempestuous changes in terminology and definitions regarding this topic.

Results

Family dynamics, medical and health factors, mental health (primarily anxiety and depression), and alternative functional assessment methods emerged as common themes in

assessing SRB. The following section will review critical findings from this literature based on these themes. It became clear that a common link exists between SRB and constructs related to mental health. What became even more evident was the heterogeneous profiles for students with SRB and the urgent need to better understand and address these concerns through early identification, prevention, and interventions. Reviewing these topics was intended to clarify the complex nature of assessing SRB and equip researchers and practitioners with a better understanding of these students. An overview of critical findings from these studies is included as Appendix D.

Familial Factors Associated with SRB

In earlier literature surrounding SRB, what was then called psychoneurotic-truancy, themes were centered on neuroses related to maladapted family dynamics and parent-child roles. Nearly a quarter of Pritchard and Ward's (1974) sample of students refusing school came from "incomplete families," with 48% of parents presenting with psychiatric illness. At the time, the prognosis of SRB held tragic outcomes, with only 50% of children with severe cases returning to school with regular attendance (Valles & Oddy, 1984). Children who successfully returned to school were highlighted for their family stability as an indicator for more positive outcomes. Research has since found that family dysfunction is more likely influenced by students with disruptive behavioral disorders and substance abuse, while diagnosis and severity of anxiety hold little predictive power for family stability (Bernstein & Borchardt, 1996; Bernstein et al., 1990).

Considering parent dynamics or family features was vital to understanding, assessing, and effectively supporting SRB. As previously mentioned, parent-motivated school withdrawal is not uncommon in circumstances where the student provides child-care or financial support (Kearney & Silverman, 1996; Kearney et al., 2004). Additionally, parents of adolescents with

SRB have reported lower levels of self-efficacy when compared to parents of students with regular attendance (Carless et al., 2015). These dynamics are similar to parents of children who struggle with depression. Several factors limit the availability of literature on family dynamics and SRB, and a profound need for further clarity remains (Lyon & Cotler, 2007; King & Bernstein, 2001).

Medical & Health Factors Associated with SRB

Attempts to evaluate SRB encounter further complications when medical, health, or developmental factors are present (Arvans & LeBlanc, 2009; Hochadel et al., 2014; Lee et al., 2018). Whether directly or indirectly, their influence can easily remain overlooked or underrealized. For instance, sleep problems in children with SRB were highly prevalent in young children (8-11) who showed unanimously higher scores across anxiety and depressive disorders (Hochadel et al., 2014). These struggles included insomnias (sleep onset problems, difficulties maintaining sleep), parasomnias (nightmares, night terrors), and daytime sleepiness. Additionally, students with significant weight gain due to medical complications (e.g., Systemic Lupus Erythematosus) face an increased risk for SRB (Lee et al., 2018).

Children with chronic pain symptoms commonly report more significant cognitive, behavioral, and psychophysiological symptoms of school anxiety when compared to their pain-free peers (Gibler et al., 2019). These students were also prone to more anxiety in socially evaluative situations or when faced with peer conflicts. Neurodevelopmental disorders (e.g., autism spectrum disorders) often present with co-occurring medical symptoms (irritable bowel syndrome, sinus infections, stomach aches, allergies, migraines) that have the potential to influence school attendance (Arvans & LeBlanc, 2009). This expansion of possible contributors or symptoms simultaneously increases the complexity of SRB and the considerations for what

assessment methods are appropriate and necessary. Yet again, additional research is needed to expand our knowledge of how various health and medical concerns may influence attendance differently with regard to its severity and chronicity and what supports are effective.

Mental Health Factors Associated with SRB

An undeniable link exists between psychopathologies, or mental health symptoms, and SRB. Unfortunately, students are regularly dismissed or miscategorized due to socially maladaptive behaviors (Egger et al., 2003). Due to the nature of SRB, it frequently becomes viewed solely as an opposition to authority or an intentional breaking of rules. These "truant" behaviors are often considered separate or removed from psychiatric symptoms. However, the presentation of antisocial tendencies or conduct disorder often serves to mask underlying clinical concerns (e.g., depression or anxiety) that frequently contribute to SRB (Bools et al., 1990; Egger et al., 2003).

Kearney and colleagues (2005) analyzed a group of 55 young children aged five to nine years who presented SRB with primary diagnoses of separation anxiety disorders (53.7%). However, these students' secondary symptoms (disruptive behaviors, opposition, tantrums) often masked core symptoms of anxiety and eluded conventional diagnosis (Kearney et al., 2005). Other primary diagnoses varied and included generalized anxiety disorder (9.3%), specific phobia (9.3%), social phobia/avoidant disorder (3.7%), and enuresis (1.9%). Additionally, Children often received secondary diagnoses (20.4% generalized anxiety disorder, 13% oppositional defiance disorder, 9.3% separation anxiety disorder). The second leading result of diagnostic assessments for this group of young children resulted in no discernable diagnosis (22.2%). Kearney and Albano (2004) found similar results with students presenting up to five diagnoses (2.1%) and several meeting no diagnostic criteria at all (33%).

These findings prove troubling when attempting to effectively identify, assess, and treat complex profiles of SRB; a trademark of heterogeneity continues to stifle a clear understanding. Indeed, mental health is connected, but identifying and measuring symptoms becomes severely complicated with environmental and behavioral aspects common in SRB. As a result, diagnostic confusion and misclassification commonly create difficulties when implementing interventions and treatment monitoring.

Anxiety Factors Associated with SRB

Previously, the term "school phobia" encouraged further consideration for mental health struggles that may influence student absenteeism. Early studies found that younger children who were part of a supportive family and showed lower levels of fear had more positive outcomes (Hansen et al., 1998). Alternatively, older students with more somatic complaints (headaches, abdominal pain, nausea, sweatiness, dizziness, and gastrointestinal symptoms) in conjunction with anxiety symptoms faced less progress in their attempts to return to school.

School anxiety and separation anxiety often present with higher levels of agreement between children and parent ratings; this was likely due to these symptoms being more observable or evident when compared to other areas of anxiety (generalized, social, or specific) (Becker et al., 2016). The severity of somatic symptoms and the extent of a student's absenteeism have a positive correlation (Bernstein et al., 1997; Kearney & Silverman,1993; McShane et al., 2004; Nayak et al., 2018). Students with anxiety and somatic symptoms were also more likely to struggle with SRB than children with anxiety without somatic complaints (Last, 1991). However, these common somatic complaints are not exclusive to anxiety and are strongly influenced by symptoms of depression (discussed in the next section).

In addition to somatic complaints, students with anxiety-prone SRB face potentially higher rates of victimization, cyberbullying, and other factors that may exacerbate stress (Delgado et al., 2019). Students with SRB who lacked peer support or faced social rejection continually reported having more significant risk for anxiety, depression, and feelings of inadequacy. In particular, peer rejection was predictive of increasing internalizing symptoms (Craun et al., 2017).

Students with SRB who faced comorbid social phobias and academic difficulties demonstrated less functional improvements over time (McShane et al., 2004). Additionally, a relationship was found between severe social anxiety and the severity and persistence of absenteeism and family dysfunction (Gonzálvez, Kearney et al., 2018). Students who felt unprotected at school faced significant risk factors that may influence the risk of SRB. These crucial dynamics behind school-based interactions and connections should play an important role in developing an understanding for students whose anxiety affects their attendance.

Depression Factors Associated with SRB

In their study of Japanese students, Honjo and colleagues (2003) established a strong connection between SRB, core depression symptoms, and interpersonal maladaptation. In their prior research, it was contended that children with SRB consistently reported symptoms of depression as *secondary* to somatic complaints and anxiety symptoms (Honjo et al., 2001). However, two separate studies in India found that a diagnosis of depression was most common (anxiety disorders were second) in students with SRB and that psychiatric illness was much more common in this population when compared to students without SRB (Nayak et al., 2018; Prabhuswamy et al., 2007). Additional studies have supported a strong association between

depression and anxiety as well as oppositional defiant disorder and conduct disorder (Egger et al., 2003.)

The cultural and environmental aspects of these studies presented critical elements that may influence features of depression. For instance, Nayak and colleagues (2018) found that 33% of the 45 children in their study reported parental conflicts that included domestic violence or substance abuse by one or both parents. These findings require further research to comprehend how they interact with SRB. A study of Australian families referred for SRB found that depression in a child or parent significantly impacts family dynamics and psychopathologies (Carless et al., 2015).

Making a distinction between anxiety and depression, regardless of SRB, has remained challenging in psychological assessment. Open critiques of the distinction between major depressive disorder and generalized anxiety disorder using the DSM-5 criteria have rendered small reliability statistics at best (Vanheule et al., 2014). Further research is required to perceive how these components to mental health interact distinctly, especially when coupled with the heterogeneity of SRB.

Other Mental Health Factors Associated with SRB

Studies on students with SRB have expanded to include more holistic views of mental health apart from strictly clinical symptoms. Findings have suggested that children with SRB exhibit thinking patterns more prone to holistic processing as opposed to analytical processing (Rayner & Riding, 1996). This cognitive style involves viewing information in categorical "wholes" instead of a collection of parts; may contribute to the innate mental obstacles faced by children with SRB. Further studies have found that children with SRB experience more automatic negative thoughts and thinking errors (Maric et al., 2012). Specifically, thoughts of

personal failure, hostility, and overgeneralization of negative thoughts are potential predictors of SRB. Students with SRB also showed a tendency to contribute select academic failures or outcomes to negative views of inward attributes of themselves instead of external factors (Gonzálvez, Sanmartin et al., 2018). These negative self-appraisals are consistent with traits of depression and anxiety and may contribute to students with SRB having negative inward views or appraisals of themselves.

Functional Behavioral Assessment

To avoid the shortcomings of traditional assessment approaches and categorical diagnostic criteria, Kearney and Silverman (1988 & 1990) have spent over 30 years constructing a functional behavioral system for assessing SRB (Kearney, 2002b). This approach considers hypothesis testing for reasons *why* a student refuses school by using the School Refusal Assessment Scale (SRAS-R) (Kearney & Silverman, 1999). This assessment method considers externalizing and internalizing factors within (1) negative and (2) positive reinforcement domains that maintain their behavior. Each of these domains has two components, resulting in the following four functions of SRB:

1a. Negative reinforcement: Avoiding specific features or stimuli related to the school setting or its activities that result in distress (anxiety and depression);

1b. Negative reinforcement: Escaping from aversive social scenarios and evaluative situations;

2a. Positive reinforcement: Pursuing attention from significant others (parent or caregiver), often due to separation anxiety that may manifest in somatic complaints and tantrums where the child resists leaving the home setting or presence of a significant other; and

2b. Positive reinforcement: Seeking preferred or tangible rewards and interactions outside of school (possibly television or video games, social interaction, drug use, shopping) (Kearney & Albano, 2004; Kearney & Silverman, 1990).

With proper training, the SRAS provides an effective method for categorizing students based on the underlying, hypothesized function of their SRB (Daleiden et al., 1999). This approach has shown to be effective for determining a prescriptive approach to providing treatment (Kearney & Silverman, 1999). Extensive research on this tool and its validation exists for further review (Inglés et al., 2015; Kearney & Silverman, 1990; Kearney & Albano, 2004; Kearney et al., 2001; Kearney, 2002b). Additionally, researchers have examined translations in German (Walter et al., 2017), Spanish (Gonzálvez et al., 2016), and Turkish (Seçer, 2014) languages (Elliot & Place, 2019). A substantial asset of this assessment model is its alternative method for categorizing SRB and guiding more prescriptive and effective treatments (Chorpita et al., 1996; Kearney & Silverman, 1999).

Some variation exists in the presentation of these four functional groups of SRB. For instance, children five to nine years of age do not often avoid school to escape aversive social or evaluative situations. They are most likely to refuse school to pursue attention from a caregiver (Kearney et al., 2005). Overall, cases presenting multiple functions to their SRB sustained the most negative impact and more maladaptive behaviors (Gonzálvez, Kearney et al., 2018). These children often reported more behavioral problems, difficulties coping with victimization, trauma, or stress, poor social functioning, and lower self-concepts (Dube & Orpinas, 2009; Gonzálvez et al., 2019; Gonzálvez, Kearney et al., 2018).

This functional model offers a needed reprieve from the shortcomings of formal diagnostic categorizations for SRB. However, upholding effective, comprehensive assessment

methods and collaboration across practitioners, parents, and school staff remain critical (Kearney, 2002a). Additionally, the function of a student's SRB may change or vary over time and require updating and modifying treatment based on ongoing progress monitoring (Kearney, 2007). Underlying medical or psychiatric factors also present as primary or secondary concerns and should be taken into account. Lastly, practitioners should carefully consider family dynamics, developmental status, race/ethnicity, socioeconomic status, comorbid disorders, and the severity of SRB (Kearney, 2007).

Summary

The topic of school attendance has long been recognized as a growing concern and priority (Kena et al., 2016). Twenty-five percent of students presenting with SRB met the criteria for a DSM-4 disorder compared to only 6.7% of the regularly attending students (Egger et al., 2003). While expansive knowledge and resources are available for assessing clinical traits in SRB cases (e.g., anxiety or depression), very little is known about how these clinical features interact with SRB. For instance, students with SRB and a psychiatric diagnosis often continue to meet diagnostic criteria even after they gradually return to school (Prabhuswamy et al., 2007). In a longitudinal study, Wood and colleagues (2012) found absenteeism and psychopathology played a reciprocal role in precipitating risk factors for one another. Essentially, the presence of SRB may exacerbate mental health struggles and vice versa.

Although a strong connection between mental health and SRB is suspected, little understanding exists about symptom changes when student absenteeism varies in severity or chronicity. Following a systematic analysis of literature and other reviews, several questions were left unanswered. The present study sought clarity for the prospect of assessing mental health in cases where SRB is present. Additional demographic variables were analyzed to

determine what essential features practitioners should consider when identifying students at risk for SRB. The present study incorporated an original perspective by using a dual-factor approach to assess students' subjective well-being and psychopathology. This chapter's conclusion provides hypotheses to the research questions presented in Chapter 1.

Research Questions and Hypotheses

The following research questions were gathered from Chapter 1 and restated with relevant hypothesis statements based on reviewed literature. Suspected outcomes included in these hypotheses were relied on for the proceeding chapters on analysis, results, and discussion.

Research Question 1: *How do school attendance items from the current dataset compare to prevalence outcomes using other large datasets?*

Research Question 1 Hypothesis

SRB prevalence has varied dramatically and often becomes influenced by inconsistent definitions, terminology, and categorization parameters in each study. Consequently, a broad range from 05-28% of the population presents with SRB. Other extensive surveys of middle and high school students estimated prevalence to include 11% of students, increasing to 16% in high school populations (Henry, 2007; Vaughn et al., 2013). Data from middle and high school students from 2002 to 2014 demonstrated similar results, including 10.8% in 2002 and 11.1% of students in 2014 (Maynard et al., 2017). The present study expected self-reported attendance problems to fall within this range provided from prior studies.

Research Questions 2a-2d: *Are student self-reports of attendance consistent across demographic items?*

Research Question 2a: *Are significant differences observed in attendance groups based on grade level?*

Research Question 2a Hypothesis

Some literature has suggested that peak SRB prevalence most commonly occurred in students ten to thirteen years of age, or during transitions from elementary to middle school or middle school to high school (Kearney & Albano, 2018; Kearney et al., 2004). However, findings from another large, nationwide data sample (n = 209,393) from 2002-2014 consistently found attendance problems increased in adolescents as they grew older (comparing youth ages 12-14 and 15-17) (Maynard et al., 2017). The present study expected high school students to be absent more frequently than middle school students, showing a general increase with age.

Research Question 2b: *Are significant differences observed in attendance groups based on gender or sexual orientation?*

Research Question 2b Hypothesis

Select studies have supported that absenteeism rates related to truancy are highest in female students (Maynard et al., 2017), while other studies report a significant difference for male students. Findings have remained somewhat inconsistent; however, multiple studies have maintained that gender does not appear to play a substantial role in influencing SRB (Henry, 2007; Kearney et al., 2004; Vaughn et al., 2013). Previous literature regarding LGBT students has found a higher level of risk for SRB (Pampati et al., 2020; Robinson & Espelage, 2011). The present study expected females to present more frequent absenteeism except for transgender students.

Research Question 2c: *Are significant differences observed in attendance groups based on student race/ethnicity?*

Research Question 2c Hypothesis

SRB and related attendance problems present substantial problems for all race/ethnicity groups (Kearney et al., 2004). However, in groups based on patterns of mild, moderate, and chronic attendance problems, research has demonstrated idiosyncrasies when comparing the frequency of absences. For example, Vaughn and colleagues (2013) found Caucasian/White students to represent nearly 80% of students in a group with mild SRB. While groups of moderate SRB struggles consisted primarily of African American or Hispanic (almost 80%), students with chronic absences were for the most part evenly distributed across White, African American, and Hispanic students. When comparing attendance for secondary students (ages 12-17) in race/ethnicity groups of Non-Hispanic White, African American, and Hispanic, the prevalence of absenteeism was highest for Hispanic students, followed by African American and Non-Hispanic White students (Maynard et al., 2017). The present study expected that absenteeism would be more prevalent in students of color.

Research Question 2d: *Are significant differences observed in attendance groups based on socioeconomic status?*

Research Question 2d Hypothesis

SRB presents as a substantial problem across all socioeconomic classes (Kearney et al., 2004). However, research has found that higher income is associated with better school attendance (Gennetian et al., 2018). Further studies have supported that students from lower-income families and communities are four times as likely to miss 10% or more of school when compared to higher-income peers (Chang et al., 2008; Gottfried, 2014). When analyzing the interaction between household income and attendance, Maynard and colleagues (2017) found a negative correlation between absence and household income (i.e., higher household income was

associated with lower rates of absence). The present study expected more frequent absences for students who reported their parents had lower levels of education and students who are eligible for free or reduced-price lunch.

Research Question 3a: *Are there differences in self-reported subjective well-being measures (i.e., Social-Emotional Health Survey-Secondary [SEHS-S]) across students based on the amount of school they reported missing in the past 30 days (i.e., Question 19)?*

Research Question 3a Hypothesis

Currently, research has not extensively explored differences in subjective well-being for students with varying levels of absenteeism. Recent research has found that select domains of the covitality model (belief-in-self and belief-in-others) were significant indicators of attendance problems (Wroblewski et al., 2019). Based on its correlation with measures of psychological distress or psychopathologies, the present study expected that subjective well-being would similarly decline in students who reported more significant attendance difficulties.

Research Question 3b: *Are there differences in self-reported subjective well-being measures (i.e., SEHS-S) across students based on the amount of school they reported skipping or cutting in the past 12 months (i.e., Question 21)?*

Research Question 3b Hypothesis

As previously mentioned, little-to-no research has explored the subjective well-being of students with SRB. Select factors of subjective well-being, belief-in-others, and belief-in-others, are indicators of SRB (Wroblewski et al., 2019). Based on its strong negative correlation with psychopathologies, the present study expected that subjective well-being would deteriorate with more frequent absenteeism. Considering students' subjective well-being was an essential component in the present study and exploring SRB with a dual-factor perspective.

Research Question 4a: *Are there differences in self-reported psychological distress measures (i.e., Social-Emotional Distress Scale-Secondary [SEDS-S]) across students based on the amount of school they reported missing in the past 30 days (i.e., Question 19)?*

Research Question 4a Hypothesis

Research has consistently identified a strong connection, despite the heterogeneity of SRB, between overall mental health and poor school attendance. Symptoms of anxiety and depression are standard features in several cases of SRB. However, these features may vary depending on a student's age, family dynamics, and experience at school. Despite attempting to differentiate between truancy (externalizing behavioral struggles) and symptoms related to anxiety or depression, research supports internalizing psychopathologies are often present and underlying in students with SRB (Bools et al., 1990; Egger et al., 2003). The complexity of SRB often results in students not meeting diagnostic criteria or multiple comorbid diagnoses being simultaneously met (Kearney & Albano, 2004; Kearney et al., 2005). The present study expected students with poor school attendance to report higher levels of psychological distress.

Research Question 4b: *Are there differences in self-reported psychological distress measures (i.e., SEDS-S) across students based on the amount of school they reported skipping or cutting in the past 12 months (i.e., Question 21)?*

Research Question 4b Hypothesis

Similar to Research Question 4a's hypothesis, Thre present study expected students with more frequent absences to report higher levels of psychological distress. This assumption has consistently remained in previous research. Despite the complexity and variety of mental health struggles presenting in SRB cases, symptoms related to anxiety and depression are often standard

features. However, these symptoms often become ambiguous as student absenteeism becomes more or less chronic or severe (Kearney & Albano, 2004; Kearney et al., 2005).

Research Question 5: *Using groups (a) Complete Mental Health, (b) Symptomatic but Content, (c) Vulnerable, and (d) Troubled from a dual-factor model approach, what percentage of students from each group presented with potential SRB?*

Research Question 5 Hypothesis

Research has exposed an undeniable link between mental health and SRB; however, no studies have analyzed changes in students' subjective well-and psychological distress have with their attendance. Suldo and Shaffer (2008) conducted research on the dual-factor model based on an analysis of 349 middle school students. Their findings concluded that 57% of these students demonstrated complete mental health (average to high subjective well-being and low psychopathology), 13% were symptomatic but content (average to high subjective well-being and high psychopathology), 13% were vulnerable (low subjective well-being and low psychopathology), and 17% were troubled (low subjective well-being and high psychopathology). From these findings, students in the complete mental health group were found to have several positive attributes related to social factors, academic assets, physical health, and *better school attendance* (Suldo & Shaffer, 2008). The present study expected that vulnerable and troubled students will report more frequent absences as their subjective well-being decreases and psychological distress increases.

Chapter 3: Research Methodology

The present study used screeners for subjective well-being and psychological distress to analyze students' mental health changes as their attendance problems increased. Two questions from the California Healthy Kids Survey-Secondary Core Module (CHKS-SCM) were used to gauge the severity of SRB. Cross-sectional data from self-report measures of studnets' subjective well-being and psychological distress were gathered using the Social-Emotional Health Survey-Secondary (SEHS-S) and Social-Emotional Distress Scale-Secondary (SEDS-S), repsectively. These components uphold a dual-factor perspective of mental health. Additionally, demographic variables were analyzed to consider what influence they have on SRB. In the following sections, participants from the present dataset were reviewed, followed by a description of each instrument. After establishing variables and reviewing methodology, an analysis plan was outlined for each Research Question.

Participants and Survey Measures

The present study relied on a large (n = 107,125) extant dataset acquired through a data-sharing agreement with the University of California Santa Barba's Covitality Project (Project Covitality, 2021a; Furlong, 2020); a copy of this agreement is included as Appendix E. A grant (#R305A160157) through the Institute of Education Sciences supported the Covitality Project over the past five years (Project Covitality, 2021b). Included in these data were cross-sectional responses from secondary (grades 7-12) students from 296 public, charter, and alternative secondary schools across 35 California counties. The present data-sharing agreement included responses to select questions from the CHKS-SCM (CalSCHLS, 2021a) and concurrent responses on the Social-Emotional Health Survey-Secondary (SEHS-S) (Furlong, Dowdy et al., 2014; Furlong, You et al., 2014; Furlong et al., 2020) and the Social-Emotional Distress Scale-

Secondary (SEDS-S) (Dowdy et al., 2018) from the 2017-18 and 2018-19 school years. Inclusion criteria for this project included the following guidance:

1. The English language version of the survey was completed (a separate report examined Spanish language responses).
2. A minimum of 30 (of the 36) SEHS-S items were completed.
3. The CHKS response quality check was passed (the CHKS includes a case rejection criterion that removes students with suspicious responses and inconsistent or outlandish/impossible responses).
4. More than 10 minutes were taken to complete the survey (students who took the survey in under 10 minutes were not included in order to remove low effort responders).
5. Items were answered honestly. The CHKS includes an item as a response quality check (*How many questions in this survey did you answer honestly?* [responses: *all of them*, *most of them*, *only some of them*, *hardly any*]). Students responded, *hardly any*, were not included in the project's cross-sectional sample (Furlong et al., 2020, p 12).

This secondary analysis of data was approved as exempt through the university Institutional Review Board (IRB-21-95) on 12/21/2020.

California Healthy Kids Survey (CHKS): Core Module

Over the past 20 years, the CHKS has become a comprehensive measure of school climate that includes multiple modules to survey students' risk, resilience, and resources (Mahecha & Hanson, 2020). The Core Module has remained a mandated component to California state schools receiving Tobacco Use Prevention and Education (TUPE) grants. It also supports compliance with the No Child Left Behind Act and is intended to guide Local Control

and Accountability Plan (LCAP) efforts. Traditionally, participating schools administer the survey every other year; however, several schools consider annual administration. In the 2017/18 and 2018/19 school years, the CHKS-SCM was administered to 1,179,951 students in 2,953 schools across 717 districts. This represented nearly 70% of the districts and 52% of schools in California. Almost 30% of these participating districts completed the CHKS annually.

CHKS Design and Psychometrics

Core Module surveys are now available for elementary (4[1]-6), middle (7-8), and high school (9-12[2]) grade levels, with administration guidance available online (CalSCHLS, 2021b). Testing duration for the CHKS-SCM lasts approximately one class period; 95% of middle school students can complete the online Core Module in about 30 minutes, while high school students take about 24 minutes. Administrating additional modules requires more time but can be customized to meet the needs and specifications of any district. Typically, this self-report survey was completed anonymously following passive consent from parents and student assent.

Over the years, the CHKS has undergone extensive psychometric testing and development (Hanson, 2011; Hanson, 2012; Hanson & Kim, 2007; Hanson & Voight, 2014). Mahecha and Hanson (2020) provided a recent report that reviewed data from the 2017/18 school year. Findings from this report continued to confirm the established nine distinct dimensions of school climate and student well-being measured in the Secondary Core Module (Hanson, 2011; Hanson & Voight, 2014). The discriminant validity of these factors was appropriately small, with one exception (Violence Victimization and Harassment and Bullying have a higher correlation of 0.86). Through a confirmatory factor analysis model, the average

[1] Traditionally, the Elementary Core Module is intended for grades 5 & 6, however, students in grade 4 can be accommodated.
[2] The Secondary Core Module also includes nontraditional grades or settings (e.g., continuation school).

loading across all constructs was 0.81. These results indicated that each item was appropriately correlated to its underlying factor (Mahecha & Hanson, 2020).

Further analysis of the Secondary Core Module from 556,961 students across 2,187 schools revealed no substantial item bias across demographic questions related to grade levels (7, 9, 11, and non-traditional), gender (male, female), race/ethnicity (African American, American Indian, Asian, Latinx, Pacific Islander, White, and Multiethnic), and English language proficiency (English only, English proficient, and Not proficient) (Mahecha & Hanson, 2020). Some meaningful differences exist between students in each demographic group. For example, items related to "harassment" have a different meaning for females than males. Additionally, nearly all non-white racial/ethnic groups reported higher levels of harassment related to race/ethnicity/national origin and immigrant status (even when controlling for overall levels of harassment and bullying victimization). Estimates for internal consistency reliability for the total sample, based on demographic items, were above the recommended threshold (>0.70); one exception involved delinquency in female students (Mahecha & Hanson, 2020). The present study used only select questions (19 and 21) regarding student attendance.

