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Developmental Differences in School Climate Predictors of Chronic School Absenteeism

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DEVELOPMENTAL DIFFERENCES IN SCHOOL CLIMATE PREDICTORS OF CHRONIC SCHOOL ABSENTEEISM

By

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Abstract

School attendance problems (SAPs) represent a critical developmental challenge for youth. SAPs represent a spectrum from difficulties attending school despite complete school attendance to complete absence. Ongoing SAPs can lead to chronic absenteeism, which may be defined as missing 8.3–10.0% (15–18 days) of school in an academic year. However, debate exists over the utility of a demarcation for chronic absenteeism. A shortcoming of cutoffs to defining problematic chronic absenteeism is that demographic, academic, symptom, and family variables are not delineated clearly. Yet, the present intervention frameworks (e.g., multi-tiered systems of supports models; MTSS) rely on clear delineations of such variables to determine students in need of intervention. School climate, a construct central to both education and policy, is one variable that schools can target to address chronic absenteeism. Researchers have yet to examine developmental differences, such as age and grade, within the school climate framework related to absenteeism trajectories. More information regarding whether different developmental levels impact the relationship between school climate and absenteeism may be helpful in further elucidating data-informed demarcations in the MTSS framework. The present study aimed to further examine the validity of a 10% cutoff for chronic absenteeism by evaluating school climate predictors of absenteeism across developmental levels. The present study included three CHAID trees for elementary, middle, and high school students to identify high and low-risk pathways with respect to chronic absenteeism. Our findings revealed that student needs can be specific to developmental level and should be considered differently depending on the youth's age and grade.

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Chapter 1: Introduction

School attendance and completion are key benchmarks for healthy development in youth (Kearney & Graczyk, 2020). Regular school attendance provides opportunities for academic, social, and relational growth that promote critical thinking and reduce risk-taking tendencies (Brunello & De Paola, 2014). Regular school attendance is linked with short-term positive outcomes such as academic achievement and improved mental and physical health as well as long-term positive outcomes such as graduation from high school, adaptive financial and health-based choices in adulthood, and increased lifetime earning potential (Bacon & Kearney, 2020; Kearney & Graczyk, 2014; McFarland et al., 2019).

School attendance problems (SAPs), conversely, represent a critical developmental challenge and limiting factor for youth (Kearney, 2016). SAPs represent a spectrum from difficulties attending school despite complete school attendance to complete absence (Kearney et al., 2019). SAPs are linked with adverse short-term outcomes such as lower literacy rates and educational performance, less reading and math skill, mental health and interpersonal problems, substance use, and juvenile justice system involvement (Smerillo et al., 2018). SAPs are also linked with adverse long-term outcomes such as school dropout and, in adulthood, enhanced risk of marital problems, non-violent crime, occupational problems, and economic instability (McFarland et al., 2019).

Ongoing SAPs can lead to chronic absenteeism, which is typically defined as missing 8.3–10.0% (15–18 days) of school in an academic year (Balfanz & Byrnes, 2012; Rafa, 2017). An estimated 10-15% of U.S. students miss more than 10% of school days (Gottfried, 2019). An estimated 13% of students (over 6 million children) missed at least 13% of the school year in 2015-16 (National Center for Education Statistics, 2016). Approximately 14% of students missed

more than 15 days of school in 2013-14. Chronic absenteeism is highest among students living in poverty, students of color, and students with disabilities (Rafa, 2017).

Chronic absenteeism has adverse effects on student outcomes. Chronically absent students receive fewer hours of instruction and are more likely to need remediation when returning to school (Gottfried, 2019). Chronic absenteeism also causes students to feel alienated from their classmates, teachers, and schools leading to negative interactions and social disengagement (Gershenson, 2016). Chronically absent students tend to exhibit more disruptive behavior than those not chronically absent (Gottfried, 2014). Such disruptive behavior also slows instruction and affects educational outcomes for peers (Gottfried, 2019).

The adverse impacts of chronic absenteeism on students and classrooms have led to education and policy discussions about reducing absenteeism at a schoolwide level (Gottfried, 2019). School climate, a construct central to both education and policy, is one variable that schools can target to address chronic absenteeism (Balu & Ehrlich, 2018; Van Eck et al., 2017). School climate refers to the quality and character of school life and reflects norms, interpersonal relationships, and teaching and learning practices in an academic environment (Thapa & Cohen, 2017). A positive school climate may reduce absenteeism by increasing student self-competence, self-concept, and academic achievement (Darling-Hammon & Cook-Harvey, 2018). A negative school climate may exacerbate absenteeism by increasing rates of psychopathology as well as feelings of disinterest, frustration, and boredom (Hendron & Kearney, 2016). School climate intervention components, including curriculum-based skill development and acceptable school grounds and classroom structure, may boost school attendance (Bacon & Kearney, 2020).

School climate and absenteeism have been linked indirectly but less empirical evidence links these constructs directly (Hamlin, 2021). The available research on school climate as a

predictor of absenteeism suffers from varying definitions of school climate, differences in how school climate domains are measured, small sample sizes, and unclear definitions of absenteeism or levels of absenteeism (Hamlin, 2021; Van Eck et al., 2017). A key consequence of this lack of research is that school-based intervention systems designed to boost school climate and attendance may be less informed or effective.

School-based intervention systems for complex problems such as school climate and attendance often surround multitiered systems of support (MTSS) models. MTSS models address academic, behavioral, or socio-emotional domains by matching assessment and intervention strategies to individual student need across a tiered continuum of supports (McIntosh & Goodman, 2016). MTSS models often utilize three tiers to address students with varying needs for resources (Sandomierski et al., 2007). Tier 1 includes preventative practices to promote adaptive behavior such as school attendance; Tier 2 includes early intervention practices to address emerging academic, social, behavioral, or attendance problems; Tier 3 includes later intensive intervention practices to address chronic and severe academic, social, behavioral, or attendance problems (Bacon & Kearney, 2020; Dulaney et al., 2013). MTSS models ostensibly benefit from a clear demarcation between tiers to appropriately identify students for intervention, but this has not been