Social-Emotional Health Survey-Secondary (SEHS-S)

The Social-Emotional Health Survey (SEHS), originally named the Positive Experiences at School Scale (PEASS), was developed out of a positive psychology focus to measure social-emotional strengths in what is known as covitality (Furlong et al., 2013; Furlong, Dowdy et al., 2014; Furlong, You et al., 2014). This construct consists of four domains, each with three subsequent subdomains (Engaged Living [Optimism, Zest, Gratitude], Emotional Competence [Emotional Regulation, Self-Control, Empathy], Belief-in-Others [Family Support, Peer Support, School Support], and Belief-in-Self [Self-Awareness, Self-Efficacy, Persistence]). Each of these

are essential components to an individual's subjective; however, they are collectively viewed as building blocks for an even more important overall combination of strengths (Furlong, Dowdy et al., 2014). In other words, the resulting covitality score from the SEHS has synergistic properties that are greater than each of its co-occurring parts and provide protective assets against emotional and behavioral problems (Lenzi, Furlong et al., 2015; Lenzi, Sharkey et al., 2015). Figure 2 provides an overview of this dynamic model and each of its subcomponents.

Figure 2

Covitality Model

Subdomains						Domains
Emotional Regulation	+	Self-Control	+	Empathy	=	**Emotional Competence**
						+
Optimism	+	Zest	+	Gratitude	=	**Engaged Living**
						+
Self-Awareness	+	Self-Efficacy	+	Persistence	=	**Belief-in-Self**
						+
Family Support	+	Peer Support	+	School Support	=	**Belief-in-Others**
						=
						Total Covitality

The Social-Emotional Health Survey-Secondary (SEHS-S) is now an optional module within the CHKS that measures subjective well-being in children grades 7-12. Initially, the scale included 51 items to measure the covitality and its twelve constructs mentioned above (Furlong, You et al., 2014). These items were intentionally reduced to 36 questions to encourage a brief screener while upholding strong psychometric qualities. Similarly, all questions have been aligned to include a 4-point response scale (1 = *not at all true*, 2 = *a little true*, 3 = *pretty much true*, 4 = *very much true*) (Furlong et al., 2020). You and colleagues (2014) had previously

maintained the gratitude and zest subscales with a 5-point response scale. The resulting tool provides a strong measure of subjective well-being and supports a duo continuum approach to screening mental health struggles in schools (Furlong, You et al., 2014). A copy of the SEHS-S is included as Appendix B

SEHS-S Design and Psychometrics

The SEHS was developed from modifications to one of the CHKS optional modules, the Resilience Youth Development Module (RYDM). Other measures of positive psychological traits related to well-being were also used as a theoretical foundation (Gratitude Adjective Checklist [GAC], Youth Life Orientation Test [YLOT], Behavioral Emotional Rating Scale [BERS], and Child Self-Control Rating Scale [CSCRS]) (Furlong, You et al., 2014). Convergent validity was investigated using an item related to academic achievement from the CHKS-SCM and two items related to perceived school safety on the California School Climate Index. Discriminant validity procedures relied on three items from the CHKS-SCM related to at-risk behavior (tobacco use, marijuana use, binge drinking) as well as a question related to self-reported depression from the Youth Risk Behavior Surveillance Survey (YRBSS). Concurrent validity was investigated with comparisons to the Student Life Satisfaction Scale (SLSS) and Positive and Negative Affect Scale for Children (PANAS-C)- these measure overall life satisfaction and emotional experiences, respectively.

In their initial validation study, Furlong and colleagues (2014) selected surveys from 3,189 students in grades 8, 10, and 12 from 12 schools (seven junior high schools, four comprehensive high schools, and one continuation high school) in central California. In the 2011-12 school year, students were administered the SEHS-S and the SLSS, PANAS-C, and the CHKS-SCM. Before and after reducing the scale to 35 items, a series of confirmatory factor

analysis procedures conducted across random samples supported good factor loadings for the covitality construct and subsequent factors. Multigroup invariance testing conducted at three levels (configural, metric, and scalar) supported sufficient invariance for the covitality measure across gender; this implied that a similar construct was measured across gender. By using a structural path model analysis, the four domains (Engaged Living, Emotional Competence, Belief-in-Others, Belief-in-Self) and overall covitality measures proved to be a good fit model with strong positive relations.

Discriminant validity analysis revealed significant mean differences between groups based on the SEHS-S (very low, low, high, and very high) and the measures of at-risk behavior on the CHKS (tobacco use, marijuana use, binge drinking). Similar results were found for the depressive symptoms question from the YRBSS; students with the highest SEHS-S scores were least likely to report symptoms of depression. Analysis of convergent validity also indicated that these groups of covitality scores held significant differences across the self-reported academic achievement question on the CHKS (students in the highest-scoring covitality group reported the highest grades). Similar results found that these students (highest-scoring covitality group) shared higher reports of perceived safety at school based on items in the CHKS. Overall, this original sample maintained strong internal consistency reliability ($\alpha = 0.92$) on the SEHS-S, and covitality scores demonstrated a strong correlation with other measures of well-being ($r = .89$) (Furlong, You et al., 2014).

In the following school year, You and colleagues (2014) supported these results with a separate sample including 2,240 students from grades 9-12 ($\alpha = 0.91$). Covitality and its underlying factors were, again, supported as a good model fit showing strong factor loading and sufficient invariance across gender-by-age groups (You et al., 2014). Further support for the

concurrent validity of the SEHS-S used the Behavioral Emotional Screening System (BESS) and found a negative correlation (r = -.63). These findings condoned the SEHS-S as a robust measure of positive psychological traits instead of negative indicators identified on the BESS. The positive associations of covitality and students' academic achievement, measured by their grade point averages, provided additional support of its validity (You et al., 2014).

Due to original study samples consisting of approximately 70% Latinx or Hispanic students, primarily in the central region of California, limitations were acknowledged for its use across diverse populations (Furlong, You et al., 2014; You et al., 2014). To build more substantial validity and expand consideration for using the SEHS-S, You and colleagues (2015) Surveyed 14,171 students in grades 9-12 across 17 high schools in suburban and urban school districts from San Diego to San Francisco, California. Confirmatory factor analyses continued to support strong factor loadings on each corresponding factor and the overall covitality measure. Further invariance was also established across gender using different sociocultural groups.

Additional studies have supported the ongoing development of the SEHS-S and its use across more diverse groups (Furlong et al., 2020). Strong internal consistency continues to be found for overall covitality scores across Japanese (α = 0.93 [Ito et al., 2015]) and South Korean (α = 0.94 [Lee et al., 2016]) high school students. Additionally, Turkish, Korean, and Chinese youth demonstrated positive associations for high covitality scores and prosocial and strengths-based measures and negative associations with negative psychological indicators (e.g., depression, anxiety, stress) (Lee et al., 2016; Telef & Furlong, 2017; Wang et al., 2018).

Social-Emotional Distress Scale-Secondary (SEDS-S)

The Social-Emotional Distress Scale-Secondary (SEDS-S) was designed to be co-administered alongside the SEHS-S to support the dual-factor model of mental health (Dowdy et

al., 2018). Its purpose is to assess personal emotional distress within the context of a school. Intended as a screening tool, the SEDS-S is recommended for use prior to more traditional tools when assessing for clinical diagnosis. The SEDS-S was intentionally designed to be short in length and does not differentiate between depression and anxiety but produces a unidimensional measure of internalizing psychological experiences related to these constructs. The initial 10-item scale (Dowdy et al., 2018) included 5-point responses (1 = *not true of me*, 2 = *a little true of me*, 3 = *pretty much true of me*, 4 = *true of me*, 5 = *very true of me*), however, a 4-point scale was used in gathering current data (1 = *not at all true*, 2 = *a little true*, 3 = *pretty much true*, 4 = *very much true*) (Furlong et al., 2020). A copy of the SEDS-S is included as Appendix C.

SEDS-S Design and Psychometrics

In their initial validation study, Dowdy and colleagues (2018) used surveys from 3,780 students in grades 9-12 from two high schools in separate districts in central California. In the 2015-16 school year, they administered the SEDS-S and the SEHS-S to students from both schools. Participants from one of the schools also completed the Brief Multidimensional Student Life Satisfaction Scale (BMSLSS), Patient Health Questionnaire (PHQ-9) Depression Scale, and Generalized Anxiety Disorder-7 Scale (GAD-7) for use in external validity analysis.

Randomized split samples from one school underwent confirmatory and exploratory factor analyses (CFA and EFA) followed by cross-validation with the second school to examine and support an underlying single-factor structure in the SEDS-S (Dowdy et al., 2018). Factor loading remained strong for each of the ten items across both schools and each split-sample analysis. Continually strong internal consistency estimates ($\alpha = .91$) were found across each school with equally strong latent-level reliability ($\Omega = .91$). Convergent and discriminant validity were analyzed through structural modeling and path analyses which found significantly positive

relations between the SEDS-S and the GAD-7 (r = .80) and PHQ-9 (r = .76) as well as significant negative relations between the SEDS-S, the SEHS-S (r = -.38), and the BMSLSS (r = -.56) (Dowdy et al., 2018).

Due to its original convenience sampling, the generalizability of findings for the SEDS-S was somewhat limited (Dowdy et al., 2018). Additionally, the original sample was confined to two schools in one region of California and was comprised primarily of Latino/a or Hispanic students (School 1 = 77.7%; School 2 = 48.7%). Dowdy and colleagues (2018) recommended further analysis of invariance across age, ethnicities, and genders. In response to these limitations, Furlong and colleagues (2021) have recently provided validation for the SEDS-S and its use among diverse student populations. This study used subsamples from 105,771 students from 113 California secondary schools across urban, suburban, and rural communities (Furlong et al., 2021). Measures of internal consistency were strong (α = .94) and similar to the original validation study (α = .91) (Dowdy et al., 2018). After reconfirming a good model fit for the single factor structure through CFA, measurement invariance tests were conducted at three levels (configural, metric, and scalar). Findings established measurement invariance across demographic items (gender, grade levels, Latinx status, and ethnicity groups) to support that psychological distress, as measured by the SEDS-S, was measured similarly across these demographic items.

Research Design

The primary goal of this study was to determine if scores from self-report measures of subjective well-being and psychological distress were significantly different as students reported more absenteeism. Variables and their subsequent measures were reviewed in the following sections. Questions regarding attendance on the CKS-SCM establish independent variables based

on the amount of school students reported missing or skipping in the past 30 days and 12 months, respectively. Additional items on the CHKS-SCM identified demographic details for students for analysis of their relationship with attendance problems. Cross-sectional reports on the SEHS-S and SEDS-S measured students' subjective well-being and psychological distress, respectively.

Independent Variables

Groups established for the present study's independent variables (IV) were based on questions regarding attendance on the CHKS-SCM (Questions 19 and 21). A copy of questions 19 and 21 from the CHKS-SCM are included as Appendix A. These responses are similar to other questions about attendance (or truancy) from large nation-wide survey projects (e.g., National Comorbidity Survey: Adolescent Supplement [Kessler, 2001-2004]; Monitoring the Future national survey [Henry, 2007]; School Crime Supplement to the National Crime Victimization Survey [United States Department of Justice, 2007]; National Survey on Drug Use and Health [Vaughn et al., 2013]) used in prior studies related to the topic of school attendance. Despite their similar questions and response patterns, each of these surveys focused primarily on "truancy."

Question 19 (*In the past 30 days, how often did you miss an entire day of school for any reason?*) has four response options (*did not miss any days of school*, *1 day*, *2 days*, *3 or more days*). Question 21 (*During the past 12 months, about how many times did you skip school or cut classes?*) has seven response options (*0 times*, *1-2 times*, *a few times*, *once a month*, *twice a month*, *once a week*, *more than once a week*). These groups consisted of nominal (i.e., categorical) data. Additional demographic items gathered from the CHKS-SCM included students' grade levels, gender, sexual orientation, race/ethnicity, and socioeconomic status. These questions were used to consider their relationship with SRB.

Dependent Variables

The present study maintained a holistic perspective of students' mental health by implementing a dual-factor model approach. Cross-sectional data was from the Social-Emotional Health Survey-Secondary (SEHS-S) and the Social-Emotional Distress Scale-Secondary (SEDS-S) were used to measure subjective well-being and psychological distress, respectively. These measures and their respective constructs established dependent variables for the present study.

The SEHS-S, a measure of subjective well-being, is a 36-item scale with 4-point response options (1 = *not at all true*, 2 = *a little true*, 3 = *pretty much true*, 4 = *very much true*). Together, these questions amount to a total covitality score based on a range of raw scores from 36-144. The SEDS-S, a measure of psychological distress, is a 10-item measure using the same 4-point response scale (1 = *not at all true*, 2 = *a little true*, 3 = *pretty much true*, 4 = *very much true*). These questions amount to a total distress score with raw scores ranging from 10-40.

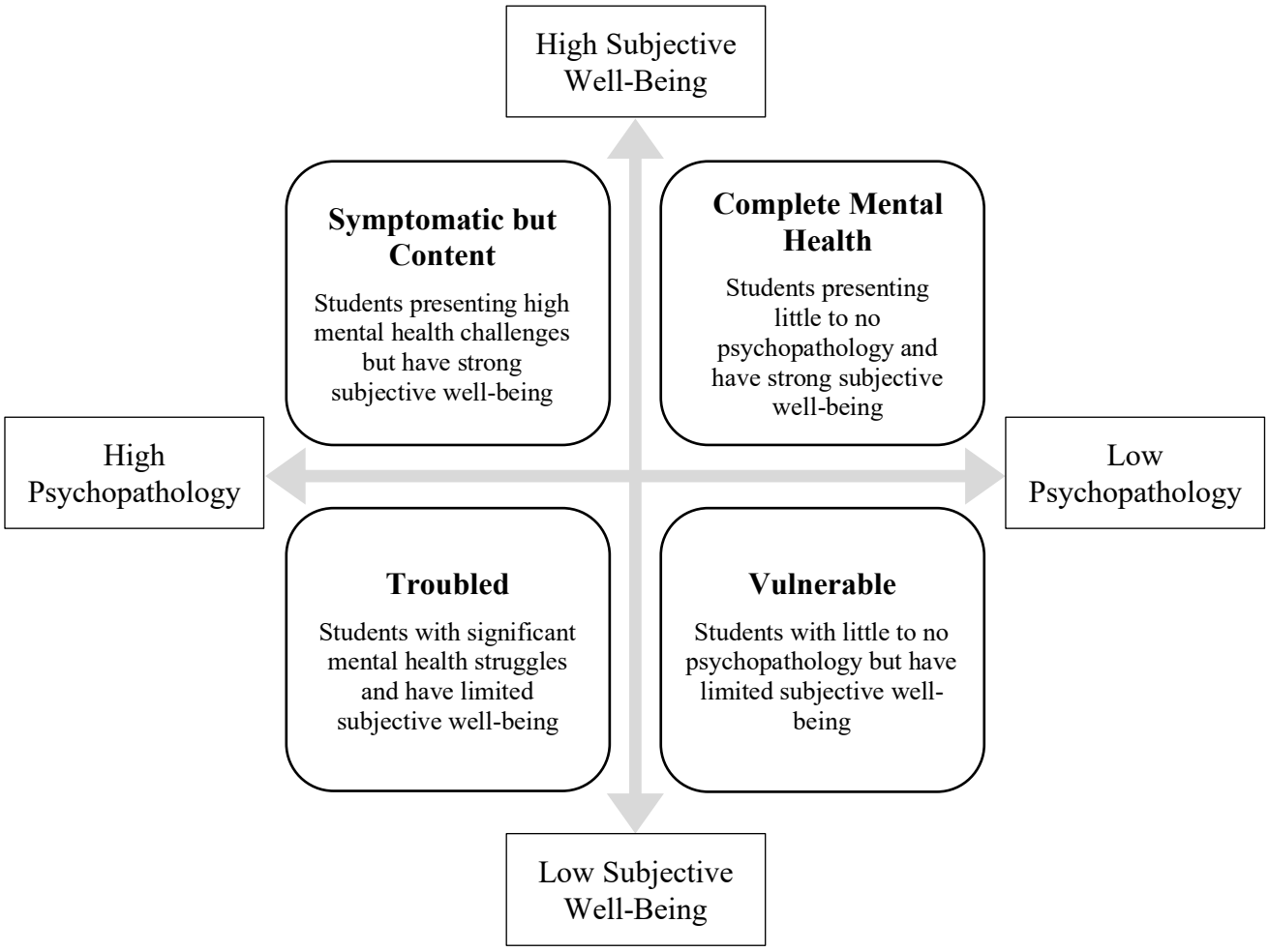
Together, these scales were designed for an integrated approach to screening for mental health with a dual-factor perspective (Suldo & Shaffer, 2008). For Research Questions 3a, 3b, 4a, and 4b, raw total scores were used when comparing groups. For the final Research Question 5, an Average Item Response (AIR) score was computed for each measure to assign students to appropriate groups from the dual-factor model based on their collective scores (Furlong et al., 2020; Suldo & Shaffer, 2008). These final AIR scores range from 1-4 and can be separated into groups of low, average, and high scores (Furlong et al., 2020).

Figure 3 below presented each dual-factor group based on the outcomes from student reports of subjective well-being and psychological distress (Complete Mental Health, Symptomatic but Content, Vulnerable, and Troubled). Group assignment was based on established values from on the SEHS-S and SEDS-S, including low subjective well-being (AIR

= 1.0-2.2) and low psychopathology (AIR = 1.0-1.9) (Vulnerable); low subjective well-being (1.0-2.2) and high psychopathology (3.0-4.0) (Troubled); average to high subjective well-being (2.3-4.0) and high psychopathology (3.0-4.0) (Symptomatic but Content); and finally, average to high subjective well-being (2.3-4.0) and low psychopathology (1.0-2.9) (Complete Mental Health) (Furlong et al., 2020; Suldo & Shaffer, 2008).

Figure 3

Group Assignment Based on Dual-Factor Model



Data Analysis Procedures

Quantitative methods analyzed data using SPSS software, version 27. Initial frequency distributions computed for Questions 19 and 21 from the CHKS-SCM attendance questions reviewed the different responses to gather percentages of occurrence. Research Question 1 relied on this information regarding the prevalence of SRB measured by the CHKS-SCM compared to outcomes from other large datasets.

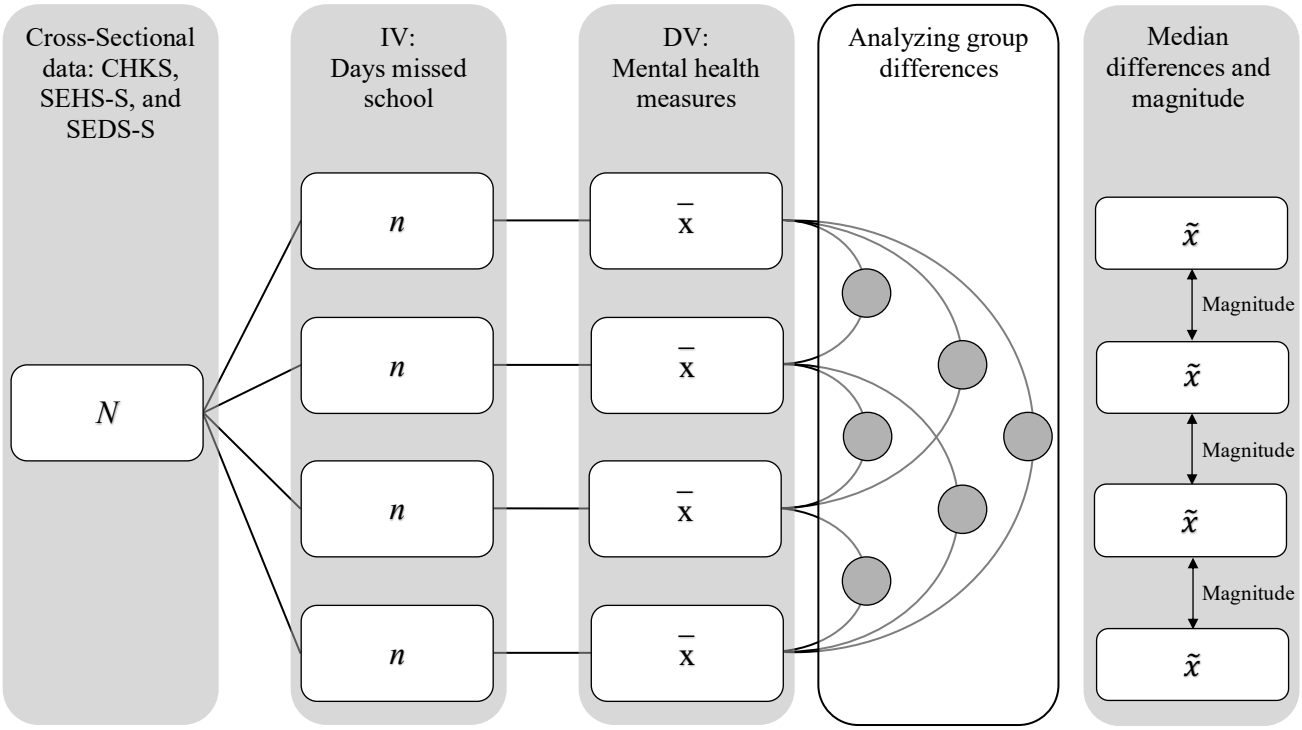
Using these separate groups based on attendance Questions 19 and 21 from the CHKS-SCM, descriptive statistics provided demographic information for grade levels, gender identity, sexual orientation, race/ethnicity, and socioeconomic status). Cross-tabulation tables used rows of students' demographic information and columns with their attendance reports. Following this, Chi-square tests of independence were conducted for Research Questions 2a-2d to determine if demographic factors, separately, had a significant relationship with attendance based on Questions 19 and 21. Effect sizes expressed the magnitude of these relationships as small, medium, or large.

For Research Questions 3a and 3b, mean scores of students' subjective well-being (SEHS-S) were compared across groups based on responses to Questions 19 and 21 from the CHKS-SCM. Next, for Research Questions 4a and 4b, these same procedures analyzed differences in reports of psychological distress (SEDS-S) for students based on their attendance reports. Due to necessary parametric assumptions not being met, the nonparametric Kruskal Wallis *H* (K-W) test analyzed groups (see sections on preliminary analysis in Chapter 4). Further rank order and between-group analysis used pairwise comparisons of median scores to detect differences between group levels based on absenteeism levels. Each group was analyzed for statistical significance based on a *p* value below .05 ($\alpha = .05$). To better understand these

differences, effect size calculations analyzed the magnitude between each group difference. Figure 4 demonstrates a visual mapping of this process.

Figure 4

Data Analysis Plan



Finally, Research Question 5 utilized established dual-factor groups (Complete Mental Health, Symptomatic but Content, Vulnerable, and Troubled) based on AIR scores from the SEHS-S and SEDS-S. Cross-tabulation tables provided frequency distribution data for students from each dual-factor group and students presenting SRB (based on Questions 19 and 21 from the CHKS-SCM). A percentage of each dual-factor group represented students based on their responses to each attendance question. This indicated how many students from each dual-factor group presented SRB. Further descriptive information elaborated on the groups of students with SRB present in different dual-factor groups.

Methodology Descriptions: Analyzing Group Differences

Effectively comparing groups has long been an integral process for research analyzing differences to better understand select aspects, or variables, within groups. This lengthy process involved establishing appropriate groups, determining levels of error, comparing differences, and discerning meaning from outcomes. By establishing a significant difference between groups, their relationship can be further examined to answer questions about their dynamics. Due to limitations within the data used in this study (i.e., non-normal distributions and heterogeneity of variance across group levels), nonparametric tests were primarily used to compare groups.

Effect size measures were used to describe the magnitude, or the degree, of a connection or difference. For instance, a study's findings may have resulted in statistical significance between select variables or groups, but no indication was readily provided for determining the impact that this relationship had (Salkind, 2007). Reporting measures of effect size have become an essential component of psychological research (Johnston et al., 2004).

Calculating an effect size includes three elements, standardization of the effect, specification of the direction an effect had, and independence from the sample size (Salkind, 2007). Ensuring these components allows for effect sizes to be generalized across multiple studies (e.g., meta-analyses) or groups. Effectively, effect sizes use mean (average) differences to compute the relationship between two variables. Other less common models rely on squaring the correlation coefficient outcomes or using odds ratios. Appropriate effect size measures should be determined by analyzing the nature of each sample's data and its underlying distribution (Lakens, 2013).

Pearson's Chi-Square Test

When analyzing nominal (i.e., categorical) or ordinal data, the Pearson's Chi-square test (χ^2) was relied on (Sirkin, 2006). The use of critical value coefficients weres used for the outcome (χ^2) of this nonparametric test to determine whether a significant relationship exists between the observed or actual occurrences and expected occurrences of the groups. A larger difference between observed and expected values results in a larger Chi-square value.

If the final Chi-square value is equal to or greater than an established critical value from a critical values table, typically at the .05 level, a significant difference exists. A significant difference implies that a statistically significant association, not due to chance, exists between the groups on some level. To some extent, the complexity or amount of variables analyzed can influence probability outcomes. For example, the number of levels in each group may increase error or change probability outcomes (Salkind, 2010). Calculating the degrees of freedom (*df*) for each variable accounted for this:

$$df = (r - 1)(c - 1)$$

In this formula, the *r* value represents the number of rows in the table, while the *c* value equals the number of columns.

Chi-Square Assumptions

Before computing a Chi-square test, specific criteria or assumptions must be met (Salkind, 2010). Primarily, variables should remain nominal (i.e., categorical) or ordinal. The sample must be randomly drawn from the population. Data must remain in raw form (i.e., no percentages or standardized scores), and variables must be independent from each other. The impact encountered in small sample sizes was unlikely in a large dataset like that of the current study. In general, expected frequencies should not be below five for more than 20% of the cells

generated (Pagano, 2009); however, many view these specifications as arbitrary (Frey, 2018). Results of a Chi-square are presented in cross-tabulation tables to assess differences between each group. When interpreting outcomes, results imply that the groups in a sample are significantly related in some way and should not be generalized to the greater population from which it came.

Chi-Square Effect Size Calculations

Effect size calculations measured the amount of difference, or magnitude, between each of the groups. Cramer's φ (phi) was relied on for variables with dichotomous or two levels (male or female), and Cramer's V was used when variables included more than two levels or categories (grades 7, 8, 9, etc.). These effect sizes measure the association between variables to determine the level of their relationship based on a percentage of their variation; a result of 0.0 indicates no relationship is detected (Durlak, 2009). Further interpretation of these effect size results will follow the guidelines provided by Frey (2018), with 20-.29 representing a weak correlation or effect; .30-.50 representing a moderate effect; .50-.69 representing a strong effect; and .70-1.0 indicating a very strong effect.

Analysis of Variance (ANOVA)

Initially, a planned analysis using analysis of variance (ANOVA) tests was intended to compare scores for the SEHS-S and SEDS-S across groups based on attendance. However, necessary assumptions to run this parametric analysis were not met and a nonparametric alternative, the K-W test was used. A brief description of ANOVA procedures was provided here to further elaborate on standard procedures for statistically analyzing groups using quantitative methods; the K-W test relies on similar principles.

An ANOVA is a popular tool in social sciences for experimental and non-experimental designs (Belhekar, 2016). Using an ANOVA relies on a general linear model, such that variables plotted along a path (i.e., vector) should resemble a straight line (linear path) to compare each group. The difference between each group is called between-group (explained) variance while the residual differences within individual groups is known as within-group (error) variance. The change that occurs in each IV, based on the DV, is referred to as the main effect whereas the combined interactions of IVs on the DV is called the interaction effect. The distribution of variables along a vector is tested to observe the overall fit of the data using *F* statistics or an *F*-ratio. When measuring this variation, if between-group variance is larger than within-group variance, a statistically significant difference is found between the groups.

ANOVA Assumptions

To conduct an ANOVA, standard parametric procedures and assumptions must be accounted for and considered. By using three primary assumption criteria, researchers should ensure that their sample variables are appropriate for using the *F*-ratio statistic to measure variance. First, the DV should maintain normal distribution across each group or condition. ANOVAs are considered robust measures that are not strongly influenced by skewed data that can cause high or low tail distributions in a bell curve, referred to as high kurtosis (Salkind, 2010). However, platykurtic distributions, with thinner tails and a flattened top, can have significant effects on ANOVAs with small sample populations. Data used in the present study did not meet this assumption- details are provided in a section on Preliminary Analysis in Chapter 4.

Another assumption of ANOVA is that the samples have homogeneity of variance. Without ensuring consistent variation across groups, an ANOVA may result in inflated error

measures. Data used in the present study did not meet this assumption- further details are provided in a section on Preliminary Analysis in Chapter 4.

Lastly, observed measures should be independent of each other (from separate groups or entities) and sampled randomly. In a repeated-measures design, however, this assumption of independence is not maintained, resulting in further assumptions (Salkind, 2007). Rather than homogeneity of variance, in a repeated-measures design, the requirement of variation in groups to be similar (not statistically significant) is called sphericity. In select study designs, nonparametric tests or transformations to data can be used to adjust for violations to these assumptions. The present study relied solely on cases and questions with independent data.

Measuring Normality. The assumption of normality seeks to ensure that data consists of a normal distribution in the shape of a classic bell curve (Salkind, 2010). The present study employed three methods to analyze normality across group levels, analyzing skewness and kurtosis values, using the Kolmogorov-Smirnov (K-S) test of normality ($\alpha = .05$), and visual analysis of histogram graphs.

According to Muthén and Kaplan (1992), normality can be assessed according to the absolute value of one guideline, in which skewness and kurtosis scores within a range of +1.00 and -1.00 can be assumed to be evenly distributed. When using large sample sizes, recommendations also include the K-S test of normality (Orcan, 2020). A significant K-S test result ($p = <.05$) implies that the groups were not normally distributed. Lastly, a visual analysis of histogram graphs using bar charts to demonstrate data distribution is an effective and simple way to confirm the distribution of variables (Salkind, 2010).

Measuring Homogeneity of Variance. When comparing groups or multiple levels within a group, having relatively similar distributions of variance presents another important

assumption. This assumption compares whether the existing variance across groups was greater than that expected by chance (Lewis-Beck et al., 2004). Not meeting this assumption can lead to serious violations to parametric analyses and resulting p values (Salkind, 2010). A significant result from Levene's test of homogeneity of variance ($p = <.05$) was used as an indication for significant variance across groups.

Kruskal Wallis H Test

The K-W test is a nonparametric statistical procedure to substitute a one-way ANOVA if assumptions of group normality were violated (Salkind, 2010). Instead of an F statistic, this process identifies the *median* average of each group and compares for statistically significant differences. Rather than using their actual value, the *H* test ranks each variable in order to compare their relative values; this outcome is often referred to as a one-way ANOVA on ranks. Further comparison of the *H* statistic relies on Chi-square analyses to determine statistical significance across the group median rankings. Due to the K-W test being an omnibus test, subsequent pairwise comparisons are a critical aspect of the analysis that otherwise would not indicate which groups are significantly different from one another (Allen, 2017).

Kruskal Wallis Assumptions

A common assumption for this analysis includes the presence of one IV with three or more levels or conditions. Further, IVs in the analysis should remain independent from one another in the sample, and the DV should remain continuous (Allen, 2017). The Mann Whitney U test would analyze independent samples with IVs consisting of only two levels or conditions. Paired samples would use the Wilcoxon signed rank test (Salkind, 2010).

Kruskal Wallis Effect Size Calculations

Traditional measures for effect size (e.g., Cohen's *d*) often rely on the assumptions of normality and homogeneity for its results to maintain validity (Johnston et al., 2004). Considering the heterogeneity in the present sample's groups, Glass' Δ (*Delta*) was calculated for comparing the association between groups following the K-W test. This effect size measure uses the standard deviation from a control group to calculate standardized mean differences to account for what variance may be presented due to the lack of homogeneity (Salkind, 2007 & 2010). Traditional interpretation for the outcomes of effect size described .2 as a small effect, .5 as a medium effect, and .8 as a large effect (Cohen, 1988).

Research Questions, Hypotheses, and Analysis Plans

Research Question 1: *How do school attendance items from the current dataset compare to prevalence outcomes using other large datasets?*

Research Question 1 Variables

Questions 19 and 21 from the CHKS-SCM were used to establish school attendance prevalence. Question 19 (*In the past 30 days, how often did you miss an entire day of school for any reason?*) includes four levels based on the possible responses (*did not miss any days of school*, *1 day*, *2 days*, *3 or more days*). Question 21 (*During the past 12 months, about how many times did you skip school or cut classes?*) includes seven levels based on the possible responses (*0 times*, *1-2 times*, *a few times*, *once a month*, *twice a month*, *once a week*, *more than once a week*).

Research Question 1 Analysis Plan

Data were split into files based on Questions 19 and 21, separately. Descriptive statistics were generated for frequency distributions for each of these groups and provided in separate

tables. Percentages demonstrated the amount of school students reported missing based on Questions 19 and 21. Then, these percentages and descriptive findings were compared to other outcomes from studies of school attendance to determine if the CHKS-SCM resembled findings from other studies based on large survey datasets.

Research Questions 2a-2d: *Are student self-reports of attendance consistent across demographic items?*

Research Question 2 Analysis Plan

To understand the relationship between attendance and demographic backgrounds, Chi-square tests for independence analyzed select demographic items and Questions 19 and 21 on attendance from the CHKS-SCM. This procedure compared actual, or observed, scores from each group with expected values from groups if there was no association between them. A resulting significant difference would imply some level of association between the groups. This preliminary analysis acknowledged whether a significant relationship existed between attendance and select demographic factors. However, this analysis did not provide information regarding the direction of this relationship. Further analysis used effect size calculations and descriptive statistics to determine these outcomes.

Research Question 2a: *Are significant differences observed in attendance groups based on grade level?*

Research Question 2a Variables

The IV in this analysis included a demographic question regarding student grade levels from the CHKS-SCM. Responses to this item included grades 7 through 12. Questions 19 and 21 from the CHKS-SCM measured attendance as DVs in this analysis, separately.

Research Question 2a Analysis Plan

Descriptive statistics provided frequency distributions for students' grade levels and attendance (based on Questions 19 and 21, separately). Crosstabulation tables and Chi-square tests analyzed these groups to determine if a significant association existed between attendance and grade levels. Effect size calculations and descriptive statistics further analyzed these results.

Research Question 2b: *Are significant differences observed in attendance groups based on gender or sexual orientation?*

Research Question 2b Variables

The IV in this analysis included demographic questions from the CHKS-SCM regarding students' gender and sexual identity. A select question for gender included responses for *male* and *female*. A separate question for transgender students allowed for responses *no, I am not transgender*; *yes, I am transgender*; *I am not sure if I am transgender*; *and students who declined to respond.*, These questions were analyzed separately to maintain independent case selection. Further, a question regarding sexual orientation included responses for *straight* (*not gay*), *gay or lesbian*, *bisexual*, *I am not sure*, *something else*, and *decline to respond*. Questions 19 and 21 from the CHKS-SCM measured attendance as DVs in this analysis, separately.

Research Question 2b Analysis Plan

Descriptive statistics provided frequency distributions for students' gender, sexual orientation, and attendance (based on Questions 19 and 21, separately). Using Chi-square tests, crosstabulation tables analyzed groups to determine if a significant association existed between attendance and gender or sexual orientation. Effect size calculations and descriptive statistics further analyzed these results.

Research Question 2c: *Are significant differences observed in attendance groups based on student race/ethnicity?*

Research Question 2c Variables

The IV in this analysis included demographic questions regarding race/ethnicity from the CHKS-SCM. An initial question allowed students to answer *yes*/*no* to having Latinx or Hispanic origins. Additionally, a separate question allowed students to select their race/ethnicity (American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Pacific Islander, White, or Mixed [two or more races]). These questions were each used, separately, to indicate race/ethnicity and maintain independent cases (students responding *yes* to being Hispanic/Latinx also frequently respond with *Mixed (two or more races)* as their race/ethnicity). Questions 19 and 21 from the CHKS-SCM measured attendance as a DV in this analysis, separately.

Research Question 2c Analysis Plan

Descriptive statistics provided frequency distributions for students' race/ethnicity and attendance (based on Questions 19 and 21, separately). Chi-square tests analyzed these groups in cross-tabulation tables to determine if a significant association existed between attendance and race/ethnicity. Effect size calculations and descriptive statistics further analyzed these results.

Research Question 2d: *Are significant differences observed in attendance groups based on socioeconomic status?*

Research Question 2d Variables

The IV in this analysis included demographic questions serving as socioeconomic indicators from the CHKS-SCM. To fully consider socioeconomic status (SES), responses were from questions about parent education (*did not finish high school*, *graduated from high school*,

attended college but did not finish, and *graduated from college*) and student eligibility for free or reduced-price lunch (*yes* or *no*) were selected. Students who responded *don't know* to either question were excluded from the analysis. Questions 19 and 21 from the CHKS-SCM measured attendance as a DV in this analysis, separately.

Research Question 2d Analysis Plan

Descriptive statistics provided frequency distributions for students' eligibility for free or reduced-price lunch, parent education level, and attendance (based on Questions 19 and 21, separately). Chi-square tests analyze groups using cross-tabulation tables to determine if a significant association existed between attendance and factors related to SES. Effect size calculations and descriptive statistics further analyzed these results.

Research Question 3a: *Are there differences in self-reported subjective well-being measures (i.e., Social-Emotional Health Survey-Secondary [SEHS-S]) across students based on the amount of school they reported missing in the past 30 days (i.e., Question 19)?*

Research Question 3a Variables

Responses for Question 19 from the CHKS-SCM (*0 days*, *1 day*, *2 days*, *3 or more days*) will be used as groups to analyze differences in scores from the SEHS-S.

Research Question 3a Analysis Plan

Differences in scores from the SEHS-S across levels, or responses, from Question 29 from the CHKS-SCM were analyzed using the nonparametric K-W test. Group ranking and pairwise comparison for each group's median score were analyzed to detect significant differences between groups ($\alpha = .05$). Lastly, effect sizes were computed using Glass' Δ to analyze the magnitude of difference between each group.

Research Question 3b: *Are there differences in self-reported subjective well-being measures (i.e., SEHS-S) across students based on the amount of school they reported skipping or cutting in the past 12 months (i.e., Question 21)?*

Research Question 3b Variables

Responses for Question 21 from the CHKS-SCM (*0 times*, *1-2 times*, *a few times*, *once a month*, *twice a month*, *once a week*, *more than once a week*) were used as groups to analyze differences in scores from the SEHS-S.

Research Question 3b Analysis Plan

The nonparametric K-W test analyzed differences in scores from the SEHS-S across or responses from Question 21. Group ranking and pairwise comparisons of each group's median score were analyzed to detect significant differences between each group ($\alpha = .05$). Lastly, effect sizes were computed using Glass' Δ to analyze the magnitude of differences between each group.

Research Question 4a: *Are there differences in self-reported psychological distress measures (i.e., Social-Emotional Distress Scale-Secondary [SEDS-S]) across students based on the amount of school they reported missing in the past 30 days (i.e., Question 219)?*

Research Question 4a Variables

Responses for Question 19 from the CHKS-SCM (*0 days*, *1 day*, *2 days*, *3 or more days*) were used as groups to analyze differences in scores from the SEDS-S.

Research Question 4a Analysis Plan

The nonparametric K-W test was used to analyze differences in scores on the SEDS-S across responses from Question 19. Rank order for roup median scores and pairwise comparisons were analyzed to identify significant differences between each group ($\alpha = .05$). Lastly, Glass' Δ was computed to gather effect size calculations to analyze the magnitude of these differences.

Research Question 4b: *Are there differences in self-reported psychological distress measures (i.e., SEDS-S) across students based on the amount of school they reported skipping or cutting in the past 12 months (i.e., Question 21)?*

Research Question 4b Variables

Responses for Question 21 from the CHKS-SCM (*0 times*, *1-2 times*, *a few times*, *once a month*, *twice a month*, *once a week*, *more than once a week*) were used as groups to analyze differences in scores from the SEDS-S.

Research Question 4b Analysis Plan

The nonparametric K-W test analyzed differences in SEDS-S scores for groups of students based on Question 21. Rank order and pairwise comparisons were used to detect significant differences between each group ($\alpha = .05$). Lastly, effect size calculations were computed for Glass's Δ to analyze the magnitude of these outcomes.

Research Question 5: *Using groups (a) Complete Mental Health, (b) Symptomatic but Content, (c) Vulnerable, and (d) Troubled from a dual-factor model approach, what percentage of students from each group presented with potential SRB?*

Research Question 5 Variables

Raw scores from the SEHS-S and SEDS-S were converted into Average Item Response (AIR) scores by calculating overall mean scores (Furlong et al., 2020). For the SEHS-S, three subdomains (with three questions each) for each domain (belief-in-self, belief-in-others, emotional competence, engaged living) were added together and divided by nine, separately, to obtain AIR scores. Then, each domain's AIR score was added together and divided by four to gain the final SEHS-S covitality AIR score. The SEDS-S AIR score involved adding all ten items together and dividing by ten for its total AIR score.

Furlong and colleagues (2020) have provided interpretive ranges with standard deviations for the AIR scores on the SEHS-S such that 1.0-2.2 are low, 2.3-3.5 are average (16-84%), and 3.6-4.0 are high. Similarly, ranges for the SEDS-S include 1.0-1.9 as low, 2.0-3.0 as average (16-84%), and 3.1-4.0 as high (Furlong et al., 2020). Students were placed in respective groups based on their AIR score on the SEHS-S and SEDS-S- consistent with Suldo and Shaffer's (2008) dual-factor approach. Groups included Complete Mental Health (average to high subjective well-being and low psychopathology), Symptomatic but Content (average to high subjective well-being and high psychopathology), Vulnerable (low subjective well-being and low psychopathology), and Troubled (low subjective well-being and high psychopathology). Attendance questions 19 and 21 from the CHKS-SCM were used to measure attendance as a DV in this analysis.

Research Question 5 Analysis Plan

Cross-tabulation tables presented frequency distributions for each response to Questions 19 (missed *0 days*, *1 day*, *2 days*, or *3 or more days* in the past 30 days) and 21 (skipped *0 times*, *1-2 times*, *a few times*, *once a month*, *twice a month*, *once a week*, or *more than once a week* in the past 12 months) across the dual-factor groups (Complete Mental Health, Symptomatic but Content, Vulnerable, and Troubled). Descriptive statistics from these tables analyzed the distribution of students with SRB in groups based on the dual-factor model.

Summary

This study explored the differences in self-reported mental health measures for secondary students with different levels of absenteeism. Both subjective well-being and psychological distress were analyzed when measuring mental health to incorporate a dual-factor model perspective. To help understand the prevalence of SRB, the CHKS-SCM provided school-based

data using questions related to attendance. Also, analysis using demographic items compared the present dataset to other findings regarding contextual factors that influence SRB (i.e., student grade levels, gender, race/ethnicity, socioeconomic status).

The present study focused on understanding the changing mental health of students with SRB. The classification, identification, and assessment of these students require a better understanding of their mental health changes as they miss or skip more school. The CHKS provided data readily available to most California schools and encouraged the use of school-based data to inform practical implications and research. This topic has lacked school-based informants and has previously relied primarily on clinical settings.

Chapter 4: Results

In the following sections, the analysis plans from Chapter 3 were conducted and outlined. First, descriptive statistics were reviewed for each demographic item and both the SEHS-S and SEDS-S. Additionally, preliminary tests were conducted to determine if necessary parametric assumptions were met. Due to the violation of these assumptions, nonparametric tests were utilized throughout the analysis. Each research question has a primary analysis section with results presented for each question consecutively.

Preliminary Analysis

Research Question 1 involved an initial review of prevalence data compared with separate, prior studies. Research Questions 2a-2d analyzed the association between attendance and select demographic items. Chi-square tests detected if a significant relationship was present. For Research Questions 3 and 4, this study compared groups of students based on their attendance and mental health using Kruskal Wallis *H* tests. This process compared measures outcomes from subjective well-being and psychological distress separately to determine if there was a difference in students with higher levels of absenteeism. Finally, an analysis of descriptive statistics for the dual-factor model groups based on students' mental health revealed what percentage of vulnerable (at-risk) and troubled youth presented with potential SRB struggles. Chi-square tests determined if a significant relationship existed between students' absenteeism and the dual-factor model groups.

Descriptive Statistics

Overall demographic items are reviewed from the CHKS-SCM to help understand the sample of students in the present dataset. The current data consists of responses from 107,125 students in grades 7-12 from 249 secondary schools across California from the 2017-18 and

2018-19 school years. Overall, this sample consisted of 51.4% females, 48.1% Hispanic/Latinx, 46.8% students with parents who graduated with a college degree, and 40.4% students eligible for free or reduced-price lunch at school. Table 1 provides further demographic details alongside mean scores from the SEHS-S and SEDS-S. The SEHS-S includes scores from 36-144, and the SEDS-S has a range from 10-40. Missing responses may cause some variation in frequency outcomes (*n*) for the SEHS-S and SEDS-S outcomes.

Table 1

Demographic Information and Corresponding SEHS-S and SEDS-S Mean Scores

Demographic Items		*n* (%)	SEHS-S Mean Score (*n*)	SEHS-S Std. Deviation	SEDS-S Mean Score (*n*)	SEDS-S Std. Deviation
Grades						
	Seventh	27786 (25.9%)	109.72 (23653)	21.07	18.49 (26402)	8.09
	Eighth	5710 (5.3%)	106.75 (4969)	21.78	19.28 (5450)	8.47
	Ninth	29635 (27.7%)	105.06 (25957)	21.38	20.12 (28470)	8.72
	Tenth	10529 (9.8%)	104.04 (9392)	20.55	20.81 (10177)	8.80
	Eleventh	25112 (23.4%)	104.61 (22579)	20.22	21.16 (24302)	8.81
	Twelfth	8353 (7.8%)	105.71 (7584)	19.93	20.90 (8096)	8.59
Gender						
	Male	51320 (48.6%)	106.53 (45109)	21.42	17.78 (49366)	7.72
	Female	54214 (51.4%)	105.86 (47713)	20.47	22.16 (52029)	8.10

Demographic Items	*n* (%)	SEHS-S Mean Score (*n*)	SEHS-S Std. Deviation	SEDS-S Mean Score (*n*)	SEDS-S Std. Deviation
Transgender					
Not transgender	98261 (95.3%)	106.64 (86614)	20.64	19.89 (94457)	8.55
Transgender	758 (0.7%)	87.35 (633)	23.52	27.63 (726)	10.08
I am not sure if I am transgender	1552 (1.5%)	94.83 (1328)	22.22	25.13 (1486)	9.45
Declined to respond	2530 (2.5%)	98.62 (2110)	24.70	20.72 (2403)	9.20
Race/Ethnicity					
Hispanic/Latinx	51205 (48.1%)	104.47 (44083)	21.39	19.68 (48790)	8.54
Non-Hispanic/Latinx	55155 (51.9%)	107.67 (49460)	20.44	20.38 (53414)	8.71
American Indian or Alaska Native	3072 (3.1%)	104.27 (2600)	22.73	19.26 (2926)	8.59
Asian	14593 (14.8%)	106.63 (13210)	19.85	19.9 (14154)	8.22
Black or African American	2966 (3.0%)	106.10 (2484)	23.45	19.14 (2804)	8.52
Native Hawaiian or Pacific Islander	1474 (1.5%)	106.53 (1283)	21.02	20.97 (1415)	8.69
White	34101 (34.6%)	108.02 (30652)	20.38	20.59 (33026)	8.85
Mixed (two or more) Races	42461 (43.0%)	104.95 (36708)	21.51	19.78 (40572)	8.63
Highest Level of Education for Parents or Guardians [a]					
Did not finish high school	12517 (11.7%)	101.62 (10690)	21.42	20.12 (11878)	8.57
Graduated from high school	14773 (13.8%)	103.79 (12764)	21.68	20.10 (14141)	8.73

Demographic Items	*n* (%)	SEHS-S Mean Score (*n*)	SEHS-S Std. Deviation	SEDS-S Mean Score (*n*)	SEDS-S Std. Deviation
Attended college but did not complete a four-year degree	12810 (12.0%)	105.33 (11266)	20.48	21.17 (12300)	8.94
Graduated college	49950 (46.8%)	109.05 (45097)	19.90	20.26 (48400)	8.67
Eligible for Free or Reduced-price Lunch [a]					
Yes/Eligible	43024 (40.4%)	104.37 (36991)	21.48	19.67 (41043)	8.55
No/Ineligible	50090 (47.0%)	107.96 (45031)	20.15	20.52 (48525)	8.75

[a] Students responding *don't know* were excluded from analysis

Testing for Parametric Assumptions

An ANOVA is traditionally used to compare groups to determine if a significant difference exists. However, this type of parametric analysis must maintain certain assumptions. To conduct an ANOVA, the dependent variable(s) (i.e., subjective well-being and psychological distress) must remain normally distributed across each level of the independent variable group (i.e., absenteeism). The present study used measures of skewness and kurtosis, the Kolmogorov-Smirnov (K-S) test of normality, and observations of histogram tables to determine if normality was present. Levene's test analyzed variance across each group to decide if they were significantly different when measuring homogeneity.

SEHS-S Scores for Question 19 Responses

Frequency distributions for Question 19 (n = 93,761), based on responses from the SEHS-S, are presented with skewness and kurtosis outcomes in Appendix F. Outcomes for skewness and kurtosis for each group level complied with the absolute value of one guideline

and are within a range of +1.00 to -1.00. An appropriately shaped bell curve demonstrated a normal distribution. However, each group of responses for Question 19 showed significance (p = <.001) at a .05 alpha level on the K-S test of normality- despite Lilliefors Significance Correction. These results suggested that the distribution of each group of responses may be significantly different than the other. Histogram charts further examined the distribution of each group of responses to Question 19 and responses from the SEHS-S. Despite some skewness, these histograms supported a normal distribution. Each histogram chart is included in Appendix F.

When testing the assumption for homogeneity of variance across each level of Question 19, Levene's test resulted in significant findings at a $p < .05$ level: $F(3, 93{,}757) = 32.24$, p = <.001. Significant findings continued to result when comparing covariance across each level based on median and adjusted or trimmed median and means, respectively. Consequently, the assumption of homogeneity was unmet, and alternative, nonparametric tests were conducted to measure the difference between students' scores on the SEHS-S based on Question 19.

SEHS-S Scores for Question 21 Responses

Frequency distributions for Question 21 (n = 93,941), based on responses from the SEHS-S, were presented with skewness and kurtosis outcomes in Appendix G. Outcomes for skewness and kurtosis for each group level complied with the absolute value of one guideline and were within a range of +1.00 to -1.00. Results supported an appropriate bell-shaped, normal distribution. However, each group of responses to Question 21, except for students reporting *once a week* (p = .11), showed significance (p = <.001) at a .05 alpha level on the K-S test of normality- despite Lilliefors Significance Correction. These findings suggested that the distribution of each group of responses was significantly different than the other. Histogram

charts provided a further examination of the distribution for groups of responses to Question 21 and responses from the SEHS-S. Each histogram chart is included in Appendix G. A normal distribution was supported despite some skewness. Sample sizes became drastically smaller for students who reported skipping school more than *once a month* (refer to frequency distribution table in Appendix G for further details).

When testing the assumption for homogeneity of variance across each level of Question 21, Levene's test resulted in significant findings at a $p < .05$ level: $F(6, 93{,}934) = 11.74$, $p = <.001$. Significant findings continued to result when comparing covariance across each level based on median and adjusted or trimmed median and means, respectively. Consequently, the assumption of homogeneity was unmet.

SEDS-S Scores for Question 19 Responses

Frequency distributions for Question 19 ($n = 102{,}459$), based on responses from the SEDS-S, were presented with skewness and kurtosis outcomes in Appendix H. Outcomes for skewness and kurtosis for each group level complied with the absolute value of one guideline and were within a range of +1.00 to -1.00. However, skewness and kurtosis levels for the SEDS-S appeared to be much greater than the distribution for scores from the SEHS-S. Findings supported an appropriate bell-shaped, normal distribution. Each group of responses to Question 19 showed significance ($p = .000$) at a .05 alpha level on the K-S test of normality- despite Lilliefors Significance Correction. These results suggested that the distribution for each group of responses was significantly different than the other. Histogram charts further examined the distribution for each group of responses to Question 19 and responses from the SEHS-S. Each histogram chart is included in Appendix H. Skewness was visibly apparent, particularly for students who responded they missed *0 days*. A flat-topped bell curve appeared throughout each

group level. These observations, coupled with relatively increased skewness and kurtosis scores and significant results from the K-S tests, did not support a normal distribution.

When testing the assumption for homogeneity of variance across each level of Question 19, Levene's test resulted in significant findings at a $p < .05$ level: $F(3, 102{,}455) = 195.73$, $p = <.001$. Significant findings continued to result when comparing covariance across each level based on median and adjusted or trimmed median and means, respectively. Consequently, the assumption of homogeneity was unmet.

SEDS-S Scores for Question 21 Responses

Frequency distributions for Question 21 ($n = 102{,}662$), based on responses from the SEDS-S, were presented with skewness and kurtosis outcomes in Appendix I. Outcomes for skewness and kurtosis for each group level did not comply with the absolute value of one guideline due to select responses to Question 21 presenting high, negative kurtosis scores (*once a month*, *twice a month*, *once a week*, and *more than once a week*). Further signs of uneven distributions were significant ($p < .05$) for each group of responses on the K-S test of normality. Additional analysis of normal distribution relied on histogram charts provided in Appendix I. Sample sizes became drastically smaller for students with responses *once a month, twice a month, once a week, more than once a week* (refer to frequency distribution table in Appendix I for further details). Skewness for students who responded *0 times* is visibly apparent. The following group levels maintained a flat-topped distribution emphasized by the negative kurtosis scores greater than -1.00. Based on the observation of these charts, in addition to increased kurtosis scores and significant results from the K-S test, assumptions for normality do not appear to be supported.

Levene's test resulted in significant findings at a $p < .05$ level: $F(6, 102{,}655) = 44.39$, $p = <.001$ when testing for the assumption of homogeneity of variance for responses to Question 21,. Significant findings continued to result when comparing covariance across each level based on median and adjusted or trimmed median and means, respectively. Consequently, the assumption of homogeneity was unmet.

Internal Consistency Reliability for the SEHS-S and SEDS-S

Scores on both the SEHS-S and SEDS-S demonstrated unequal variance across Questions 19 and 21. These findings were unsurprising considering the heterogeneity consistent with SRB. Unfortunately, this prevented parametric analysis from being used, as well as further posthoc tests. However, the reliability of scores from both screeners demonstrated exceptionally strong internal consistency based on Cronbach's alpha. This analysis, presented in Table 2, suggested that both the SEHS-S and SEDS-S, separately, had consistent measures even as students reported missing or skipping school more frequently. Together, the SEHS-S and SEDS-S provided a comprehensive approach to measuring subjective well-being and psychological distress in students with SRB.

Table 2

Internal Consistency for SEHS-S and SEDS-S Scores across Questions 19 and 21

Question 19: In the past 30 days, how often did you miss an entire day of school for any reason?	SEHS-S Cronbach's Alpha	SEDS-S Cronbach's Alpha
0 days	.953	.934
1 day	.952	.936
2 days	.950	.939
3 or more days	.952	.940

Table continued…

Question 21: During the past 12 months, about how many times did you skip school or cut classes?	SEHS-S Cronbach's Alpha	SEDS-S Cronbach's Alpha
0 times	.952	.936
1-2 times	.951	.936
A few times	.950	.936
Once a month	.950	.945
Twice a month	.949	.940
Once a week	.943	.945
More than once a week	.953	.948

Primary Analysis

Research Question 1: *How do school attendance items in the current data compare to prevalence outcomes using other large datasets?*

Analysis Results

Table 3 below shows the frequency distribution of data for Question 19 (n = 106,651) and Question 21 (n = 106,857) from the CHKS-SCM. These included students who reported *missing* an entire day(s) of school in the past 30 days (Question 19) and those who reported *skipping* or *cutting* school in the past 12 months (Question 21). Nearly half (48%) of the sample from Question 19 reported missing *0 days* of school in the past 30 days. Students reporting to have missed *3 or more days*, 13.5%, pose the risk of missing approximately 15% of the available school days and demonstrated a pattern indicative of SRB.

On the other hand, even more students (74.7%) from Question 21 reported having skipped or cut school *0 times* over the past 12 months, while 12.2% reported skipping *1-2 times* and 8.3% reported skipping only *a few times*. After excluding students who reported skipping *0*, *1-2*, and *a few times* on Question 21, the remaining responses from students who reported skipping more frequently (*once a month*, *twice a month*, *once a week*, and *more than once a*

week) represented 4.5% of the sample. Students who reported skipping or cutting school more than once a month (i.e., *twice a month, once a week,* or *more than once a week*, 3.6%) had the potential of skipping between 11% and approximately >40% of available school- assuming entire days of school were being skipped or cut. These responses represented students with potential patterns of risk for SRB.

Table 3

Frequency Distribution for Attendance Questions 19 and 21

Question 19: In the past 30 days, how often did you miss an entire day of school for any reason?	*n*	%
0 days	51420	48.0
1 day	24534	22.9
2 days	16279	15.2
3 days or more	14418	13.5
Total	106651	99.6
Question 21: During the past 12 months, about how many times did you skip school or cut classes?	*n*	%
0 times	80017	74.7
1-2 times	13017	12.2
A few times	8870	8.3
Once a month	977	0.9
Twice a month	1335	1.2
Once a week	908	0.8
More than once a week	1733	1.6
Total	106857	99.7

Based on responses from Questions 19 and 21 from the CHKS-SCM, groups of students who reported missing *3 or more days* in the past 30 days (13.5%) or skipping or cutting *twice a*

month, *once a week*, and *more than once a week* (4.5%), presented with the potential to miss approximately 15% or between 11-40% of available school, respectively. This spectrum of absence was similar to, yet, more narrowed than the 5-28% prevalence findings commonly cited for SRB (Heyne et al., 2019; Kearney, 2001; Lyon & Cotler, 2007).

Research Question 2: *Do student reports of attendance have a significant relationship with demographic variables?*

Research Question 2a: *Is there a significant relationship between attendance and grade level?*

Analysis Results

Cross-tabulation tables with frequency data for student grade levels and responses to attendance Questions 19 and 21 are provided in Appendix J. Based on this data, students who reported missing *3 or more days* of school in the past 30 days increased with each grade level (grade 7 = 11.7%; grade 8 = 12.5%; grade 9 = 12.6%; grade 10 = 13.8%; grade 11 = 15.2%; grade 12 = 17.9%). A similar trend was witnessed with more students from higher grade levels reporting to skip school or cut class more frequently in the past 12 months (e.g., reports of skipping school or cutting class for twice a month and more [*twice a month*, *once a week*, and *more than once a week*] increased with each grade level: grade 7 = 1.6%; grade 8 = 1.8%; grade 9 = 2.9%; grade 10 = 3.9%; grade 11 = 5.7%; and grade 12 = 8.2%).

To analyze the association between grade levels and self-reported attendance for Question 19, a Chi-square test for independence was used to compare observed results to expected groups with no association; significant results suggest an association exists between the items. Results from this Chi-square analysis indicated a significant association between grade levels and attendance responses for Question 19, χ^2 (15, n = 106,651) = 997.340, p = <.001, Cramer's V = .056. When analyzing the association between grade levels and self-reported

attendance for Question 21, similar results were found, χ^2 (30, n = 106,857) = 2,824.578, p = .000, Cramer's V = .073. Overall, little statistical effect size was found, although Question 21 indicated a relatively greater magnitude of effect between grade levels and students who reported skipping or cutting school in the past 12 months.

Research Question 2b: *Is there a significant association between attendance and gender or sexual orientation?*

Analysis Results

Cross-tabulation tables with frequency data for students' gender and responses to attendance Questions 19 and 21 are provided in Appendix K. Based on self-reported attendance data from Question 19, female students reported higher rates of missing *3 or more days* of school in the past 30 days (15.1%) than males (11.8%). Similarly, reports of skipping school or cutting class in the past 12 months indicated slightly higher reports from females across all responses (*1-2 times*, *a few times*, *twice a month*, *once a week*, and *more than once a week*) except for students reporting *once a month* (0.9% of both males and females). Further, 21.3% of students who identified as transgender reported missing *3 or more days* of school as compared to students who reported *no, I am not transgender* (13.2%), *I am not sure if I am transgender* (15.6%), or those who declined to respond (15.3%). This trend continued to be observed in Question 21 by transgender students reporting higher rates of skipping or cutting school across each response level when compared to other response options.

Cross-tabulation tables for sexual orientation (*straight* [*not gay*], *gay or lesbian*, *bisexual*, *I am not sure*, *something else*, and *decline to respond*) and responses to Questions 19 and 21, separately, are provided in Appendix K. Based on this data, *gay or lesbian* (18.4%) and *bisexual* (18.4%) students presented the highest frequency in Question 19 for missing *3 or more days* of

school in the past 30 days. Students who reported *straight (not gay)* (12.9%) or *decline to respond* (12.9%) represented the lowest frequency. Based on responses from Question 21, a similar trend continued with *gay or lesbian* and *bisexual* students giving higher reports of skipping school or cutting class more often than other sexual orientation responses.

To analyze the association between gender or sexual orientation and self-reported attendance from Questions 19 and 21, Chi-square tests for independence were used to compare observed results to groups with no expected association. Significant results suggest some association between the items. Results from a Chi-square analysis indicated significant association existed between gender and attendance responses for Question 19, χ^2 (3, n = 105,074) = 632.676, p = <.001, Cramer's V = .078. When analyzing the association between gender and self-reported attendance for Question 21, similar results were found, χ^2 (6, n = 105,274) = 55.949, p = <.001, Cramer's V = .023. Small effect sizes were calculated for both questions. Similarly, significant results were found across Questions 19 (χ^2 [9, n = 102,673] = 99.06, p = <.001, Cramer's V = .018) and 21 (χ^2 [18, n = 102,853] = 154.46, p = <.001, Cramer's V = .022) for items related to transgender identification (*no, I am not transgender*; *yes, I am transgender*; *I am not sure if I am transgender*; or *decline to respond*).

When analyzing the association between sexual orientation and self-reported attendance, Chi-square tests for independence were conducted again using responses to Questions 19 and 21. Results from these Chi-square analyses indicated a significant association between sexual orientation and attendance responses for Question 19, χ^2 (15, n = 102,659) = 340.932, p = <.001, Cramer's V = .033, and Question 21, χ^2 (30, n = 102,840) = 420.411, p = <.001, Cramer's V = .029. These effect size outcomes were also small.

Research Question 2c: *Are significant differences observed in attendance groups based on student race/ethnicity?*

Analysis Results

Cross-tabulation tables with frequency data for students who did or did not identify as Hispanic/Latinx (*yes*/*no*) and responses to attendance Questions 19 and 21 are provided in Appendix L. Based on this data, Hispanic/Latinx students reported missing *3 or more days* of school more often (15%) than non-Hispanic/Latinx students (12.2%). This trend was consistent across each response option for Question 21, with Hispanic/Latinx students reporting to skip or cut school more often- with the exception of students reporting to skip *once a month* (equal representation of 0.9% for both Hispanic/Latinx and non-Hispanic/Latinx). To analyze the overall relationship between attendance and students identifying as Hispanic/Latinx or otherwise, Chi-square tests were conducted. Results from these analyses were significant for both Questions 19 (χ^2 [3, n = 105,902] = 410.35, p = <.001, Cramer's V = .062) and 21 (χ^2 [6, n = 106,103] = 413.57, p = <.001, Cramer's V = .062). Effect sizes for these analyses remained small.

Cross-tabulation tables with frequency data for students' race/ethnicity and responses to attendance Questions 19 and 21 are included in Appendix L. Based on this data, Asian students reported missing school *1 day*, *2 days*, or *3 or more days* less than any other race/ethnicity. American Indian or Alaska Native and Black or African American students equally represented reports for missing *3 or more days* of school (16.2%). Mixed (two or more) races and Native Hawaiian or Pacific Islander students were also equally represented and next likely to report missing *3 or more days* (15.2%). Nearly 14% of white students reported missing *3 or more days* of school. These trends remained consistent across responses for Question 21, regarding student reports of skipping or cutting school in the past 12 months.

To analyze the association between race/ethnicity and self-reported attendance for Questions 19 and 21, Chi-square tests for independence were used. Significant results suggest some association between the items. Results from these Chi-square analyses indicated a significant association between race/ethnicity and attendance responses for Question 19, χ^2 (15, n = 98,264) = 2339.61, p = .000, Cramer's V = .089 and Question 21, χ^2 (30, n = 98,443) = 446.30, p = <.001, Cramer's V = .03. Again, these effect sizes remained small; however, compared to the other analyses of demographic factors, students' race/ethnicity and reports of missing school in the past 30 days had the largest relative effect size.

Research Question 2d: Is there a significant association between attendance and socioeconomic status?

Analysis Results

Cross-tabulation tables with frequency data for parent education levels and responses to attendance Questions 19 and 21 are included in Appendix M. Based on this data, an increase was observed in reports for missing *3 or more days* of school in the past 30 days as parent education decreased (*did not finish high school* [16.6%], *graduated from high school* [16.1%], *attended college bud did not complete a four-year degree* [16%], *graduated from college* [11.2%]). Analysis of data for Question 21 resulted in similar outcomes regarding skipping or cutting school in the past 12 months. These reports indicated students whose parents graduated from college skipped school less frequently than all other parent education groups (*did not finish high school*, *graduated from high school*, and *attended college but did not complete a four-year degree*) across each response option (*0 times*, *1-2 times*, *a few times*, *once a month*, *twice a month*, *once a week*, and *more than once a week*).

To analyze the association between parent education levels and attendance using Questions 19 and 21, Chi-square tests for independence were used. Results from this analysis indicated a significant association between parent education levels and student self-reported attendance from Question 19, χ^2 (12, n = 106,222) = 976.361, p = <.001, Cramer's V = .055 and Question 21, χ^2 (24, n = 106,422) = 999.584, p = <.001, Cramer's V = .048. Similar to previous results, effect size calculations demonstrated small statistical magnitude regarding the relationship between parent education level and student attendance.

Using cross-tabulation tables, frequency data for students' eligibility for free or reduced-price lunch (*yes* or *no*) and attendance Questions 19 and 21 are provided in Appendix M. Based on this data, a higher percentage of students who qualified for free and reduced-price lunches (15.2%) reported missing *3 or more days* of school in the past 30 days than students who were not eligible (12%). Similar results were found for Question 21, indicating that students eligible for free or reduced-price lunch more often reported skipping school *1-2 times*, *a few times*, *once a week*, and *more than once a week*.

To analyze the association between students eligible for free and reduced-price lunch and their self-reported attendance, Chi-square tests for independence were used to compare observed results to groups with no expected association. Significant results suggest an association between the items. Results from this Chi-square analysis indicated a significant association between eligibility for free or reduced-price lunch and attendance responses for Question 19, χ^2 (3, n = 92,746) = 301.922, p = <.001, Cramer's V = .057. When analyzing the association between eligibility for free or reduced-price lunch and self-reported attendance for Question 21, similar results were found, χ^2 (6, n = 92,907) = 298.268, p = <.001, Cramer's V = .057. These effect size calculations, similar to each other demographic factor, remained statistically small.

Research Question 3a: *Are there differences in self-reported subjective well-being measures (i.e., Social-Emotional Health Survey-Secondary [SEHS-S]) across students based on the amount of school they reported missing in the past 30 days (i.e., Question 19)?*

Analysis Results

Mean scores from the SEHS-S are provided in Table 4 in groups based on student responses to Question 19. An apparent decrease was evident in the subjective well-being of students who reported missing more school in the past 30 days. When converted to Average Item Response (AIR) scores (Furlong et al., 2020), SEHS-S results for students who reported missing *3 or more days* of school remained in the average range. However, these students' scores were clearly lower than students who missed less school and demonstrated a growing standard deviation in their scores. The nonparametric K-W test analyzed scores on the SEHS-S based on the amount of absenteeism reported on Question 21 to determine if a significant difference existed between scores. The following nonparametric tests relied on median score comparisons; however, Table 4 presented mean scores to indicate the change in overall scores for each response to Question 19.

Table 4

SEHS-S Mean Scores for Question 19 Responses

Question 19: In the past 30 days, how often did you miss an entire day of school for any reason?	*n*	Mean SEHS-S Scores	Std. Deviation
0 days	45509	108.08	20.60
1 day	21669	106.47	20.55
2 days	14155	104.32	20.71
3 or more days	12428	100.72	22.03

Results from the K-W test indicated a statistically significant difference in measures of subjective well-being (SEHS-S) across the four responses to Question 19, such that χ^2 (3, n = 93,761) = 1,261.34, p = .000 (see Table 4 above for frequency distributions across each group level). Pairwise comparisons demonstrated in Table 5 revealed that SEHS-S scores are significantly different across each response to Question 19 and decrease as students missed more school. Additionally, effect size calculations were calculated to establish which group comparisons demonstrated significance and to what extent. Effect sizes for each group comparison further established a growing difference in SEHS-S scores as students reported missing more school. Using Glass' Δ, the magnitude of difference in SEHS-S scores between students who reported missing *0 days* compared to *3 or more days of school* was between a small and medium level of effect (Glass' Δ = .36).

Table 5

Pairwise Comparisons of SEHS-S Scores from Question 19 Responses

Question 19	Test Statistic	Std. Error	Std. Test Statistic	Adj. Sig. [a]	Glass' Δ Effect Size
0 days-1 day	2113.579	223.374	9.462	.000	.08
0 days-2 days	5012.219	260.460	19.244	.000	.18
0 days-3 or more days	9134.599	273.915	33.348	.000	.36
1 day-2 days	2898.640	292.483	9.910	.000	.11
1 day-3 or more days	7021.021	304.527	23.055	.000	.28
2 days-3 or more days	4122.381	332.686	12.391	.000	.17

Note. Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same; the significance level is .050.

[a.] Significance values have been adjusted by the Bonferroni correction for multiple tests

Research Question 3b: *Are there differences in self-reported subjective well-being measures (i.e., SEHS-S) across students based on the amount of school they reported skipping or class they were cutting in the past 12 months (Question 21)?*

Analysis Results

By comparing mean scores from the SEHS-S across student responses to Question 21, Table 6 presented a similar trend of decreased subjective well-being for students who reported skipping or cutting school more frequently in the past 12 months. When converted to Average Item Response (AIR) scores (Furlong et al., 2020), SEHS-S results for students who reported skipping or cutting school *more than once a week* remained in the average range. However, a trend of decreased subjective well-being presented in students who reported skipping or cutting more school. The nonparametric alternative K-W test was conducted to determine if there were significant differences between students' scores on the SEHS-S based on the amount of school they reported skipping for Question 21. Although the nonparametric tests used median scores for the SEHS-S, Table 6 provided mean scores to indicate the difference in overall scores as students reported skipping more school.

Table 6

SEHS-S Mean Scores for Question 21 Responses

Question 21: During the past 12 months, about how many times did you skip school or cut classes?		*n*	Mean SEHS-S Score	Std. Deviation
	0 times	70494	107.90	20.49
	1-2 times	11403	102.69	21.00

Question 21: During the past 12 months, about how many times did you skip school or cut classes?	*n*	Mean SEHS-S Score	Std. Deviation
A few times	7756	101.08	21.16
Once a month	840	99.58	21.89
Twice a month	1175	98.78	21.79
Once a week	798	97.09	21.03
More than once a week	1475	91.79	23.68

Results from the K-W test indicated a statistically significant difference in measures of subjective well-being (SEHS-S) across the seven response options for Question 21 regarding the amount of school students skipped or cut, such that, χ^2 (6, n = 93,941) = 2,174.15, p = .000 (see Table 6 above for frequency distributions for each response). Pairwise comparisons presented in Table 7 revealed that SEHS-S scores were significantly different for a majority of responses to Question 21. No significant difference was found in SEHS-S scores during pairwise comparisons for students who reported skipping *once a month* and *a few times* (p = 1.0); *twice a month* and *once a month* (p = 1.0); *once a week* and *once a month* (p = .143); and *once a week* and *twice a month* (p = 1.0). These findings suggested that the difference occurring in students' subjective well-being reached a plateau after skipping school more than *once a month*.

Glass' Δ effect size calculations indicated the magnitude of effect regarding the difference between SEHS-S scores and each group from the pairwise comparisons and were included in Table 7. The most substantial difference was approaching a large effect size (.79) when comparing SEHS-S scores for students who reported skipping or cutting *0 times* and those who reported *more than once a week.* Additional effect sizes between a small and medium level of effect occurred between students who reported skipping *0 times* and *once a month* (.41), *0 times* and *twice a month* (.45), and *0 times* and *once a week* (.53), *a few times,* and *more than once a week* (.44), and *1-2 times* and *more than once a week* (.52).

Table 7

Pairwise Comparison of SEHS-S Scores from Question 21 Responses

Question 21	Tests Statistic	Std. Error	Std. Test Statistic	Adj. Sig. [a]	Glass' Δ Effect Size
0 times-1-2 times	6779.521	273.696	24.770	.000	.25
0 times-A few times	8801.493	324.390	27.132	.000	.33
0 times-Once a month	10213.342	941.138	10.852	.000	.41
0 times-Twice a month	11429.210	797.611	14.329	.000	.45
0 times-Once a week	13841.200	965.303	14.339	.000	.53
0 times-More than once a week	19035.368	713.381	26.683	.000	.79
1-2 times-A few times	2021.972	399.097	3.066	.000	.08
1-2 times-Once a month	3433.821	969.428	3.542	.008	.15
1-2 times-Twice a month	4649.688	830.803	5.597	.000	.19
1-2 times-Once a week	7061.679	992.904	7.112	.000	.27
1-2 times-More than once a week	12255.847	750.308	16.334	.000	.52
A few times-Once a month	1411.849	984.941	1.433	1.000	.07
A few times-Twice a month-	2627.717	848.854	3.096	.041	.11
A few times-Once a week	5039.707	1008.057	4.999	.000	.19
A few times-More than once a week	10233.876	770.247	13.286	.000	.44
Once a month-Twice a month	1215.867	1225.179	.992	1.000	.04
Once a month-Once a week	3627.858	1340.407	2.707	.143	.11
Once a month-More than once a week	8822.026	1172.089	7.527	.000	.36
Once a week-Twice a month	2411.991	1243.838	1.939	1.000	.08
More than once a week-Twice a month	7606.159	1060.300	7.174	.000	.32
More than once a week-Once a week	5194.168	1191.579	4.359	.000	.25

Note. Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same; the significance level is .050.

[a.] Significance values have been adjusted by the Bonferroni correction for multiple tests.

Research Question 4a: *Are there differences in self-reported psychological distress measures (i.e., Social-Emotional Distress Scale-Secondary [SEDS-S]) across students based on the amount of school they reported missing in the past 30 days (i.e., Question 19)?*

Analysis Results

By comparing mean scores from the SEDS-S across student responses to Question 19, Table 8 indicated a noticeable increase in distress for students who reported missing more school in the past 30 days. When converted to Average Item Response (AIR) scores (Furlong et al., 2020), SEHS-S results for students who reported missing *3 or more days* remained in the average range. However, a clear trend of increased psychological distress occurred in students who reported missing more school. The nonparametric alternative K-W test was conducted to determine if there were significant differences between students' SEDS-S scores based on the amount of absences they reported on Question 19. While the following nonparametric tests relied on median score comparisons, Table 8 presented mean SEDS-S scores to indicate overall changes as students reported missing more school.

Table 8

SEDS-S Mean Scores for Question 19 Responses

Question 19: In the past 30 days, how often did you miss an entire day of school for any reason?	*n*	Mean SEDS-S Score	Std. Deviation
0 days	49486	19.18	8.29
1 day	23563	20.09	8.57
2 days	15602	20.90	8.83
3 or more days	13808	22.05	9.27

Results from the K-W test indicated a statistically significant difference in measures of psychological distress (SEDS-S) across the four response options for Question 19 regarding the amount of school students reported missing, such that, χ^2 (3, n = 102,459) = 1,261.34, p = .000 (see Table 8 above for frequency distributions for each response). Pairwise comparisons demonstrated in Table 9 revealed that SEDS-S scores were significantly different across each

response as students reported increased absenteeism. Additionally, effect size calculations established which group comparisons demonstrated significance and to what extent and indicated a growing difference in SEDS-S scores as students reported missing more school. Using Glass' Δ, the magnitude of difference between students who reported missing *0 days* compared to *3 or more days of school* was between a small and medium level of effect (Glass' Δ = .35).

Table 9

Pairwise Comparisons of SEDS-S Scores from Question 19 Responses

Question 19	Test Statistic	Std. Error	Std. Test Statistic	Adj. Sig. [a]	Glass' Δ Effect Size
0 days-1 day	-3144.766	233.60	-13.46	.000	.11
0 days-2 days	-5760.074	270.98	-21.26	.000	.21
0 days-3 or more days	-9114.926	284.05	-32.09	.000	.35
1 day-2 days	-2615.307	304.62	-8.59	.000	.09
1 day-3 or more days	-5970.159	316.31	-18.88	.000	.23
2 days-3 or more days	-3354.852	344.84	-9.73	.000	.13

Note. Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same; the significance level is .050.

[a.] Significance values have been adjusted by the Bonferroni correction for multiple tests.

Research Question 4b: *Are there differences in self-reported psychological distress measures (i.e., SEDS-S) across students based on the amount of school they reported skipping or class they were cutting in the past 12 months (Question 21)?*

Analysis Results

By comparing mean scores from the SEDS-S across student responses to Question 21, Table 10 indicated a similar trend of increased psychological distress for students who reported skipping or cutting more school in the past 12 months. When converted to Average Item Response (AIR) scores (Furlong et al., 2020), SEDS-S results for students who reported skipping or cutting school *more than once a week* remained in the average range. However, similar to previous results, a clear trend of increased psychological distress was observed in students who reported skipping or cutting more school. The nonparametric alternative K-W test was conducted to determine if there were significant differences between students' SEDS-S scores based on the amount of absenteeism they reported on Question 21. The following nonparametric tests relied on median score comparisons; however, Table 10 presented mean scores to indicate the overall change occurring as students reported skipping more school.

Table 10

SEDS-S Mean Scores for Question 21 Responses

Question 21: During the past 12 months, about how many times did you skip school or cut classes?	*n*	Mean SEHS-S Score	Std. Deviation
0 times	76969	19.51	8.48
1-2 times	12470	21.02	8.68
A few times	8504	21.73	8.83
Once a month	944	22.45	9.30
Twice a month	1279	22.99	9.19
Once a week	860	23.07	9.34
More than once a week	1636	23.21	9.74

Results from the K-W test indicated a statistically significant difference in measures of psychological distress (SEDS-S) across the seven response options for Question 21 regarding the

amount of school skipped or classes cut, such that χ^2 (6, n = 102,662) = 1,276.89, p = .000 (see Table 10 above for frequency distributions of each response). Pairwise comparisons demonstrated in Table 11 revealed significantly different SEDS-S scores as responses indicated more frequent absenteeism. However, reports of progressively increasing psychological distress ceased when students reported skipping or cutting school *once a month* or more. A significant difference was not found when comparing SEDS-S scores from students who reported skipping or cutting *once a month* and *a few times* (p = 1.0) and each subsequent comparison of responses: *once a month* and more (*once a month* and *twice a month* [p = 1.0]; *once a month* and *once a week* [p = 1.0]; *once a month* and *more than once a week* [p = 1.0]; *twice a month* and *once a week* [p = .984]; *more than once a week* and *twice a month* [p = 1.0]; and *more than once a week* and *once a week* [p = .775]. These findings seem to support previous outcomes that demonstrated a plateau in measures of student mental health after they reported skipping or cutting school more than *once a month*.

Glass' Δ was used to calculate effect sizes, presented in Table 11, to indicate the magnitude of effect for SEDS-S scores between each response from Question 21. When comparing students who reported skipping or cutting the least amount (*0 times*) to the highest amount (*more than once a week*) of school, the most substantial effect size (.44) remained in the small effect size range. Additionally, effect sizes were between a small and medium level of effect when comparing students who reported skipping *0 times* and *once a month* (.35), *0 times* and *twice a month* (.41), and *0 times* and *once a week* (.42).

Table 11

Pairwise Comparisons of SEDS-S Scores from Question 21 Responses

Question 21	Test Statistic	Std. Error	Std. Test Statistic	Adj. Sig. [a]	Glass' Δ Effect Size
0 times- 1-2 times	-5461.180	285.461	-19.131	.000	.18
0 times- A few times	-7754.630	337.924	-22.948	.000	.26
0 times- Once a month	-9531.119	968.357	-9.843	.000	.35
0 times- Twice a month	-11456.439	833.716	-13.741	.000	.41
0 times- Once a week	-11481.875	1014.000	-11.323	.000	.42
0 times- More than once a week	-11125.118	738.839	-15.058	.000	.44
1-2 times- A few times	-2293.451	415.882	-5.515	.000	.08
1-2 times- Once a month	-4069.939	998.239	-4.077	.001	.16
1-2 times- Twice a month	-5995.259	868.244	-6.905	.000	.23
1-2 times- Once a week	-6020.695	1042.575	-5.775	.000	.24
1-2 times- More than once a week	-5663.938	777.592	-7.284	.000	.25
A few times- Once a month	-1776.488	1014.488	-1.751	1.00	.08
A few times- Twice a month	-33701.809	886.878	-4.174	.001	.14
A few times- Once a week	-3727.245	1058.143	-3.522	.009	.15
A few times- More than once a week	-3370.487	798.344	-4.222	.001	.17
Once a month- Twice a month	-1925.321	1268.887	-1.517	1.00	.06
Once a month- Once a week	-1950.757	1393.983	-1.399	1.00	.07
Once a month- More than once a week	-1593.999	1208.667	-1.319	1.00	.08
Once a week- Twice a month	-25.436	1304.054	-.020	1.00	.01
More than once a week- Twice a month	331.321	1103.740	.300	1.00	.02
More than once a week- Once a week	356.757	1245.535	.286	1.00	.01

Note. Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same; the significance level is .050.

[a.] Significance values have been adjusted by the Bonferroni Correction for multiple tests.

Research Question 5: *Using groups (a) Complete Mental Health, (b) Symptomatic but Content, (c) Vulnerable, and (d) Troubled from a dual-factor model approach, what percentage of students from each group presented with potential SRB?*

Analysis Results

Using the dual-factor model (n = 26,957), students were broken into groups of Complete Mental Health (average to high subjective well-being and low psychopathology [n = 10,540; 39.1%]), Symptomatic but Content (average to high subjective well-being and high psychopathology [n = 12,014; 44.6%]), Vulnerable (low subjective well-being and low psychopathology [n = 1,699; 6.3%]), and Troubled (low subjective well-being and high psychopathology [2,704; 10.0%]).

Cross-tabulations tables, presented in Table 12, provided frequency distributions for each dual-factor group and the responses from Question 19 regarding attendance. Results indicated that 23.7% of students in the Troubled group (n = 2,697) and 22.1% from the Vulnerable group (n = 1,675) reported missing *3 or more days* of school in the past 30 days. Comparatively, this was more than double the percentage of students from the Complete Mental Health group who reported missing *3 or more days* of school (n = 10,479; 10.1%). Additionally, fewer students from the Troubled group reported missing *0 days* of school than the other dual-factor groups (Complete Mental Health, Symptomatic but Content, and Vulnerable). A Chi-square test for independence analyzed the relationship between attendance and the dual-factor groups. Results from this analysis indicated a significant association between attendance and the dual-factor groups using Question 19, χ^2 (9, n = 26,840) = 777.24, p = <.001, Cramer's V = .098.

Table 12

Dual-Factor Group Distributions for Question 19 Responses

Dual Factor Groups		*0 days*	*1 day*	*2 days*	*3 or more days*	Total
Complete Mental Health	*n*	5715	2289	1420	1055	10479
	(%)	(52.5%)	(21.8%)	(13.6%)	(10.1%)	(100.0%)
Symptomatic but Content	*n*	4931	2779	2127	2152	11989

Dual Factor Groups		*0 days*	*1 day*	*2 days*	*3 or more days*	Total
Vulnerable	(%)	(41.1%)	(23.2%)	(17.7%)	(17.9%)	(100.0%)
	n	685	341	278	371	1675
Troubled	(%)	(40.9%)	(20.4%)	(16.6%)	(22.1%)	(100.0%)
	n	974	598	485	640	2697
Total	(%)	(36.1%)	(22.2%)	(18.0%)	(23.7%)	(100.0%)
	n	12305	6007	4310	4218	26840
	(%)	(45.8%)	(22.4%)	(16.1%)	(15.7%)	(100.0%)

Similarly, Table 13 provided cross-tabulation tables for each dual-factor group and responses to Question 21 regarding attendance. Consistent with previous results, higher percentages of Troubled youth reported skipping school. Representation from the Troubled group was over five times greater than the percentage of students from the Complete Mental Health group in reports of skipping school *more than once a week*. The Vulnerable group persisted with results similar to Troubled students, presenting an even higher percentage of students skipping *more than once a week*. A Chi-square test for independence analyzed the relationship between attendance and the dual-factor groups. Results from this analysis indicated a significant association between attendance and the dual-factor groups based on Question 21, χ^2 (18, n = 26,896) = 1018.508, p = <.001, Cramer's V = .112.

Table 13

Dual-Factor Group Distributions for Question 21 Responses

Dual Factor Groups		*0 times*	*1-2 times*	*A few times*	*Once a month*	*Twice a month*	*Once a week*	*More than once a week*	Total
Complete Mental	*n*	8634	984	589	61	84	51	107	10510
Health	(%)	(82.2%)	(9.4%)	(5.6%)	(0.6%)	(0.8%)	(0.5%)	1.0%)	(100.0%)
Symptomatic but	*n*	8386	1601	1217	150	215	156	274	11999
Content	(%)	(69.9%)	(13.3%)	(10.1%)	(1.3%)	(1.8%)	(1.3%)	(2.3%)	(100.0%)
Vulnerable	*n*	1084	234	187	30	43	21	91	1690
	(%)	(64.1%)	(13.8%)	(11.1%)	(1.8%)	(2.5%)	(1.2%)	(5.4%)	(100.0%)

Dual Factor Groups		*0 times*	*1-2 times*	*A few times*	*Once a month*	*Twice a month*	*Once a week*	*More than once a week*	Total
Troubled	*n*	1573	440	371	50	81	45	137	2697
	(%)	(58.3%)	(16.3%)	(13.8%)	(1.9%)	(3.0%)	(1.7%)	(5.1%)	(100.0%)
Total	*n*	19677	3259	2364	291	423	2273	609	26896
	(%)	(73.2%)	(12.1%)	(8.8%)	(1.1%)	(1.6%)	(1.0%)	(2.3%)	(100.0%)

Chapter 5: Discussion

Analysis results will be provided for each research question in the following sections. Findings for each research question included a discussion of its implication and relevance to other research. Following these results, a summary of strengths, weaknesses, and overall limitations summarized the present study. Finally, an overview of the present study and its implications for practice and future research provided direction to scholars and practitioners. The present study corroborated findings from previous research to identify gaps in the literature regarding the mental health of students with SRB. Little to no research has considered a dual-factor approach to analyzing changes to mental health as students miss or skip school. Future research is strongly encouraged to continue pursuing a better understanding of these students, their mental health, and how to best support them.

Research Question 1: *How do school attendance items from the current dataset compare to prevalence outcomes using other large datasets?*

Research Question 1 Findings

Establishing an accurate prevalence of SRB has faced a longstanding plight of inconsistent methods for collecting, identifying, and measuring absenteeism. Students categorized as *truant* are often at the focal point of questions about attendance that typically inquire about *skipping* or *cutting* school. The CHKS-SCM provided some reprieve from this by using Question 19 (*missed* school) in addition to Question 21 (*skipped* or *cut* school). Each question represented different functions of absenteeism. However, this distinction remains unclear. While 48% of students from Question 19 reported having *missed 0 days* of school in the past 30 days, 74.7% of students from Question 21 reported having *skipped* or *cut 0 times* in the

past 12 months. The present study sought to accommodate these differences by utilizing both questions in its analyses.

As previously mentioned, Kearney (2008) suggested that outcomes can become notably problematic for students who missed 2.5 days of school in a given two-week period (i.e., 25%) or were absent for ten days over 15 weeks (i.e., 13%). The present study focused on groups of students who reported missing *3 or more days* in the past 30 days or skipping *twice a month* or more in the past 12 months. Each of these groups represented students who, at the very least, present a high risk for SRB and its subsequent negative impact. Earlier thresholds for identifying SRB struggles recommend intervening for students after 10% of school was missed over three months (Lyon & Cotler, 2007).

From Question 19 (n = 106,651), 13.5% of students responded to having *missed 3 or more days* of school in the past 30 days. These students posed a risk of missing approximately 15% of the available school days. On the other hand, Responses from Question 21 (n = 106,857) indicated that 3.6% of students reported *skipping* or *cutting twice a month* (1.2%), *once a week* (0.8%), or *more than once a week* (1.6%), combined, in the 12 months prior. In California, each school year consists of 180 school days (National Center for Education Statistics, 2021). This range (*twice a month* through *more than once a week*) included the potential of skipping approximately 11% or more (>40%) of available school- assuming that students skipped school for the entire day.

The CHKS-SCM is accessible and specific to California schools, making it a valuable tool for gathering and analyzing attendance information. Previous literature has frequently cited a broad range from 5-28% for students presenting with SRB (Heyne et al., 2019; Kearney, 2001; Lyon & Cotler, 2007). The caution maintained in this broad range was likely intended to avoid

excluding students at-risk for SRB and emphasized the growing issue of SRB. While the CHKS-SCM attendance questions resulted in similar outcomes, a more narrow prevalence of SRB (3.6-13.5%) was found when compared.

On the other hand, compared to other large survey datasets, the present study resulted in a higher percentage of student absences. Data from the 2009 National Survey on Drug Use and Health (n = 17,482) found 11% of students ages 12-17 years old reported *skipping* school in the past 30 days (Vaughn et al., 2013). Findings from the 2007 School Crime Survey report (n = 5,621) found that only 5.5% of students ages 12-18 reported *skipping* school in the month before the survey (United States Department of Justice, 2007). And other large surveys (Monitoring the Future, n = 11,113 [Henry, 2007]; National Comorbidity Survey-Adolescent Supplement, n = 9,244 [Kessler, 2001-2004]) used similar language for students to report the amount of school they had *skipped* and found 11-27% of adolescents reporting to have *skipped* school.

Unfortunately, incongruent terms and definitions for SRB continue to deter effective classification and understanding of these students. The studies mentioned above, for instance, relied on questions targeting students through truancy courts or surveys of mental health, school crime, and drug use. When approaching attendance from this position, a subsequent impact may occur when attempting to understand attendance patterns. The CHKS-SCM provided some relief from this and allowed school-based data to be considered. While obstacles to gaining accurate prevalence information for SRB persist, these components support understanding how many students have attendance problems and why.

Research Question 2a: *Are significant differences observed in attendance groups based on grade level?*

Research Question 2a Findings

Regarding Question 19, 11.7% of students in grade 7 reported missing *3 or more days* of school in the past 30 days compared to 17.9% of students in grade 12. More students reported missing *3 or more days* of school more as they aged through grades 7 (11.7%), 8 (12.5%), 9 (12.6%), 10 (13.8%), 11 (15.2%), and 12 (17.9%). A similar trend existed in responses to Question 21 with increased collective responses for students who skipped school twice a month or more (*twice a month*, *once a week*, and *more than once a week*) in grades 7 (1.6%), 8 (1.8%), 9 (2.9%), 10 (3.9%), 11 (5.7%), and 12 (8.2%). An analysis of these results found a statistically significant association between attendance and grade level with an increase of absenteeism in older students; the effect sizes from these outcomes were small.

Previous literature has reported that SRB occurred most commonly between ages 10-13 years old and during transitions from elementary to middle or middle to high school settings (Kearney & Albano, 2018; Kearney et al., 2004). Other findings, however, have indicated consistently higher rates of absenteeism as students grow older (Maynard et al., 2017). The present study relied on children aged 12-17 years old, focusing on secondary-age students. Findings supported prior studies in which a progressive increase occurred in secondary students missing or skipping school more often as they grew older.

Research Question 2b: *Is there a significant association between attendance and gender or sexual orientation?*

Research Question 2b Findings

The present study found that higher rates of female students (15.1%) reported missing *3 or more days* of school in the past 30 days than males (11.8%). These findings remained consistent for each response to Question 21, in which more female students reported skipping

school in the past 12 months than male students. Female students continually represented more elevated rates of absence in secondary students. Consistent with previous studies, an even higher rate of transgender students (21.3%) reported missing *3 or more days* in the past 30 days. Analyses for the relationships between gender (male or female and transgender students, separately) and absenteeism yielded statistically significant results.

Further analysis of students' sexual orientation indicated that reports from *gay or lesbian* and *bisexual* students (18.4%) who missed *3 or more days* of school in the past 30 days were more likely than *straight (not gay)* students and those who declined to respond (12.9%). Similar results from Question 21 supported that *gay or lesbian* and *bisexual* students reported skipping school more often in the past 12 months. The relationship between sexual orientation and attendance reports from Questions 19 and 21 were also statistically significant. Students' gender identity and sexual orientation appeared to influence attendance and pose critical implications for students who face a higher risk of SRB.

Previous literature has identified different truancy rates for male and female students, such that females present more frequent absences. Although, due to the persistent neglect for consistently defining "truancy" behaviors, outcomes have varied. Certain studies have reported more likely absences for males due to *truancy* behaviors (Maynard et al., 2017). Other studies have maintained that gender may not play a significant role in attendance (Henry, 2007; Kearney et al., 2004; Vaughn et al., 2013). When considering transgender students, a nascent body of literature has found, among other things, a significantly higher likelihood of missing more than three days of school out of the past 30 days and higher risks for unexcused absenteeism (Pampati et al., 2020; Robinson & Espelage, 2011).

Research Question 2c: *Are significant differences observed in attendance groups based on student race/ethnicity?*

Research Question 2c Findings

School attendance problems pose a growing concern across all race/ethnicity groups. However, not unlike many issues in education, these concerns are not proportionate across all minority groups of people. The present study found that Hispanic/Latinx students reported missing and skipping school more often than non-Hispanic/Latinx students. This margin of difference remained small across each response option for Questions 19 and 21; however, it presented a statistically significant relationship. When considering additional race/ethnicities, a clear trend was present in Asian students consistently reporting to miss and skip school less than all other backgrounds, followed by Caucasian/White students.

Black or African American students reported higher rates of missing and skipping school- although these rates were at times identical to American Indian or Alaska Native students and closely followed by Native Hawaiian or Pacific Islander and students of Mixed (two or more) races. Students' race/ethnicity had a statistically significant relationship with attendance based on Questions 19 and 21. Despite effect sizes for this analysis remaining small, when compared to the range of effect size outcomes for other demographic items (Cramer's V = .022-.089), race/ethnicity demonstrated the largest relative effect (.089) for its relationship with attendance using Question 19 (*missed* school over the past 30 days).

Findings from the present study were consistent with previous research outcomes. For instance, Vaughn and colleagues (2013) compared groups of mild, moderate, and chronic SRB across students' race/ethnicity. This study found that Caucasian/White students represented a majority of mild SRB cases (80%), while African American and Hispanic students comprised a

majority of moderate cases (approximately 80%); chronic cases were more evenly allocated across these three groups. Additionally, studies of secondary students (12-17 years of age) found consistent disproportionalities with higher rates of absence for Hispanic and African American students when compared to Caucasian/White students (Maynard et al., 2017).

Research Question 2d: *Is there a significant association between attendance and socioeconomic status?*

Research Question 2d Findings

Socioeconomic background and attendance were analyzed using student reports of their parents' education levels and student eligibility for free or reduced-price lunch. Responding *don't know* to the question regarding parental education level excluded students from the analysis. Results indicated that fewer students whose parents had higher education levels reported missing *3 or more days* of school in the past 30 days. This trend remained consistent when reviewing outcomes for Question 21 for reports on skipping school in the past 12 months. A statistically significant relationship was found between parental education level and attendance reports from Questions 19 and 21.

Further prospects were explored by analyzing students eligible for free or reduced-price lunch (self-reported). These results indicated that more students who were eligible for free or reduced-price lunch reported missing and skipping school than students who did not report being eligible. A statistically significant relationship between these variables was found to support the interaction between students' attendance and their socioeconomic background; effect size measures were small for this outcome.

Present findings were similar to other research outcomes in which parents with higher income correlated with better school attendance (Gennetian et al., 2018; Maynard et al., 2017).

Findings from other studies have also asserted that students from low-income families and communities are four times likely to miss 10% or more of school when compared to peers from higher income groups (Chang et al., 2008; Gottfried, 2014). While SRB presents in all socioeconomic groups, its presence is not proportionate.

Research Questions 2a-2d Findings Summary

The present study sought to understand and acknowledge demographic factors and their undeniable role in SRB cases. Results found that grade level, gender, sexual orientation, race/ethnicity, and socioeconomic status have a significant relationship with attendance. Despite the effect sizes for each of these analyses remaining small, their outcomes support evidence from previous literature findings that emphasize demographic factors and their critical role in school attendance. These results warranted future research to develop and understand the different "risk profiles" associated with select demographic features in students with SRB (Maynard et al., 2017). School attendance problems present a growing social justice concern that afflicts potentially vulnerable people groups to a greater degree.

An analysis of the demographics from the CHKS-SCM sample resulted in outcomes similar to other studies. Specifically, students reported missing and skipping school more often as they grew older. More female students reported absenteeism than males, although transgender students represented absenteeism the most. More gay or lesbian and bisexual students reported missing and skipping school than their cisgender male or straight peers. More students of color were absent than White/Caucasian and Asian students. And children from families with less parental education and who were eligible for free or reduced-price lunch were absent more often. Unfortunately, these findings consistently confirm a trend in research outcomes that imply a student's demographic background significantly influences their school attendance.

Research Questions 3a: *Are there differences in self-reported subjective well-being measures (i.e., Social-Emotional Health Survey-Secondary [SEHS-S]) across students based on the amount of school they reported missing in the past 30 days (i.e., Question 19)?*

Research Questions 3a Findings

The present study used a dual-factor approach to consider subjective well-being in addition to psychological distress when analyzing the interaction between attendance and a dual-factor perspective on mental health. The SEHS-S was relied on as an established measure of covitality- a synergistic view of subjective well-being. This model is built on factors of belief-in-self, belief-in-others, engaged living, and emotional competence. By comparing the difference in overall SEHS-S scores across student responses to the CHKS-SCM questions on attendance, results indicated that overall subjective well-being progressively decreased in students who reported missing more school.

Overall, the mean SEHS-S scores remained within the average range for students who reported missing *3 or more days* of school in the past 30 days. These findings implied that select students at-risk for SRB presented with average ratings of their subjective well-being. However, there was an apparent decrease in these scores with increased reports of missing school. After analyzing differences in SEHS-S scores based on student responses to Question 19, significant differences were present between each response (*0 days*, *1 day*, *2 days*, and *3 or more days*). A significant decrease was witnessed in the subjective well-being of students as they reported missing more school.

Even when comparing SEHS-S scores for students who missed *0 days* and reports of missing *1 day*, neither of which propose a risk of SRB, a significant difference remained; although, a small effect size was present (.08). For students who reported missing school more

often, this significance became more substantial and rendered a small effect size (.36) when comparing students who reported missing *0 days* and *3 or more days*. Students who reported missing *3 or more days* in the past 30 days posed a risk for SRB by missing 15% of the available school days. The present study found that the subjective well-being of these students was significantly lower than students who reported missing less school.

Previous research has scarcely studied SRB using a dual-factor approach to mental health; consequentially, literature provides little understanding of how attendance interacts with subjective well-being. However, a recent study used the SEHS-S to identify factors of subjective well-being, namely belief-in-self and belief-in-others, as significant indicators of attendance problems. The present study was unique in its approach for considering a dual-factor perspective on mental health. Findings support subjective well-being as having a critical role in students' attendance.

Research Question 3b: *Are there differences in self-reported subjective well-being measures (i.e., SEHS-S) across students based on the amount of school they reported skipping or cutting in the past 12 months (i.e., Question 21)?*

Research Question 3b Findings

To further inspect the interaction between subjective well-being and SRB, Question 21 was used to identify how much school students reported skipping in the past 12 months. As previously discussed, this question's language elicits a different meaning than Question 19 (*missing* school). This population of students, akin to the term *truancy*, can often be dismissed as maladjusted or merely misbehaving. However, research has identified underlying psychopathologies (e.g., depression or anxiety) as a common addition to student conduct problems or oppositional defiance in cases of SRB (Bools et al., 1990; Egger et al., 2003).

Including the subjective well-being of these students was an essential step towards better understanding their mental health.

When comparing SEHS-S scores across responses to Question 21, a statistically significant difference was found. As reports of skipping school increased, subjective well-being decreased. Further comparison of each response to Question 21 indicated a significant difference between students who reported skipping *0 times* and *1-2 times* and *1-2 times* and *a few times*. However, there was no statistical significance for differences in SEHS-S scores between students who reported skipping *a few times* and *once a month*; *once a month* and *twice a month*; *once a month* and *once a week*; as well as *twice a month* and *once a week*. These outcomes had important implications as the difference in SEHS-S scores appeared to cease in students who reported skipping school once a month and more.

Once students began skipping school once a month or more, the differences between scores became less dramatic. Even the difference between students who reported skipping *a few times* and *once a month* ($p = 1.0$) or *a few times* and *twice a month* ($p = .041$) presented little-to-no significance in the differences based on their SEHS-S scores. A statistically significant difference in SEHS-S scores resumed when comparing student reports of skipping *once a week* and *more than once a week* ($p = .000$). Overall, there was a clear and significant difference in SEHS-S scores between students who reported skipping school *0 times* or *1-2 times* and each higher absenteeism report. Most notably, the magnitude of difference in SEHS-S scores between students who reported skipping *0 times* and skipping *more than once a week* yielded a large effect size (.79). These findings indicated a drastic decrease in students' subjective well-being as they reported skipping school more often.

Research Question 4a: *Are there differences in self-reported psychological distress measures (i.e., Social-Emotional Distress Scale-Secondary [SEDS-S]) across students based on the amount of school they reported missing in the past 30 days (i.e., Question 19)?*

Research Question 4a Findings

This study emphasized a dual-factor approach to mental health by analyzing students' psychological distress as a counterpart to their subjective well-being. To better understand the interaction between mental health and attendance, SEDS-S scores were compared across responses to Question 19 regarding attendance. Like results from the SEHS-S, after converting SEDS-S ratings into overall AIR scores, they remained in the average range across all responses to Question 19- even the group of students who reported missing *3 or more days* in the past 30 days. However, after analyzing SEDS-S scores, a statistically significant difference indicated increased psychological distress in students as they reported missing more school.

After only one absence, compared to students who reported missing *0 days*, a statistically significant difference existed between scores on the SEDS-S- although the effect size for this group comparison was small (.11). When analyzing students with a low risk of SRB (missed *0 days*) and students who reported missing *3 or more days* of school in the past 30 days, a small level of effect (.35) indicated a growing magnitude of difference in SEDS-S scores. This effect size was nearly identical to the same comparison when analyzing the SEHS-S (.36). Based on the overall comparison of subjective well-being and psychological distress, a significant change occurred in the mental health of students who reported more absenteeism.

While research on SRB has not strictly considered a dual-factor approach to mental, extensive literature has long recognized the strong connection with mental health. Research has consistently established a strong relationship between SRB and symptoms of anxiety and

depression (Gonzálvez et al., 2019; Hansen et al., 1998; Honjo et al., 2001; Honjo et al., 2003; Last, 1991). These symptoms often occur concurrently with underlying psychosomatic symptoms and have a strong correlation with absenteeism (Bernstein et al., 1997; Kearney & Silverman,1993; McShane et al., 2004; Nayak et al., 2018). Additionally, students with anxiety-based SRB difficulties are more subject to victimization and bullying (Delgado et al., 2019). Anxiety or depression has been found to manifest in several ways, including academic problems, peer rejection, and feeling inadequate- each of which can contribute to the severity and impact of SRB cases (Craun et al., 2017; McShane et al., 2004). Internalizing symptoms are also common underlying factors in SRB cases where primary concerns include externalizing behavior symptoms (Bools et al., 1990; Egger et al., 2003).

Research Question 4b: *Are there differences in self-reported psychological distress measures (i.e., SEDS-S) across students based on the amount of school they reported skipping or cutting in the past 12 months (i.e., Question 21)?*

Research Question 4b Findings

To further inspect the difference in psychological distress for students with SRB, students were identified based on Question 21 regarding the amount of school they reported skipping in the past 12 months. Similar to previous findings in this study, SEDS-S scores were significantly different based on students' responses to Question 21. By comparing students who reported skipping school *0 times* or *1-2 times* in the past 12 months, SEDS-S scores were significantly higher in each proceeding response (skipping *a few times*, *once a month*, *twice a month*, *once a week*, or *more than once a week*). However, when comparing students who reported skipping *a few times* and skipping *once a month*, their SEDS-S scores were no longer significantly different. Additionally, SEDS-S scores from students who skipped *once a* month compared to reports of

skipping more frequently (*twice a month*, *once a week*, and *more than once a week*) were no longer statistically significant.

An analysis of the SEDS-S resulted in findings similar to outcomes on the SEHS-S, where scores ceased having a significant difference and plateaued after reports of skipping school *a few times* and more. Based on responses to Question 21, students who reported skipping school more than *a few times* did not have significantly different scores on the SEDS-S (i.e., *a few times* and *once a month*; *once a month* and *twice a month*; *once a month* and *once a week*; *twice a month* and *once a week; twice a month* and *once a week*; *twice a month* and *more than once a week*; and *once a week* and *more than once a week*). This analysis was similar to outcomes using Question 21 and the SEHS-S to measure subjective well-being. However, the comparison of SEDS-S scores for students who reported skipping *once a week* and *more than once a week* did not indicate a significant difference like the SEHS-S scores did.

While these results indicated no statistically significant differences in students' mental health after skipping school more than *a few times*, the difference between scores on the SEDS-S grew gradually as reports of skipping increased. Overall, the difference in SEDS-S scores between students who reported skipping *0 times* and those who reported skipping *more than once a week*, was approaching a medium effect size (.44). When continuing to compare SEDS-S scores to students who skipped *0 times*, effect sizes for *once a week* (.42), *twice a month* (.41), and *once a month* (.35) progressively diminished when students reported less absenteeism. When comparing responses from Question 21, differences in the SEDS-S were relatively smaller than the effect sizes for the SEHS-S. This comparison was most notable when comparing the magnitude of difference in SEDS-S scores (.44) and SEHS-S scores (.79) for students who reported skipping *0 times* and *more than once a week*. The difference witnessed in students'

subjective well-being (SEHS-S) appeared more substantial than the measure of psychological distress (SEDS-S).

Research Questions 3a-3b and 4a-4b Findings Summary

Overall, mean scores on both the SEHS-S and SEDS-S demonstrated significant differences as students reported more absenteeism on Questions 19 and 21. Compared to *0 days*, missing even just *1 day*, *2 days*, or *3 or more days* of school in the past 30 days resulted in significantly different (lower) reports of subjective well-being and significantly different (higher) reports of psychological distress. Effects sizes for differences in subjective well-being and psychological distress for students who missed *0 days* compared to *3 or more days* remained small (.36 and .35, respectively). Using Question 21, students who reported skipping school over the past 12 months demonstrated the same apparent pattern of an overall significant decrease of subjective well-being and overall significant increase in psychological distress. However, further analysis of Question 21 provided further insight into the changes to student mental health as they reported skipping more school.

After students reported skipping school more than *a few times* in the past 12 months, SEHS-S and SEDS-S scores alike were not significantly different when comparing responses for skipping more frequently. For instance, when conducting pairwise comparisons of responses to Question 21, the difference in SEDS-S and SEHS-S scores were significant when comparing students who skipped *0 times* and *1-2 times* and *1-2 times* and *a few times*. The remaining comparisons (*a few times* and *once a month*; *once a month* and *twice a month*; *twice a month* and *once a week*; and *once a week* and *more than once a week*) ceased to demonstrate significant differences in students' SEHS-S and SEDS-S scores- with the exception of SEHS-S scores being significantly different when comparing students who skipped *once a week* and *more than once a*

week. This pattern has been illustrated as a plateau in student mental health measures, for both their subjective well-being and psychological distress.

While student mental health appeared to sustain a chronic impact suspected from patterns of SRB, a clear and significant impact was observed nonetheless. Further findings were revealed when analyzing the overall effect size for difference in mental health for students who reported skipping *0 times* and those who reported skipping *more than once a week*. This comparison yielded nearly a large effect size (.79) for students' SEHS-S scores. However, this same comparison resulted in a substantially smaller difference in SEDS-S scores, with a small effect size (.44). Certainly, an overall change in mental health was observed as students reported skipping (and missing) school more often. However, subjective well-being was revealed a more substantial difference as students skipped school more often. By considering a dual-factor approach, the present study identified subjective well-being as a vital component to understanding the overall mental health of students with SRB.

Patterns of absenteeism become notably problematic and indicative of SRB after a student has missed 25% of school in a given two-week period or 10 days in a fifteen-week period (Kearney & Albano, 2018). However, the present study's findings supported research that has suggested an earlier threshold of for identifying SRB in students should be considered after missing 10% of school over a period of three months (Lyon & Cotler, 2007). Early identification and subsequent interventions should be considered increasingly relevant as the present findings indicated significant changes in mental health after only a few absences from school. Even more compelling were results that found student mental health changed intermittently as skipping school became more habitual and chronic over 12 months.

Overall, AIR scores from the SEHS-S and SEDS-S remained in the average range for each group of responses to Questions 19 and 21. The existence of one variable (attendance or mental health struggles) did not always coincide with the presence of the other. Suffice to say that not all students with mental health struggles miss or skip school, and not all students who miss or skip school have mental health struggles. However, students with poor mental health miss and skip school more often than their healthy peers, and mental health changed significantly in groups with higher rates of absenteeism. These findings emphasized the importance of building a comprehensive understanding of mental health that considers subjective well-being in addition to psychopathologies when working with students who present SRB.

Research Question 5: *Using groups (a) Complete Mental Health, (b) Symptomatic but Content, (c) Vulnerable, and (d) Troubled from a dual-factor model approach, what percentage of students from each group presented with potential SRB?*

Research Question 5 Findings

Student responses to Questions 19 and 21 were divided into groups based on the dual-factor model, including Complete Mental Health [average to high subjective well-being and low psychopathology], Symptomatic but Content [average to high subjective well-being and high psychopathology], Vulnerable [low subjective well-being and low psychopathology], and Troubled (low subjective well-being and high psychopathology]). Based on results from the present study, groups consistent with the dual-factor model had a significant association, overall, with attendance reports from Questions 19 and 21. These outcomes demonstrated small effect sizes for each question (Cramer's V = .098 & .112, respectively). However, the magnitude of these differences presented a relatively stronger relationship than each of the demographic factors analyzed in Research Questions 2a-2d (Cramer's V = .022-.089).

Groups of students with progressing mental health struggles were drastically more representative of attendance problems when compared to students with fewer mental health problems. Several students from the Troubled (23.7%) and Vulnerable (22.1%) groups reported missing *3 or more days* of school in the past 30 days. Comparatively, students in the Symptomatic but Content group (17.9%) were less represented. Finally, students in the Complete Mental Health group (10.1%) were least represented. As students indicated lower psychological distress or higher subjective well-being, they reported fewer attendance problems.

In students who were Symptomatic but Content, psychological distress was evident but subdued, potentially, by average to high subjective well-being. Fewer of these students reported having missed *3 or more days* of school, insinuating that subjective well-being may be a protective factor against SRB. Additionally, fewer students in the Vulnerable group reported attendance problems when compared to Troubled youth. The Vulnerable group consisted of low subjective well-being despite showing little psychological distress and are considered high-risk for developing psychological distress and developing into being Troubled. These findings served as further evidence of the suspected impact that mental health deterioration can have on attendance when subjective well-being decreases and psychological distress increases.

Question 21 demonstrated similar trends. No more than one percent of students with Complete Mental Health reported having skipped school *once a month* or more (i.e., *twice a month*, *once a week*, *more than once a week*). This same cut-off point was established previously as a potential threshold where subjective well-being and psychological distress stopped demonstrating a significant difference in students with SRB. Higher rates of absenteeism were consistently reported by students with lower subjective well-being and higher psychological distress- continuing to strengthen the evidence of a connection between mental health and SRB.

In their study using the dual-factor model to conceptualize mental health, Suldo and Schaffer (2008) identified students in the Complete Mental Health group for exhibiting average to high subjective well-being with low psychopathology. This group of students demonstrated several positive attributes and protective factors, including better attendance. Suldo and Schaffer (2008) eluded to a vital component for understanding student mental health- the role of subjective well-being. More recently, research has identified specific factors of subjective well-being as more predictive of attendance problems (Wroblewski et al., 2019). Results from the present study further supported subjective well-being as a protective factor against SRB. Additionally, the difference in reports of subjective well-being was substantially more significant than the difference found in psychological distress for students with SRB.

Strengths and Limitations

Prior studies have used several different methods and parameters to measure absenteeism. A lack of distinction between terms (e.g., *missing* or *skipping* school) has resulted in further incongruencies in research. Consequently, various outcomes have emerged regarding the prevalence, identification methods, and overall understanding of SRB. The present study used separate questions on the CHKS-SCM for *missing* and *skipping* school to strengthen its validity and broaden its inclusivity. Additionally, time duration relied on two metrics, including "the past 30 days" as well as "the past 12 months." The present sample size (n = 107,125) provided adequate sampling for each response to Questions 19 and 21. Additionally, the CHKS-SCM gathered data from 296 different schools from various settings in California as opposed to other sources commonly used in studies (e.g., truancy courts, drug-related surveys, school crime surveys).

The present dataset was highly representative of Hispanic/Latinx students (48.1%) and other diverse student backgrounds. This detail emphasized the rich and diverse data available through the CHKS-SCM and was a strength to the present study. Due to the level of detail elicited from this survey, the present study analyzed several aspects of students' demographic backgrounds. The sample was limited to the age range of secondary students in grades 7-12. A limitation to generalizing results from this study was identified in California being a majority-minority state with a substantial portion of students identifying as a race/ethnicity other than White/Caucasian (Furlong et al., 2020). Additionally, while the relationship between demographic factors and attendance had a significant association, the effect sizes for each of these remained small.

The methods and instruments used throughout analysis were strong and suitable for this study and presented with only some limitations. As previously discussed, Questions 19 and 21 regarding attendance on the CHKS-SCM present different implied meanings for absenteeism (missing or skipping). It was essential to acknowledge a strong likelihood that several students who may have reported frequently missing or skipping school were not in attendance to complete the school-based survey.

The SEHS-S and SEDS-S were relied on in this study to measure subjective well-being and psychological distress, respectively. These instruments have a sound psychometric background with appropriate use in diverse populations and were designed specifically for administration in unison to align with the dual-factor model. The SEHS-S and SEDS-S were limited to their function as screening tools and should supplement additional measures to establish further diagnostic information. Despite heterogeneous outcomes being encountered regularly in previous SRB studies, the SEHS-S and SEDS-S maintained exceptional internal

consistency reliability even as students reported more frequent absenteeism (see Table 2 in Chapter 4).

Using a dual-factor model approach when analyzing SRB in secondary students was a fundamental strength of the present study. A statistically significant relationship was established between dual-factor groups for mental health and both Questions 19 and 21 on attendance. While the effect sizes for these outcomes remained small, mental health groups had a more substantial relationship with attendance than any demographic factor. Additionally, the effect sizes for changes in subjective well-being were substantial findings when comparing students who skipped *0 times* and those who reported skipping *once a week or more*. Currently, the dual-factor model lacks research supporting its theoretical use in specific populations, such as students with SRB. Additionally, scores in the average range on the SEDS-S excluded students from any dual-factor group as low and high scores determined group membership.

Implications for Practice

Understanding the mental health changes in students with SRB has remained a complex phenomenon in research. Students with SRB often present subtle or masked symptoms and demonstrate levels of psychopathology that may meet multiple diagnostic criteria or none at all (Bools et al., 1990; Egger et al., 2003; Kearney & Albano, 2004; Kearney et al., 2005). A persistent heterogeneity has convoluted researchers' understanding of how mental health interacts with cases of SRB. The present study intended to enhance our understanding of the mental health changes in students with SRB by implementing a dual-factor approach. Results indicated that an overall significant difference in mental health was present across students who were absent more frequently. These students had lower reports of subjective well-being and higher reports of

psychological distress. Most notably, the analysis found drastic differences in students' subjective well-being when they reported missing or skipping school more frequently.

Previous literature has recommended thorough assessment procedures for students with SRB that included medical, familial, and mental health factors. The present study found that employing a dual-factor model approach to understanding mental health was essential for understanding students with SRB. Subjective well-being has a critical and distinct role in their mental health and may contribute as a protective factor against SRB. While several variables are likely to influence a students' attendance, subjective well-being and psychological distress had a more significant association with attendance outcomes than other demographic factors.

The dual-factor model was paramount in building a better understanding of mental health in students with SRB. Without this perspective, the difference in psychological distress witnessed in students who skipped more school may have been viewed as negligible. By considering the subjective well-being of this population, in addition to traditional psychopathology, practitioners can improve earlier identification, prevention, and intervention methods. However, not all students who presented with attendance problems reported mental health struggles; subsequently, a holistic and comprehensive approach must be maintained in understanding this vulnerable population. The significant role that demographic variables play must also be taken into account. These important contextual components of a student were recognized as playing an important role in attendance and practitioners are encouraged to be mindful of their potential interaction with absenteeism.

Future Directions

To further expand a comprehensive understanding of students' attendance, research should continue deliberating the role that demographic and ecological factors have. These

elements of a student's background should be considered, potentially as isolated variables, to understand how specific profiles of SRB may be different. Research can then further explore how a student's age, gender, sexual orientation, race/ethnicity, and socioeconomic background interact with topics such as school climate, academic achievement, positive relationships with peers or staff, and academic engagement. These indicators for school climate are lacking from literature on this topic and warrant further exploration. By establishing what predictive value these variables have with regard to attendance, future studies should determine what early identifiers and protective factors can detect or prevent SRB.

The CHKS and additional modules are available and often obligated for use in California schools. Data from these surveys provide a diverse sample with extensive scales established for school climate and related phenomenon. Future researchers are strongly encouraged to utilize data from the CHKS or similar available datasets when exploring topics regarding school attendance. Based on additional attendance questions from the CHKS-SCM, future research should investigate whether the reasons students reported for their absences interact with their mental health in different ways. For instance, do different profiles exist for students reporting to avoid school because of anxiety instead of hanging out with friends or engaging in substance use? This question and others alike would provide vital information for continuing research on identifying the function behind a student's SRB and its subsequent impact. Lastly, Future research on SRB is encouraged to continue employing a dual-factor model when evaluating students' mental health.

Conclusion

Chapter 5 provided a summary of findings for each research question following the analyses from the preceding chapter. The present study analyzed an extensive dataset including

the CHKS-SCM, an optional module measuring subjective well-being (SEHS-S), and an additional measure of psychological distress (SEDS-S). The CHKS-SCM provided two separate questions about attendance that inquired about students missing or skipping school over the past 30 days or the past 12 months. By using both these items, this study avoided some of the previous ambiguity research has faced in the lack of distinction between these functions- missing versus skipping school. The prevalence of students demonstrating a potential pattern of SRB was identified as a range from 4.5-13.5% in the CHKS-SCM. This range has improved on commonly used rates of prevalence that include 5-28% of students. It was acknowledged that students with chronic attendance problems might have been unable to complete the CHKS-SCM due to their absence.

The present study confirmed foundational findings from previous studies regarding the vital role that a student's demographic background has in attendance. Results continued to support that girls often skipped and missed school more than their male peers. However, transgender students represented a higher percentage of responses indicative of SRB. Consistent with previous research findings, select students of color reported attendance problems more often when compared to Caucasian/White and Asian students. Lastly, students whose parents had lower education levels and students eligible for free or reduced-price lunches reported SRB more often.

A holistic perspective of mental health should not dismiss the influence of demographic factors. Accordingly, the current study analyzed critical items on the CHKS-SCM related to student demographics. Research questions about students' backgrounds and attendance confirmed previous research findings and acknowledged the vital role that demographic factors have regarding attendance. Ongoing research on this topic has suggested that certain

demographic features may position students in distinct profiles with varying degrees of risk for attendance problems (Maynard et al., 2017). This notion, and the supporting evidence from the present study, identified absenteeism as an essential topic in need of further research.

A significant component of the present study was using the dual-factor approach to comprehensively analyze changes in student mental health when SRB was present. The SEHS-S (Furlong et al., 2020) and SEDS-S (Dowdy et al., 2018) were designed to be co-administered to assess both subjective well-being and psychological distress. These instruments have excellent psychometric qualities and maintained the dual-factor approach that was unique to the present study. Despite the common heterogeneity encountered in studies of SRB, these measures maintained high internal consistency reliability even as students reported missing or skipping school more frequently.

Analyzing the mental health of students with SRB through the dual-factor lens identified a substantial difference in the subjective well-being of students who missed and skipped more school. Together, both subjective well-being and psychological distress create a more holistic view of mental health. Although student reports indicated a statistically significant difference in their psychological distress scores, the magnitude of this difference ($\Delta = .44$) was not as substantial as the difference found in their subjective well-being ($\Delta = .79$). This sizeable effect size outcome suggested that subjective well-being has a pivotal role in the mental health of students with SRB and should be implemented in practice and future research.

While students demonstrated overall differences in their mental health as they missed and skipped more school, further analysis indicated that statistically significant differences were not consistent across responses for skipping school. As students reported skipping *once a month* and more, their subjective well-being and psychological distress scores were not significantly

different than each sequential response (*twice a month*, *once a week*, *more than once a week*). These results warrant further research but implied that chronic differences in mental health might have emerged as students skipped more school.

Lastly, students presented statistically significant differences on each mental health measure after missing only *1 day* of school or skipping *1-2 times* or *a few times* when compared to missing or skipping *0 days* or *times*. Criteria for establishing concern for SRB have remained arbitrary and lacking guidance for practitioners and researchers. This early indication of reduced subjective well-being and increased psychological distress encouraged future researchers to explore evidence of an earlier threshold for when patterns of SRB may impact students. Based on comparing students in groups established using the dual-factor model, students reported more absenteeism as their reports of subjective well-being decreased and psychological distress increased. These groups demonstrated a significant relationship with attendance and positioned the dual-factor model as a new and critical perspective to understanding mental health in students with SRB.

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APPENDICES

Appendix A

Question 19. In the past **30 days,** how often did you miss an entire day of school for any reason?

A. I did not miss any days of school in the past 30 days

B. 1 day

C. 2 days

D. 3 or more days

Question 21. During the past **12 months,** about how many times did you skip school or cut classes?

A. 0 times

B. 1-2 times

C. A few times

D. Once a month

E. Twice a month

F. Once a week

G. More than once a week

Appendix B

Social-Emotional Health Survey-Secondary (SEHS-S): Grades 7-12 (Page 1/2)

Directions: You are being asked to take a survey about how you have felt over the past few weeks. Your school is doing this survey to better understand your school experiences. With this information, your school wants to provide support to help improve your school experiences.

	Read each item and choose the response that best describes you. Please respond honestly. There are no right or wrong answers. You can skip questions you don't want to answer.	**Not at all true**	**A little true**	**Pretty much true**	**Very much true**
1	I can work out my problems.	Not at all true	A little true	Pretty much true	Very much true
2	I can do most things if I try	Not at all true	A little true	Pretty much true	Very much true
3	There are many things that I do well.	Not at all true	A little true	Pretty much true	Very much true
4	There is a purpose to my life.	Not at all true	A little true	Pretty much true	Very much true
5	I understand why I do what I do	Not at all true	A little true	Pretty much true	Very much true
6	I understand my moods and feelings.	Not at all true	A little true	Pretty much true	Very much true
7	When I do not understand something, I ask the teacher again and again until I understand.	Not at all true	A little true	Pretty much true	Very much true
8	I try to answer all the questions asked in class.	Not at all true	A little true	Pretty much true	Very much true
9	When I try to solve a math problem, I will not stop until I find a final solution.	Not at all true	A little true	Pretty much true	Very much true
10	At my school, there is a teacher or some other adult who always wants me to do my best.	Not at all true	A little true	Pretty much true	Very much true
11	At my school, there is a teacher or some other adult who listens to me when I have something to say.	Not at all true	A little true	Pretty much true	Very much true
12	At my school, there is a teacher or some other adult who believes that I will be a success.	Not at all true	A little true	Pretty much true	Very much true
13	My family members really help and support one another.	Not at all true	A little true	Pretty much true	Very much true
14	My family really gets along well with each other.	Not at all true	A little true	Pretty much true	Very much true
15	There is a feeling of togetherness in my family.	Not at all true	A little true	Pretty much true	Very much true
16	I have a friend my age who really cares about me.	Not at all true	A little true	Pretty much true	Very much true
17	I have a friend my age who talks with me about my problems.	Not at all true	A little true	Pretty much true	Very much true

…continued

Social-Emotional Health Survey-Secondary (SEHS-S): Grades 7-12 (Page 2/2)

…Continued		Not at all true	A little true	Pretty much true	Very much true
18	I have a friend my age who helps me when I'm having a hard time.	Not at all true	A little true	Pretty much true	Very much true
19	I accept responsibility for my actions.	Not at all true	A little true	Pretty much true	Very much true
20	When I make a mistake, I admit it.	Not at all true	A little true	Pretty much true	Very much true
21	I can deal with being told no.	Not at all true	A little true	Pretty much true	Very much true
22	I feel bad when someone gets his or her feelings hurt.	Not at all true	A little true	Pretty much true	Very much true
23	I try to understand what other people go through.	Not at all true	A little true	Pretty much true	Very much true
24	I try to understand how other people feel and think.	Not at all true	A little true	Pretty much true	Very much true
25	I can wait for what I want.	Not at all true	A little true	Pretty much true	Very much true
26	I don't bother others when they are busy.	Not at all true	A little true	Pretty much true	Very much true
27	I think before I act.	Not at all true	A little true	Pretty much true	Very much true
28	Each day I look forward to having a lot of fun.	Not at all true	A little true	Pretty much true	Very much true
29	Overall, I expect more good things to happen to me than bad things.	Not at all true	A little true	Pretty much true	Very much true
30	I usually expect to have a good day.	Not at all true	A little true	Pretty much true	Very much true
31	On most days I feel energetic.	Not at all true	A little true	Pretty much true	Very much true
32	On most days I feel active.	Not at all true	A little true	Pretty much true	Very much true
33	On most days I feel enthusiastic.	Not at all true	A little true	Pretty much true	Very much true
34	On most days I feel, grateful.	Not at all true	A little true	Pretty much true	Very much true
35	On most days I feel, thankful.	Not at all true	A little true	Pretty much true	Very much true
36	On most days I feel, appreciative.	Not at all true	A little true	Pretty much true	Very much true

Social-Emotional Health Survey-Secondary (SEHS-S): Scoring Form (Page 1/2)

1. I can work out my problems (1-4)		
2. I can do most things if I try (1-4)		
3. There are many things that I do well (1-4)		
Self-Efficacy	**Average Item Response (AIR) = (1 + 2 + 3) / 3**	**AIR**
4. There is a purpose to my life (1-4)		
5. I understand my moods and feelings (1-4)		
6. I understand why I do what I do (1-4)		
Self-Awareness	**Average Item Response (AIR) = (4 + 5 + 6) / 3**	**AIR**
7. When I do not understand something, I ask the teacher again and again until I understand (1-4)		
8. I try to answer all the questions asked in class (1-4)		
9. When I try to solve a math problem, I will not stop until I find a final solution (1-4)		
Persistence	**Average Item Response (AIR) = (7 + 8 + 9) / 3**	**AIR**
Belief in Self Total	**Average Item Response (AIR) = (1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9) / 9**	**AIR**

10. At my school, there is a teacher or some other adult who always wants me to do my best (1-4)		
11. At my school, there is a teacher or some other adult who listens to me when I have something to say (1-4)		
12. At my school, there is a teacher or some other adult who believes that I will be a success (1-4)		
School Support	**Average Item Response (AIR) = (10 + 11 + 12) / 3**	**AIR**
13. My family members really help and support one another (1-4)		
14. There is a feeling of togetherness in my family (1-4)		
15. My family really gets along well with each other (1-4)		
Family Support	**Average Item Response (AIR) = (13 + 14 + 15) / 3**	**AIR**
16. I have a friend my age who really cares about me (1-4)		
17. I have a friend my age who talks with me about my problems (1-4)		
18. I have a friend my age who helps me when I'm having a hard time (1-4)		
Peer Support	**Average Item Response (AIR) = (16 + 17 + 18) / 3**	**AIR**
Belief in Others Total	**Average Item Response (AIR) = (10 +11 + 12 + 13 + 14 + 15 + 16 + 17 + 18) / 9**	**AIR**

…continued

Social-Emotional Health Survey-Secondary (SEHS-S): Scoring Form (Page 2/2)

19. I accept responsibility for my actions (1-4)		
20. When I make a mistake, I admit it (1-4)		
21. I can deal with being told no (1-4)		
Emotional Regulation	**Average Item Response (AIR) = (19 + 20 + 21) / 3**	**AIR**
22. I feel bad when someone gets his or her feelings hurt (1-4)		
23. I try to understand what other people go through (1-4)		
24. I try to understand how other people feel and think (1-4)		
Empathy	**Average Item Response (AIR) = (22 + 23 + 24) / 3**	**AIR**
25. I can wait for what I want (1-4)		
26. I don't bother others when they are busy (1-4)		
27. I think before I act (1-4)		
Self-Control	**Average Item Response (AIR) = (25 +26 + 27) / 3**	**AIR**
Emotional Competence Total	**Average Item Response (AIR) = (19 + 20 + 21 +22 +23 +24 +25 +26 +27) / 9**	**AIR**

28. Each day I look forward to having a lot of fun (1-4)		
29. I usually expect to have a good day (1-4)		
30. Overall, I expect more good things to happen to me than bad things (1-4)		
Optimism	**Average Item Response (AIR) = (28 + 29 + 30) / 3**	**AIR**
31. Since yesterday how much have you felt grateful (1-4)		
32. Since yesterday how much have you felt thankful. (1-4)		
33. Since yesterday how much have you felt appreciative. (1-4)		
Gratitude	**Average Item Response (AIR) = (31 + 32 + 33) / 3**	**AIR**
34. How much do you feel energetic right now (1-4)		
35. How much do you feel active right now (1-4)		
36. How much do you feel enthusiastic right now (1-4)		
Zest	**Average Item Response (AIR) = (34 + 35 + 36) / 3**	**AIR**
Engaged Living Total	**Average Item Response (AIR) = (28 + 29 + 30 + 31 + 32 + 33 + 34 + 35 + 36) / 9**	**AIR**

Summary Average Item Responses (AIR)	**(transfer values from above here)**
Belief in Self (BIS)	AIR
Belief in Others (BIO)	AIR
Emotional Competence (EC)	AIR
Engaged Living (EL)	AIR
Total Covitality **Average Item Response (AIR) = (BIS + BIO + EC + EL) / 4**	**AIR**

SEHS-S Average Item Response (AIR) Scoring Profile Student: _____ Date: _____

AIR	S-E	S-A	Per	**BIS**	PS	SS	FS	**BIO**	E	ER	S-C	**EC**	O	G	Z	**EL**	**CoV**
4.0				4.0				4.0				4.0				4.0	4.0
3.9																	3.9
3.8																	3.8
3.7																	3.7
3.6																	3.6
3.5																	3.5
3.4																	3.4
3.3																	3.3
3.2																	3.2
3.1																	3.1
3.0				3.0				3.0				3.0				3.0	3.0
2.9																	2.9
2.8																	2.8
2.7																	2.7
2.6																	2.6
2.5																	2.5
2.4																	2.4
2.3																	2.3
2.2																	2.2
2.1																	2.1
2.0				2.0				2.0				2.0				2.0	2.0
1.9																	1.9
1.8																	1.8
1.7																	1.7
1.6																	1.6
1.5																	1.5
1.4																	1.4
1.3																	1.3
1.2																	1.2
1.1																	1.1
1.0				1.0				1.0				1.0				1.0	1.0
	Self-Efficacy	Self-Awareness	Persistence	**A. Belief in Self**	Peer Support	School Support	Family Support	**B. Belief in Others**	Empathy	Emotional Regulation	Self-Control	**C. Emotional Competence**	Optimism	Gratitude	Zest	**D. Engaged Living**	**CoVitality Total (A+B+C+D) / 4**

Responses: 1 = not at all true, 2 = a little true, 3 = pretty much true, 4 = very much true. CoV = AIR of (A + B + C + D)/4 = _____.
Shaded = AIR ± standard deviation (16th to 84th percentiles). Based on the responses of 119, 756 California students in Grades 7-12.

Appendix C

Social-Emotional Distress Scale-Secondary (SEDS-S): Grades 7-12 (Page 1/1)

Directions: You are being asked to take a survey about how you have felt over the past few weeks. Your school is doing this survey to better understand your school experiences. With this information, your school wants to provide support to help improve your school experiences.

	Read each item and choose the response that best describes you. Please respond honestly. There are no right or wrong answers. You can skip questions you don't want to answer.	**Not at all true**	**A little true**	**Pretty much true**	**Very much true**
1	I had a hard time breathing because I was anxious (1-4)	Not at all true	A little true	Pretty much true	Very much true
2	I worried that I would embarrass myself in front of others (1-4)	Not at all true	A little true	Pretty much true	Very much true
3	I was tense and uptight (1-4)	Not at all true	A little true	Pretty much true	Very much true
4	I had a hard time relaxing (1-4)	Not at all true	A little true	Pretty much true	Very much true
5	I felt sad and down (1-4)	Not at all true	A little true	Pretty much true	Very much true
6	I was easily irritated (1-4)	Not at all true	A little true	Pretty much true	Very much true
7	It was hard for me to get excited about anything (1-4)	Not at all true	A little true	Pretty much true	Very much true
8	I was easily annoyed and sensitive (1-4)	Not at all true	A little true	Pretty much true	Very much true
9	I was scared for no good reason (1-4)	Not at all true	A little true	Pretty much true	Very much true
10	It was hard for me to cope and I thought I would panic (1-4)	Not at all true	A little true	Pretty much true	Very much true

Social-Emotional Distress Scale-Secondary (SEDS-S): Scoring Form

1. I had a hard time breathing because I was anxious (1-4)	
2. I worried that I would embarrass myself in front of others (1-4)	
3. I was tense and uptight (1-4)	
4. I had a hard time relaxing (1-4)	
5. I felt sad and down (1-4)	
6. I was easily irritated (1-4)	
7. It was hard for me to get excited about anything (1-4)	
8. I was easily annoyed and sensitive (1-4)	
9. I was scared for no good reason (1-4)	
10. It was hard for me to cope and I thought I would panic (1-4)	
SEDS-S Total **Average Item Response (AIR) = (1 + 2 + 3 + 4 + 5 + 6 +7 +8 + 9 + 10) / 10**	**AIR**

Social-Emotional Distress Scale-Secondary (SEDS-S): Scoring Form

Item Response	1	2	3	4	5	6	7	8	9	10
Very much true (4)										
Pretty much true (3)										
A little true (2)										
Not at all true (1)										
	Hard time breathing	Embarrassed self in class	Tense, uptight	Hard time relaxing	Sad and down	Easily irritated	Hard to get excited	Annoyed and sensitive	Scared, no good reason	Hard to cope, panic

Responses: AIR = 2.0… standard deviation = 1.0… 16th to 84th percentile range = 1.0 to 3.0… AIR based on responses of 119,756 California students in grades 7-12. For access to prevention and intervention strategy resources, see http://project-covitality.info/prevention-and-intervention/

Appendix D

Systematic Review of SRB: Overview of Critical Findings

Author, Date	Subjects & Setting	Critical Findings
Pritchard & Ward, 1974	67 children 61.1% males 10-15 years old (yo) In-patient clinic in England Follow up study:	Nearly a quarter of the sample belonged to incomplete families and 48% of the families contained a parent presenting some psychiatric illness. Matrixes were developed to model the correlations found between parent-child relationships and the dynamics reinforcing one other.
Valles & Oddy, 1984	34 children 66% males 7-12 yo In-patient clinic	Half of these students returned to school while the other half had never done so. Those who returned to school tended to come from families with more stable parent relationships, were younger, and had shorter admissions. Those who never returned to school reported boredom more frequently and were less interested in dating and other social pursuits. Additionally, select children who never returned to school were in full-time higher education courses at the time of follow up.
Bernstein, Svingen, & Garfinkel, 1990	76 families 55% males 7-17 yo Outpatient clinic	Significantly less family dysfunction was rated by mothers and children if the child had a diagnosis of pure anxiety disorder compared to families of school phobic children in other diagnostic categories Dyadic dysfunction was identified in the parent-child relationship in families with a school phobic child. Diagnosis was the strongest predictor of family dysfunction, including disruptive behavioral disorders.
Bools, Foster, Brown, & Berg, 1990	100 families 59% males	Children from a non-clinical population were divided into groups sharing similar features: (1) morning symptoms, (2) antisocial behavior, and (3) general neurotic disturbances. Associations were found between antisocial behaviors/conduct disorder

Author, Date	Subjects & Setting	Critical Findings
	School setting	and truancy. Evidence was supported for school refusal students with and without generalized neurotic disturbances in a non-clinical population.
Kearney & Silverman, 1990	Case study: 7 children 5 males 9-16 yo Clinical setting	Results from this review of treatment-effectiveness found some degree of correlation between the consistency of improvement shown for each subject and the level of agreement between children, parents, and teachers on the SRAS child and parent forms. Measures of general anxiety throughout treatment were inconsistent but reduced.
Last, 1991	158 children 47.4% males <13 (50%) and >13 yo Outpatient clinic	Outpatients with anxiety disorders were identified into somatic and nonsomatic groups. Panic disorder and separation anxiety disorders were significantly more likely to be associated with somatic complaints. Phobic disorders were significantly less likely to be associated with somatic complaints. Children with anxiety and somatic complaints were significantly more likely to show school refusal and were typically older than anxiety prone children without somatic complaints.
Kearney & Silverman, 1993	42 families 61.9% males Clinical setting	This study focused on the development of the School Refusal Assessment Scale, a tool used to identify 4 maintaining variables of school refusal behavior within dimensions of negative and positive reinforcement. The results supported child and parent versions of the scale to be reliable across time and between parent raters. Findings supported the hypothesis that separate functional conditions could be distinguished for school refusal behavior. Further analysis and discussion emphasized the utility of using the scale to establish hypotheses for the function of reinforcements maintaining school refusal behavior to guide treatment.
Bernstein & Borchardt, 1996	134 families 55% males 7-17 yo	The association between school refusal and family constellation types revealed that single-family homes were overrepresented in the school refusal clinic (39.6%) compared to a control group (16.8%). However, found that the differences in family functioning are not explained by their children's diagnoses or severity of symptoms.

Author, Date	Subjects & Setting	Critical Findings
	Outpatient clinic Compared to Adolescent Health Survey	
Chorpita, Albano, Heimberg, & Barlow, 1996	Case study: 10 yo Female	School refusal behavior was determined to be maintained by an attention seeking function. A systematic, functional analysis method defined target behaviors and aligned specific intervention strategies. treatment showed marked reduction of problem behaviors. The student no longer met criteria for any anxiety disorder diagnoses.
Rayner & Riding, 1996	17 children 15-17 yo Clinical setting Compared to 850 students with regular attendance in mainstream secondary schools	Suggests particular learning profiles, specifically wholist cognitive styles on the wholist-analytic dimension, may be more present in children who refuse to attend school.
Bernstein, Massie, Thuras, Perwien, Borchardt, & Crosby, 1997	44 children 38.6% males 12-18 yo Ongoing NIMH funded treatment study	The most commonly endorsed somatic complaints included autonomic symptoms and gastrointestinal symptoms. Findings supported depressive symptoms as a contributor to somatic complaints. Students with separation anxiety tended to be younger and have markedly better attendance when compared to groups with other anxiety disorders. A small positive correlation was established between severity of somatic symptoms and the percentage of days absent from school.
Hansen, Sanders, Massaro, Last, 1998	76 children 47% males	By examining the severity of school absenteeism in children with anxiety-based school refusal, this study supported older age, lower levels of fear, and less active families as primary predictors for greater levels of school absenteeism.

Author, Date	Subjects & Setting	Critical Findings
	6-17 yo Clinical setting Study 1: 20 children 55% males Clinical setting Study 2: 5 children Outpatient clinic	
Daleiden, Chorpita, Kollins, & Drabman, 1999		Both components to this study examined interrater reliability, test-retest stability, and the effects of various clinician variables (years of experience, theoretical orientation, and clinical judgement) on determining the reinforcement functions of school refusal behavior. Results emphasized the benefits to using multiple judges and assessment tools overtime to determine the function of school refusal behavior, as well as adequate prior training of assessors.
	Case study: 8 families 62.5% males 6-16 yo Clinical setting	
Kearney & Silverman, 1999		The SRAS was supported as an effective functional assessment tool to guide prescriptive treatment. prescriptive treatments had substantial results in attendance improvement, self-report, parent and/or teacher measures showed improved internalizing and externalizing behaviors.
	Cases reviewed from 1989-1996: 34 children 67.6% males	
Honjo, Nishide, Niwa, Sasaki, Kaneko, Inoko, & Nishide, 2001		Authors suggested that school attendance difficulties impacted by depression should be precluded when discussing the phenomenon of school refusal. It is discussed that the typical case of school refusal involves somatic complaints in the foreground rather than depression, and that such cases manifest emotional conflict as somatic symptoms rather than depressed mood. Further discussion emphasized the need for further

Author, Date	Subjects & Setting	Critical Findings
	7-17 yo 10 additional cases of comorbid depression 50% males 7-17 yo Clinical setting Compared to 243 normal control cases at a school in Japan 45.6% males 12-15 yo	research to clarify the interaction of depression and school refusal across various cultures, in order to guide effective treatment.
King, Heyne, Tonge, Gullone, & Ollendick, 2001	Case study: Female 9 yo Clinical setting	This case study emphasized the importance of considering socioeconomic disadvantages, parental psychopathology, family dysfunction, single parent households, and ethnocultural diversity when implementing a hypothesis-testing and multi-informant assessment approach. Further discussion elaborated on different methods of returning to school, the graduated school return versus a rapid school return.
Kearney, 2002a	Case study: Male 12 yo Clinical setting	This case explored the SRB of a child with three suspected functions. Moderate levels of anxiety and negative affect were noted but were accompanied by severe levels of discomfort. No formal criteria were met for DSM 4 diagnosis due to the acute onset of symptoms. Primary functions of school refusal behavior appeared to be due to 3 reasons: (1) avoidance of stimuli that provoke negative affectivity, (2) attention, and (3) tangible reinforcement. Further discussion emphasized the importance of comprehensive assessment procedures and complex prescriptive treatment strategies, and collaboration across school and clinical staff.

Author, Date	Subjects & Setting	Critical Findings
Egger, Costello, & Angold, 2003	1,422 families 9-16 yo From the longitudinal Great Smoky Mountains Study (GSMS) of the development of psychiatric disorders in youths in North Carolina The original GSMS sample included 55.6% males	The association between anxious school refusal, truancy, and psychiatric disorders was examined in a community sample using descriptive rather than an etiological definition of SRB. Pure anxious school refusal was associated with depression and separation anxiety while pure truancy was associated with oppositional defiant disorder, conduct disorder, and depression. Of the mixed school refusers (anxious and truancy), 88.2% had a psychiatric disorder and increased rates of both emotional and behavioral disorders. Further discussion emphasized the importance of evaluating children with school attendance problems for psychiatric disorders.
Honjo, Sasaki, Kaneko, Tachibana, Murase, Ishii, Nishide. Nishide, 2003	Review of cases from 1998: 425 children 46.1% males First-year junior high to second-year high school age School in Japan	Factor analysis of CDI rating scales established 3 factors: (1) core depression, (2) feelings of interpersonal maladaptation, and (3) self-revulsion. School avoidance and personality scales were designed and analyzed for this study. Findings discussed the school avoidance factors were intimately associated with both 'feelings of interpersonal maladaptation' and 'core depression' from the CDI factors.
Kearney & Albano, 2004	143 families 62.9% males 5-17 yo Clinical setting	When examining diagnoses most commonly associated with proposed functions of school refusal behavior, results indicated significant heterogeneity across this population. Children tended to be older if they refused school to escape aversive social and/or evaluative situations or to pursue tangible reinforcement outside of school. Children tended to have the most severe diagnoses if they refused school to avoid stimuli that provoked negative affectivity. It was also acknowledged that while some children may meet criteria for a separation anxiety disorder, their learned behaviors to evade school may be rooted in willful, manipulative, and controlling behaviors (e.g., tantrums). This study supported that the sole reliance on formal diagnoses or taxonomies to organize youth with school refusal behavior is a difficult task. Considerable heterogeneity is evident and much overlap across proposed diagnostic

Author, Date	Subjects & Setting	Critical Findings
		subtypes. Findings support the consideration of both the forms and the functions of school refusal behavior when developing taxonomic systems for this population.
McShane, Walter, & Rey, 2004	Follow up study: 118 children 12-18 yo Clinical setting Previously assessed in 1994-1998	A follow-up with past in- and out-patients sought to inquire about their improved functional outcomes. After six months of treatment, 83 demonstrated general improvements, 89 maintained their functional improvements at 3 years after treatment. Dysthymia or comorbid diagnoses were associated with poorer functional outcomes 6 months after treatment, but not at 3 years. Academic difficulties and social phobias in conjunction to SRB had less positive long-term functional outcomes and were predictive of poorer functional outcomes 3 years following treatment.
Kearney, Chapman, & Cook, 2005	55 young children 5-9 yo Clinical setting	Children who present SRB are characterized mostly by separation anxiety, attention-seeking motives, and oppositional behavior. Many of these families exhibit low levels of independence or high levels of dependence that may reinforce children's willful, stubborn, manipulative behaviors designed to force parents to indulge their demands. Children with anxiety may continue attending school, but with great distress. Those without anxiety symptoms may refuse school and pursue tangible incentives by demonstrating behaviors that evade clinical diagnoses and are difficult to identify.
Kearney, 2007	222 families 60.3% males 5-17 yo Clinical setting	This study found the function of school refusal behavior was a better determinant of the degree of school absenteeism than a behavior form. Ongoing analysis of variables that impact treatment effectiveness should be part of evaluations (e.g., problematic family dynamics, demographic variables, developmental status, ethnicity, severity of school refusal behavior, and comorbid mental disorders).
Prabhuswamy, Srinath, Girimaji, & Seshardi, 2007	Review of records: 33 children 57.6% males	When considering diagnostic status, psychosocial correlates, and short-term outcomes of youth presenting school refusal behavior, 87.9% of subjects had a psychiatric diagnosis at baseline, depression most common (63.6%), with specific phobias next (30.3%); several (48.5%) presented school related stressors. At follow up, 66.6% had returned to school, of these, 20% demonstrated persisting psychiatric diagnoses at a

Author, Date	Subjects & Setting	Critical Findings
	8-16 yo Clinical setting in India Participating in services through National Institute of Mental Health and Neuro Sciences (NIMHANS)	follow-up. Results indicated that school refusal had remitted despite their psychiatric status persisting.
Arvans & LeBlanc, 2009	Case study: Male 14 yo	A young male with Asperger's demonstrating symptoms of depression and anxiety was found to refuse school in order to escape undesirable settings; additional minor health problems were also present, including nearly daily reports of migraines. The authors propose that antecedents to, and the function of migraines may play a vital role in school refusal behavior problems in select populations.
Dube & Orpinas, 2009	99 children 58.5% males Upper-elementary to middle school setting	Social workers examined the reinforcement profiles of students with attendance problems from SRAS-C reports and identified 3 profiles: (1) missed to avoid fear- or anxiety-producing situations, escape from aversive social or evaluative situations, or gain positive tangible rewards (multiple profile) (17.2%); (2) missed to gain parental attention or receive tangible rewards (positive reinforcement) (60.6%); and (3) students who had no profile (22.2%). All three groups were found to have significantly different mean scores for behavioral difficulties. Further discussion emphasized the importance of developing behavior assessments to identify early signs of school refusal.
Maric, Heyne, de Heus, van Widenfelt, & Westenberg, 2012	50 children 58% males 11-17 yo Participating in "@ School Project" program in the Netherlands Compared to 181 community children	Negative cognitions commonly linked to anxiety were analyzed in school refusers regarding their negative automatic thoughts and thinking errors. When controlling for anxiety, school refusers were found to report more negative automatic thoughts concerning personal failure, fewer negative automatic thoughts concerning hostility, and fewer positive automatic thoughts. Negative automatic thoughts concerning personal failure and hostility, and the negative cognitive error of overgeneralizing were found to independently predict school refusal.

Author, Date	Subjects & Setting	Critical Findings
Hochadel, Frölich, Wiater, Lehmkuhl, Fricke-Oerkermann, 2014	55% males 11-17 yo 1,490 families 50.3% males 8-11 yo School setting in Germany	Sleep problems in childhood are frequent and present a clear relationship with school refusal behavior. Insomnias, parasomnias, and daytime sleepiness showed significantly higher scores in 3 (anxiety disorders, anxiety or depressive disorders, and separation anxiety disorder) out of the 4 groups of behaviors maintaining school refusal compared to children without sleep; the 4th group included oppositional defiant or conduct disorders, truancy, or no disorder at all.
Carless, Melvin, Tonge, & Newman, 2015	60 families 53% males, 12-17 yo Clinical setting in Australia Compared with 46 school attending children	Parents of school refusing adolescents showed lower levels of parental self-efficacy than parents of school attending adolescents. This was initially established as a predictive factor for school refusal behavior, but was dismissed after controlling for family dysfunction, adolescent depression, and parent depression. These results highlighted the complex relationships between parental self-efficacy, familial psychopathology, and dysfunctional family processes within this population.
Becker, Jensen-Doss, Kendall, Birmaher & Ginsburg, 2016	39% male 12-17 yo 488 families 50.4% males 7-17 yo	Informant discrepancies across parents and children on broad versus narrow domains of anxiety were analyzed to show that the magnitude of agreement between parents and youth differed by anxiety subtype with the highest agreement for school anxiety and separation anxiety, and the lowest agreement on generalized anxiety and social phobia. These results are consistent with research suggesting higher agreement on more observable symptoms.

Author, Date	Subjects & Setting	Critical Findings
	Participating in Child/Adolescent Anxiety Multimodal (CAMS) study, as part of the National Institute of Mental Health (NIMH)	
Craun, Haight, DeCou, Babbitt, & Wong, 2017	31 families 51% males 8-17 yo Truancy court	Depression, anxiety, and sense of inadequacy were compared with friendship, peer support, and peer group acceptance to explore the association between youth's perception of peer acceptance and support and symptoms of psychopathology in youth referred through truancy court. Results found that peer support and peer rejection significantly predicted inadequacy, anxiety, and depression; however, further analyses revealed peer rejection predicted internalizing symptoms whereas peer support did not.
Gonzálvez, Kearney, Jiménez-Ayala, Sanmartín, Vicent, Inglés, & García-Fernández, 2018	1,582 children 60.9% males 12-18 yo 11 secondary education centers in Ecuador	The 4 functional components to the SRAS-R were analyzed to determine whether profiles differed based on dimensions of depression, anxiety, and stress. Analysis revealed 3 school refusal profiles: (1) non-school refusal behavior, (2) school refusal behavior by tangible reinforcements, and (3) school refusal behavior by multiple reinforcements. The SRB by multiple reinforcement group showed the most maladaptive profile and highest mean scores on 3 dimensions of a stress scale.
Gonzálvez, Sanmartín, Vicent, Inglés, Aparicio-Flores, & García-Fernández, 2018	1,078 children 50.8% males 8-11 yo Schools in Spain	Mean differences in scores of mathematic self-attributions and functions of SRB were analyzed to show that students with SRB based on negative affect or anxiety attributed their academic math failures more to a lack of capacity and effort. Results found that academic attributions (capacity, effort, and external causes) acted as both positive and negative predictors of high-school refusal. Students searching for tangible reinforcements outside of school were more likely to attribute their successes to their capacity.
Lee, Chong, Abu, & Bakar, 2018	Case study: Male	Two students with Systemic Lupus Erythematosus faced subsequent drastic weight gain and mood changes were often targets of bullying from peers. Discussion emphasized medical populations that may be at risk for school refusal and less likely

Author, Date	Subjects & Setting	Critical Findings
	14 yo Female 12 yo	to be identified or assessed for this behavior due to underlying medical illnesses and added complexities.
Nayak, Sangoi, & Nachane, 2018	Records reviewed: 45 children 62% males 5-16 yo Clinical setting in India Compared with a National Mental Health Survey from 2015-16	Several school refusers (77.8%) presented with a psychiatric diagnosis. Depression was most common, 26.7%) followed by anxiety (17.7%). The prevalence of psychiatric disorders was significantly higher in the school refusal population than the community sample. The most common reasons provided for not attending school included physical symptoms. Other reasons for school refusal included behavioral disturbances (71.7%), somatic complaints (66.7%), academic difficulties (20%), and conflicts with teachers and peers (20%). It is noted that, in this particular population, 33% indicated parental conflicts (including domestic violence and substance abuse in one or both parents).
Delgado, Martinez-Monteagudo, Ruiz-Esteban, & Rubio, 2019	1,102 children 46.2% males 12-18 yo Schools in Spain	Significant differences were found across all cyberbullying behaviors amongst three profiles of SRB. Students in the negative reinforcement group reported significantly higher mean scores in victimization, aggression, aggression-victimization, and observation behaviors. The levels of cyberbullying were similar between students without school refusal and students with school refusal by positive reinforcements. Further discussion emphasized the need for considering cyberbullying in youth who refuse to attend school.
Gibler, Beckmann, Lynch-Jordan, Kashikar-Zuck, & Jastrowski Mano, 2019	30 families 16.7% males 12-17 yo Clinical setting	Adolescents with chronic pain reported significantly more cognitive, behavioral, and psychophysiological symptoms of school anxiety relative to healthy controls. These students also endorsed significantly greater school anxiety in situations involving negative social evaluation and peer aggression. Their reports of school refusal were more strongly endorsed by behavioral and psychophysiological school anxiety symptoms, with increased symptoms in social evaluative situations.

Author, Date	Subjects & Setting	Critical Findings
	Compared to an age- and sex-matched control group	
Gonzálvez, Díaz-Herrero, Vicent, Sanmartín, Pérez-Sánchez, & García-Fernández, 2019	1,315 children 57.6% males 12-18 yo 11 high schools in Spain	Moderately high, moderately low, mixed and non-school refusal profiles were compared with each other based on scores from eleven dimensions of a self-concept. Results indicated that the mixed school refusal behavior group was the most maladaptive profile with the lowest mean scores on self-concept while non-school refusal and moderately low school refusal behavior groups revealed higher scores in all dimensions of self-concept.
Gonzálvez, Díaz-Herrero, Sanmartín, Vicent, Pérez-Sánchez, & García-Fernández, 2019	1,842 children 47% males 15-18 yo Secondary school in Spain	Separate school refusal profiles were used to examine the relationships between three dimensions of social anxiety. Across 4 profiles of school refusal, the high school refusal behavior group showed higher scores in all subscales of social anxiety, and the lowest scores on perception of good family functioning. Results indicate students who refuse to attend school are at a higher risk of developing social anxiety problems and manifesting family conflicts.
Gonzálvez, Inglés, Kearney, Sanmartín, Vicent & García-Fernández, 2019	1,212 children 8-11 yo 17 schools in Spain	Across 4 school refusal profiles, students in the non-school refusal group and school refusers by tangible reinforcements group presented better social functioning when compared with the rest of the groups. Students with mixed and negative reinforcements maintaining school refusal behavior may benefit from targeted interventions for acquiring social and communication skills.

Appendix E

PROJECT COVITALITY
UNIVERSITY OF CALIFORNIA
SANTA BARBARA

Data Request Form

Date of request: 08/18/2020

Name: Zack Maupin

Email: Zmaupin@chapman.edu

Affiliation and Department: Chapman University (doctoral student in school of education)

- Please describe your connection to the Primary Investigators (PIs) of the grant: Dr. Amy-Jane Griffiths at Chapman University, my advisor, is a past colleague and acquaintance to Dr. Furlong.
- Which dataset(s) are you requesting? Which variables and instruments do you intend to use? Please include all covariates/demographic variables and outcome variables.
    - Data for high school secondary students:
    - ✓ 2017-18 and 2018-19 CHKS-SCM demographic questions: 3-7, 9, 10, 12, 13, 207
    - ✓ 2017-18 and 2018-19 CHKS-SCM items for behavior indicators (grades, cigarette, vaping, drinking, marijuana, suicidal ideation, sadness), questions 20, 70, 72, 74, 75, 131, 130 (respectively)
    - ✓ 2017-18 and 2018-19 CHKS-SCM attendance questions: 21, 22, 23
    - ✓ Concurrent Social-Emotional Health Survey-Secondary module
    - ✓ Concurrent Social Emotional Distress Scale-Secondary
- How will data being requested be used?

The data requested is intended to support my dissertation study. The study intends to promote a dual-factor model approach for conceptualizing school attendance problems. Results will contribute towards more effective assessments that consider mental health and subjective well-being (complete mental health) in students who struggle with attendance.

- We encourage students to present and publish their work! Please check the following boxes to indicate that you understand and agree to abide by the terms of the data sharing agreement.

☒1. I understand that this data is owned by Project CoVitality and will be used for research purposes only. I agree to not use the data for purposes other than which I have stated here. If my intentions change, I will submit an amended data sharing agreement.

☒2. I understand that I will receive access to the data via a personal link to Box, and I will not download the data onto my computer. I will save all my datafiles in Box and will no longer be able to access the data once my contract expires.

☒3. I understand that I am using these data with permission from the PIs of the grant. I understand that if I am interested in publishing or presenting my working outside of a course assignment, I will first submit a formal proposal outside of class to the PIs on the grant detailing my research question(s) and proposed analyses.

☒4. By using these data, I understand that if I intend to publish or present my work outside of an assignment for a course, a PI on the grant should be offered authorship.

☒5. If my paper is accepted for publication or a presentation, I agree to include the following statement: "The research reported here was supported in part by the Institute of Education Sciences, U.S. Department of Education, through Grant #R305A160157 to the University of California, Santa Barbara. The opinions expressed are those of the authors and do not represent views of the Institute of Education Sciences or the U.S. Department of Education."

Do you intend to submit your work for a presentation or publication outside of class?

Yes: ☒ No:☐ Maybe:☐

If you intend to submit somewhere, when, and where (hypotheticals are fine): School Psychology Quarterly, School Psychology Review, or Psychology in the Schools

Please sign the form by typing your name here: Zachary D. Maupin

To submit the form, please send it via e-mail to the PIs at the email addresses below. When you receive approval via email from one the PIs, you may begin your research.

Mike Furlong: mfurlong@ucsb.edu

Karen Nylund-Gibson: knylund@education.ucsb.edu

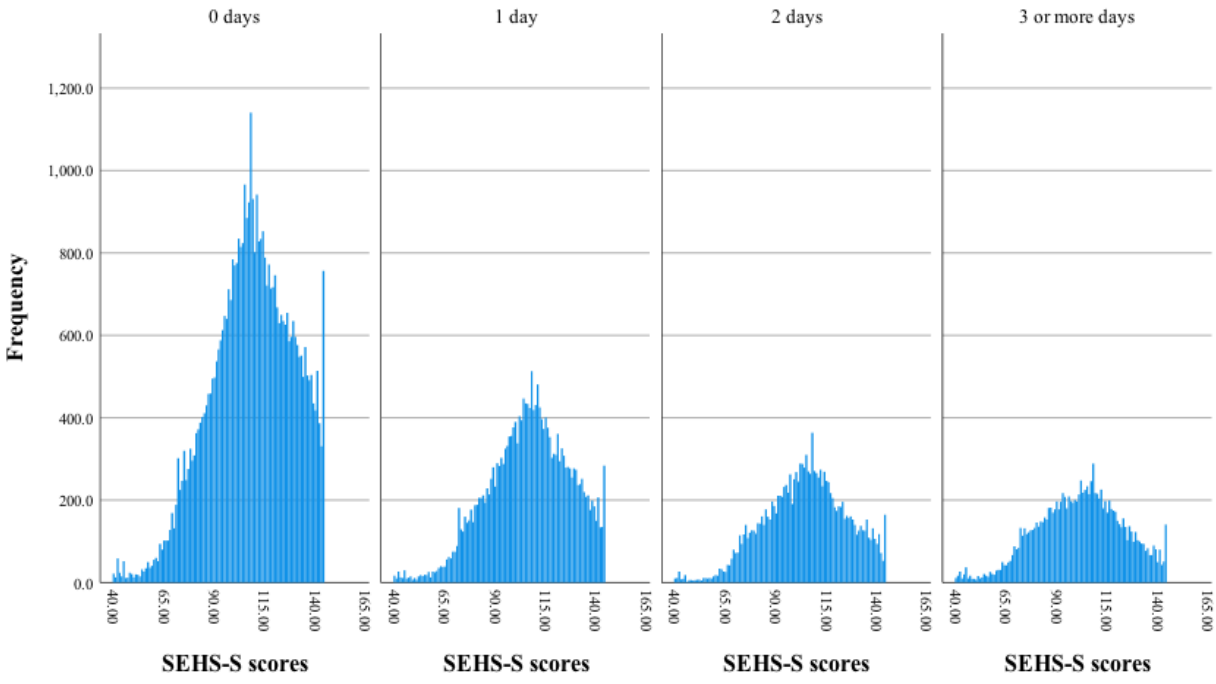
Erin Dowdy: edowdy@ucsb.edu

Appendix F

Frequency Distribution for SEHS-S Scores from Question 19 Responses

Question 19: In the past 30 days, how often did you miss an entire day of school for any reason?	*n*	Skewness (Std. Error)	Kurtosis (Std. Error)
0 days	45509	-.441 (.011)	.033 (.023)
1 day	21669	-.413 (.017)	.029 (.033)
2 days	14155	-.332 (.021)	.001 (.041)
3 or more days	12428	-.333 (.022)	-.050 (.044)

Histogram Charts for Distribution of SEHS-S Scores for Question 19 Responses

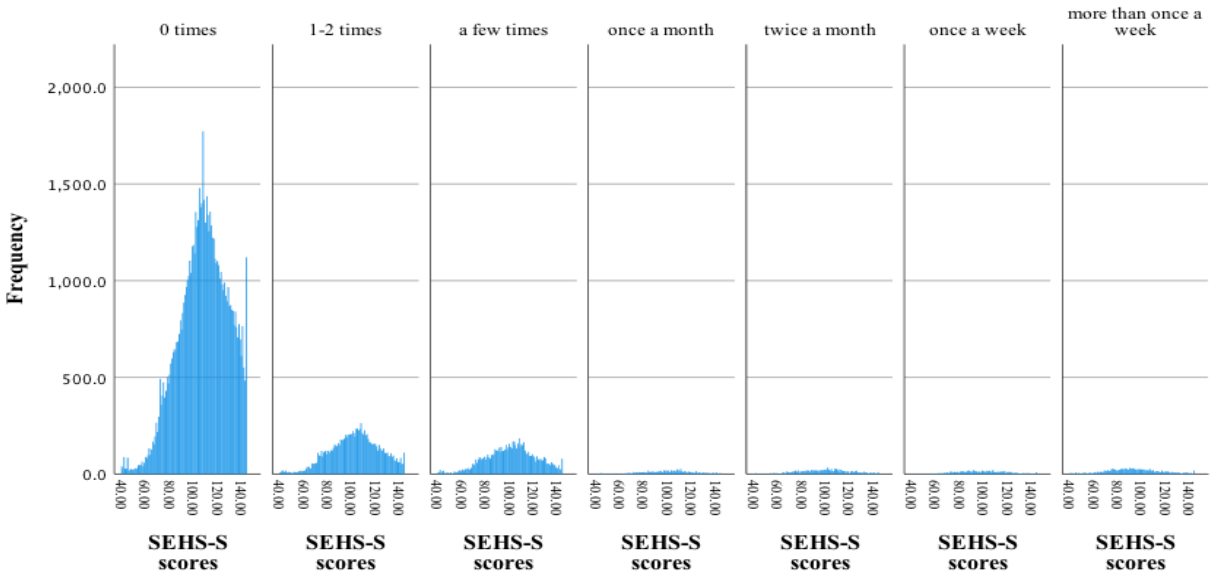


Appendix G

Frequency Distribution for SEHS-S Scores from Question 21 Responses

Question 21: During the past 12 months, about how many times did you skip school or cut classes?	*n*	Skewness (Std. Error)	Kurtosis (Std. Error)
0 times	70494	-.438 (.009)	.051 (.018)
1-2 times	11403	-.312 (.023)	-.057 (.046)
A few times	7756	-.294 (.028)	-.028 (.056)
Once a month	840	-.446 (.084)	.237 (.169)
Twice a month	1175	-.298 (.071)	-.012 (.143)
Once a week	798	-.178 (.087)	-.073 (.173)
More than once a week	1475	-.126 (.064)	-.109 (.127)

Histogram Charts for Distribution of SEHS-S Scores from Question 21 Responses

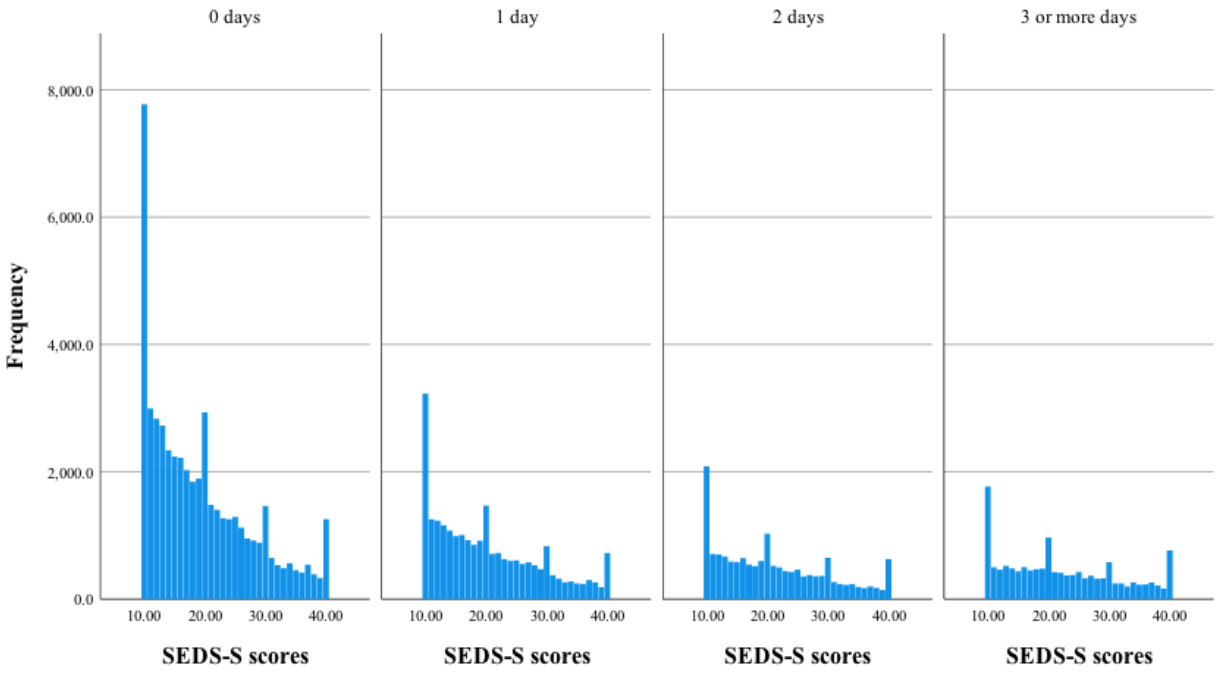


Appendix H

Frequency Distribution for SEDS-S Scores from Question 19 Responses

Question 19: In the past 30 days, how often did you miss an entire day of school for any reason?	*n*	Skewness (Std. Error)	Kurtosis (Std. Error)
0 days	49486	-.441 (.011)	.033 (.023)
1 day	23563	-.413 (.017)	.029 (.033)
2 days	15602	-.332 (.021)	.001 (.041)
3 or more days	13808	-.333 (.022)	-.050 (.044)

Histogram Charts for Distribution of SEDS-S Scores from Question 19 Responses

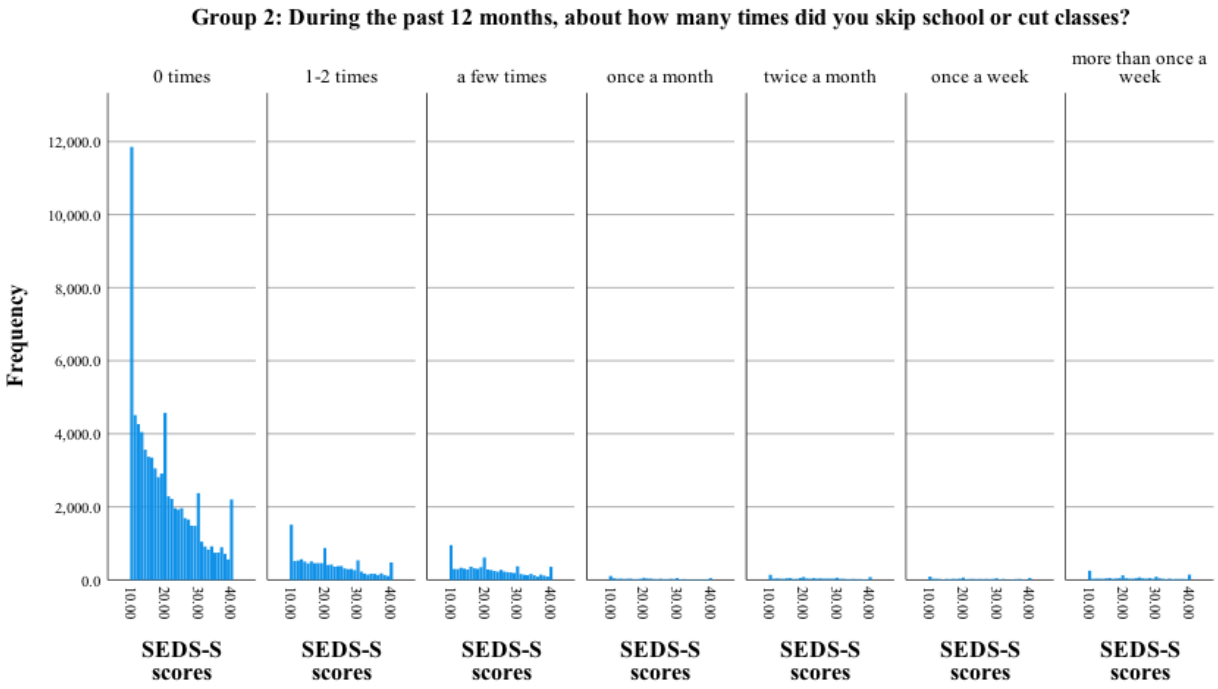


Appendix I

Frequency Distribution for SEDS-S Scores from Question 21 Responses

Question 21: During the past 12 months, about how many times did you skip school or cut classes?	*n*	Skewness (Std. Error)	Kurtosis (Std. Error)
0 times	76969	.779 (.009)	-.354 (.018)
1-2 times	12470	.551 (.022)	-.674 (.044)
A few times	8504	.459 (.027)	-.812 (.053)
Once a month	944	.342 (.080)	-1.006 (.159)
Twice a month	1279	.263 (.068)	-1.008 (.137)
Once a week	860	.262 (.083)	-1.058 (.167)
More than once a week	1636	.235 (.061)	-1.908 (.121)

Histogram Charts for Distribution of SEDS-S Scores from Question 21 Responses



Appendix J

Cross-Tabs for Grades and Question 19 Responses

Grade level		*0 days*	*1 day*	*2 days*	*3 or more days*	Total
Seventh	*n*	14743	5891	3717	3248	27599
	(%)	(53.4%)	(21.3%)	(13.5%)	(11.8%)	(100.0%)
Eighth	*n*	2735	1349	880	711	5675
	(%)	(48.2%)	(23.8%)	(15.5%)	(12.5%)	(100.0%)
Ninth	*n*	14892	6693	4219	3705	29509
	(%)	(50.5%)	(22.7%)	(14.3%)	(12.6%)	(100.0%)
Tenth	*n*	5019	2381	1645	1450	10495
	(%)	(47.8%)	(22.7%)	(15.7%)	(13.8%)	(100.0%)
Eleventh	*n*	10782	6180	4272	3809	25043
	(%)	(43.1%	(24.7%)	(17.1%)	(15.2%)	(100.0%)
Twelfth	*n*	3249	2040	1546	1495	8330
	(%)	(39.0%)	(24.5%)	(18.6%)	(17.9%)	(100.0%)
Total	*n*	51420	24534	16279	14418	106651
	(%)	(48.2%)	(23.0%)	(15.3%)	(13.5%)	(100.0%)

Cross-Tabs for Grades and Question 21 Responses

Grade level		*0 times*	*1-2 times*	*A few times*	*Once a month*	*Twice a month*	*Once a week*	*More than once a week*	Total
Seventh	*n*	22205	2996	1876	165	179	74	203	27698
	(%)	(80.2%)	(10.8%)	(6.8%)	(0.6%)	(0.6%)	(0.3%)	(0.7%)	(100.0%)
Eighth	*n*	4627	577	335	44	37	25	48	5693
	(%)	(81.3%)	(10.1%)	(5.9%)	(0.8%)	(0.6%)	(0.4%)	(0.8%)	(100.0%)
Ninth	*n*	23131	3241	2099	201	251	162	458	29543
	(%)	(78.3%)	(11.0%)	(7.1%)	(0.7%)	(0.8%)	(0.5%)	(1.6%)	(100.0%)
Tenth	*n*	7882	1313	823	86	105	90	209	10508
	(%)	(75.0%)	(12.5%)	(7.8%)	(0.8%)	(1.0%)	(0.9%)	(2.0%)	(100.0%)
Eleventh	*n*	17089	3542	2663	340	509	353	578	25074
	(%)	(68.2%)	(14.1%)	(10.6%)	(1.4%)	(2.0%)	(1.4%)	(2.3%)	(100.0%)
Twelfth	*n*	5083	1348	1074	141	254	204	237	8341
	(%)	(60.9%)	(16.2%)	(12.9%)	(1.7%)	(3.0%)	(2.4%)	(2.8%)	(100.0%)
Total	*n*	80017	13017	8870	977	1335	908	1733	106857
	(%)	(74.9%)	(12.2%)	(8.3%)	(0.9%)	(1.2%)	(0.8%)	(1.6%)	(100.0%)

Appendix K

Cross-Tabs for Grades and Question 19 Responses

Gender		*0 days*	*1 day*	*2 days*	*3 or more days*	Total
Male	*n*	26527	11444	7085	6002	51058
	(%)	(52.0%)	(22.4%)	(13.9%)	(11.8%)	(100.0%)
Female	*n*	24219	12687	8939	8171	54016
	(%)	(44.8%)	(23.5%)	(16.5%)	(15.1%)	(100.0%)
Total	*n*	50746	24131	16024	14173	105074
	(%)	(48.3%)	(23.0%)	(15.3%)	(13.5%)	(100.0%)

Cross-Tabs for Gender and Question 21 Responses

Gender		*0 times*	*1-2 times*	*A few times*	*Once a month*	*Twice a month*	*Once a week*	*More than once a week*	Total
Male	*n*	38777	6137	4024	483	576	390	789	51176
	(%)	(75.8%)	(12.0%)	(7.9%)	(0.9%)	(1.1%)	(0.8%)	(1.5%)	(100.0%)
Female	*n*	40125	6663	4700	473	729	500	908	54098
	(%)	(74.2%)	(12.3%)	(8.7%)	(0.9%)	(1.3%)	(0.9%)	(1.7%)	(100.0%)
Total	*n*	78902	12800	8724	956	1305	890	1697	105274
	(%)	(74.9%)	(12.2%)	(8.3%)	(0.9%)	(1.2%)	(0.8%)	(1.6%)	(100.0%)

Cross-Tabs for Transgender and Question 19 Responses

Transgender		*0 days*	*1 day*	*2 days*	*3 or more days*	Total
No, I am not transgender	*n*	47569	22566	14779	12943	97857
	(%)	(48.6%)	(23.1%)	(15.1%)	(13.2%)	(100.0%)
Yes, I am transgender	*n*	273	172	149	161	755
	(%)	(36.2%)	(22.8%)	(19.7%)	(21.3%)	(100.0%)
I am not sure if I am transgender	*n*	747	311	245	241	1544
	(%)	(48.4%)	(20.1%)	(15.9%)	(15.6%)	(100.0%)
Declined to respond	*n*	1254	532	345	386	2517
	(%)	(49.8%)	(21.1%)	(13.7%)	(15.3%)	(100.0%)
Total	*n*	49843	23581	15518	13731	102673
	(%)	(48.5%)	(23.0%)	(15.1%)	(13.4%)	(100.0%)

Cross-Tabs for Transgender and Question 21 Responses

Transgender		*0 times*	*1-2 times*	*A few times*	*Once a month*	*Twice a month*	*Once a week*	*More than once a week*	Total
No, I am not transgender	*n*	73562	11911	8098	871	1217	828	1541	98028
	(%)	(75.0%)	(12.2%)	(8.3%)	(0.9%)	(1.2%)	(0.8%)	(1.6%)	(100.0%)
Yes, I am transgender	*n*	474	116	77	20	23	11	33	754
	(%)	(62.9%)	(15.4%)	(10.2%)	(2.7%)	(3.1%)	(1.5%)	(4.4%)	(100.0%)
I am not sure if I am transgender	*n*	1083	204	152	26	23	18	44	1550
	(%)	(69.9%)	(13.2%)	(9.8%)	(1.7%)	(1.5%)	(1.2%)	(2.8%)	(100.0%)
Declined to respond	*n*	1859	303	232	24	26	25	52	2521
	(%)	(73.7%)	(12.0%)	(9.2%)	(1.0%)	(1.0%)	(1.0%)	(2.1%)	(100.0%)
Total	*n*	76978	12534	8559	941	1289	882	1670	102853
	(%)	(74.8%)	(12.2)	(8.3%)	(0.9%)	(1.3%)	(0.9%)	(1.6%)	(100.0%)

Cross-Tabs for Sexual Orientation and Question 19 Responses

Sexual orientation		*0 days*	*1 day*	*2 days*	*3 or more days*	Total
Straight (not gay)	*n*	41723	19717	12755	10983	85178
	(%)	(49.0%)	(23.1%)	(15.0%)	(12.9%)	(100.0%)
Gay or lesbian	*n*	639	329	293	285	1546
	(%)	(41.3%)	(21.3%)	(19.0%)	(18.4%)	(100.0%)
Bisexual	*n*	2287	1309	1011	1040	5647
	(%)	(40.5%)	(23.2%)	(17.9%)	(18.4%)	(100.0%)
I am not sure yet	*n*	2405	1056	665	677	4803
	(%)	(50.1%)	(22.0%)	(13.8%)	(14.1%)	(100.0%)
Something else	*n*	680	332	244	230	1486
	(%)	(45.8%)	(22.3%)	(16.4%)	(15.5%)	(100.0%)
Declined to respond	*n*	2096	841	547	515	3999
	(%)	(52.4%)	(21.0%)	(13.7%)	(12.9%)	(100.0%)
Total	*n*	49830	23584	15515	13730	102659
	(%)	(48.5%)	(23.0%)	(15.1%)	(13.4%)	(100.0%)

Cross-Tabs for Sexual Orientation and Question 21 Responses

Sexual orientation		*0 times*	*1-2 times*	*A few times*	*Once a month*	*Twice a month*	*Once a week*	*More than once a week*	Total
Straight (not gay)	*n*	64415	10228	6933	740	1028	713	1282	85339
	(%)	(75.5%)	(12.0%)	(8.1%)	(0.9%)	(1.2%)	(0.8%)	(1.5%)	(100.0%)
Gay or lesbian	*n*	1035	221	162	24	26	20	55	1543
	(%)	(67.1%)	(14.3%)	(10.5%)	(1.6%)	(1.7%)	(1.3%)	(3.6%)	(100.0%)
Bisexual	*n*	3734	842	627	76	124	69	175	5647
	(%)	(66.1%)	(14.9%)	(11.1%)	(1.3%)	(2.2%)	(1.2%)	(3.1%)	(100.0%)
I am not sure yet	*n*	3614	579	397	49	56	40	74	4809
	(%)	(75.2%)	(12.0%)	(8.3%)	(1.0%)	(1.2%)	(0.8%)	(1.5%)	(100.0%)
Something else	*n*	1062	195	136	19	25	18	36	1491
	(%)	(71.2%)	(13.1%)	(9.1%)	(1.3%)	(1.7%)	(1.2%)	(2.4%)	(100.0%)
Declined to respond	*n*	3114	460	300	31	34	22	50	4011
	(%)	(77.6%)	(11.5%)	(7.5%)	(0.8%)	(0.8%)	(0.5%)	(1.2%)	(100.0%)
Total	*n*	76974	12525	8555	939	1293	882	1672	102840
	(%)	(74.8%)	(12.2%)	(8.3%)	(0.9%)	(1.3%)	(0.9%)	(1.6%)	(100.0%)

Appendix L

Cross-Tabs for Hispanic/Latinx and Question 19 Responses

Hispanic/Latinx		*0 days*	*1 day*	*2 days*	*3 or more days*	Total
Yes	*n*	23187	11683	8440	7636	50946
	(%)	(45.5%)	(22.9%)	(16.6%)	(15.0%)	(100.0%)
No	*n*	27853	12684	7733	6686	54956
	(%)	(50.7%)	(23.1%)	(14.1%)	(12.2%)	(100.0%)
Total	*n*	51040	24367	16173	14322	105902
	(%)	(48.2%)	(23.0%)	(15.3%)	(13.5%)	(100.0%)

Cross-Tabs for Hispanic/Latinx and Question 21 Responses

Hispanic/Latinx		*0 times*	*1-2 times*	*A few times*	*Once a month*	*Twice a month*	*Once a week*	*More than once a week*	Total
Yes	*n*	37222	6380	4691	463	645	520	1145	51066
	(%)	(72.9%)	(12.5%)	(9.2%)	(0.9%)	(1.3%)	(1.0%)	(2.2%)	(100.0%)
No	*n*	42217	6550	4112	509	684	382	583	55037
	(%)	(76.7%)	(11.9%)	(7.5%)	(0.9%)	(1.2%)	(0.7%)	(1.1%)	(100.0%)
Total	*n*	79439	12930	8803	972	1329	902	1728	106103
	(%)	(74.9%)	(12.2%)	(8.3%)	(0.9%)	(1.3%)	(0.9%)	(1.6%)	(100.0%)

Cross-Tabs for Race/Ethnicity and Question 19 Responses

Race/ethnicity		*0 days*	*1 day*	*2 days*	*3 or more days*	Total
American Indian or Alaska native	*n*	1399	665	496	496	3056
	(%)	(45.8%)	(21.8%)	(16.2%)	(16.2%)	(100.0%)
Asian	*n*	9556	2680	1358	977	14571
	(%)	(65.6%)	(18.4%)	(9.3%)	(6.7%)	(100.0%)
Black or African American	*n*	1372	605	494	477	2948
	(%)	(46.5%)	(20.5%)	(16.8%)	(16.2%)	(100.0%)
Native Hawaiian or Pacific Islander	*n*	717	300	229	223	1469
	(%)	(48.8%)	(20.4%)	(15.6%)	(15.2%)	(100.0%)
White	*n*	15134	8606	5499	4715	33954
	(%)	(44.6%)	(25.3%)	(16.2%)	(13.9%)	(100.0%)

Race/ethnicity		*0 days*	*1 day*	*2 days*	*3 or more days*	Total
Mixed (two or more) races	*n* (%)	19165 (45.3%)	9738 (23.0%)	6926 (16.4%)	6437 (15.2%)	42266 (100.0%)
Total	*n* (%)	47343 (48.2%)	22594 (23.0%)	15002 (15.3%)	13325 (13.6%)	98264 (100.0%)

Cross-Tabs for Race/Ethnicity and Question 21 Responses

Race/ethnicity		*0 times*	*1-2 times*	*A few times*	*Once a month*	*Twice a month*	*Once a week*	*More than once a week*	Total
American Indian or Alaska native	*n*	2195	400	290	35	43	31	70	3064
	(%)	(71.6%)	(13.1%)	(9.5%)	(1.1%)	(1.4%)	(1.0%)	(2.3%)	(100.0%)
Asian	*n*	11468	1796	951	95	122	43	97	14572
	(%)	(78.7%)	(12.3%)	(6.5%)	(0.7%)	(0.8%)	(0.3%)	(0.7%)	(100.0%)
Black or African American	*n*	2211	333	269	24	32	24	67	2960
	(%)	(74.7%)	(11.3%)	(9.1%)	(0.8%)	(1.1%)	(0.8%)	(2.3%)	(100.0%)
Native Hawaiian or Pacific Islander	*n*	1061	194	123	28	21	17	28	1472
	(%)	(72.1%)	(13.2%)	(8.4%)	(1.9%)	(1.4%)	(1.2%)	(1.9%)	(100.0%)
White	*n*	25705	3993	2722	359	511	307	430	34027
	(%)	(75.5%)	(11.7%)	(8.0%)	(1.1%)	(1.5%)	(0.9%)	(1.3%)	(100.0%)
Mixed (two or more) races	*n*	31203	5275	3758	361	507	397	847	42348
	(%)	(73.7%)	(12.5%)	(8.9%)	(0.9%)	(1.2%)	(0.9%)	(2.0%)	(100.0%)
Total	*n*	73843	11991	8113	902	1236	819	1539	98443
	(%)	(75.0%)	(12.2%)	(8.2%)	(0.9%)	(1.3%)	(0.8%)	(1.6%)	(100.0%)

Appendix M

Cross-Tabs for Parent Education and Question 19 Responses

Parent education [a]		*0 days*	*1 day*	*2 days*	*3 or more days*	Total
Did not finish high school	*n*	5767	2646	1981	2069	12463
	(%)	(46.3%)	(21.2%)	(15.9%)	(16.6%)	(100.0%)
Graduated from high school	*n*	6280	3471	2586	2370	14707
	(%)	(42.7%)	(23.6%)	(17.6%)	(16.1%)	(100.0%)
Attended college but did not complete a four-year degree	*n*	5361	3103	2259	2045	12768
	(%)	(42.0%)	(24.3%)	(17.7%)	(16.0%)	(100.0%)
Graduated from college	*n*	25489	11814	6919	5574	49796
	(%)	(51.2%)	(23.7%)	(13.9%)	(11.2%)	(100.0%)
Total	*n*	42897	21034	13745	12058	89734
	(%)	(47.8%)	(23.4%)	(15.3%)	(13.4%)	(100.0%)

[a] Students who reported *don't know* were excluded from analysis

Cross-Tabs for Parent Education and Question 21 Responses

Parent education [a]		*0 times*	*1-2 times*	*A few times*	*Once a month*	*Twice a month*	*Once a week*	*More than once a week*	Total
Did not finish high school	*n*	8533	1744	1288	137	195	168	432	12497
	(%)	(68.3%)	(14.0%)	(10.3%)	(1.1%)	(1.6%)	(1.3%)	(3.5%)	(100.0%)
Graduated from high school	*n*	10603	1922	1344	158	220	161	327	14735
	(%)	(72.0%)	(13.0%)	(9.1%)	(1.1%)	(1.5%)	(1.1%)	(2.2%)	(100.0%)
Attended college but did not complete a four-year degree	*n*	9310	1559	1194	128	214	145	237	12787
	(%)	(72.8%)	(12.2%)	(9.3%)	(1.0%)	(1.7%)	(1.1%)	(1.9%)	(100.0%)
Graduated from college	*n*	38423	5898	3687	464	586	334	459	49851
	(%)	(77.1%)	(11.8%)	(7.4%)	(0.9%)	(1.2%)	(0.7%)	(0.9%)	(100.0%)
Total	*n*	66869	11123	7513	887	1215	808	1455	89870
	(%)	(74.4%)	(12.4%)	(8.4%)	(1.0%)	(1.4%)	(0.9%)	(1.6%)	(100.0%)

[a] Students who reported *don't know* were excluded from analysis

Cross-Tabs for Free/Reduced Lunch and Question 19 Responses

Eligible for free or reduced-price lunch		*0 days*	*1 day*	*2 days*	*3 or more days*	Total
Yes	*n*	19761	9552	6969	6525	42807
	(%)	(46.2%)	(22.3%)	(16.3%)	(15.2%)	(100.0%)
No	*n*	24718	11944	7287	5990	49939
	(%)	(49.5%)	(23.9%)	(14.6%)	(12.0%)	(100.0%)
Total	*n*	44479	21496	14256	12515	92746
	(%)	(48.0%)	(23.2%)	(15.4%)	(13.5%)	(100.0%)

Cross-Tabs for Free/Reduced Lunch and Question 21 Responses

Eligible for free or reduced-price lunch		*0 times*	*1-2 times*	*A few times*	*Once a month*	*Twice a month*	*Once a week*	*More than once a week*	Total
Yes	*n*	31300	5454	3862	392	512	414	978	42912
	(%)	(72.9%)	(12.7%)	(9.0%)	(0.9%)	(1.2%)	(1.0%)	(2.3%)	(100.0%)
No	*n*	38104	5912	3859	466	699	398	557	49995
	(%)	(76.2%)	(11.8%)	(7.7%)	(0.9%)	(1.4%)	(0.8%)	(1.1%)	(100.0%)
Total	*n*	69404	11366	7721	858	1211	812	1535	92907
	(%)	(74.7%)	(12.2%)	(8.3%)	(0.9%)	(1.3%)	(0.9%)	(1.7%)	(100.0%)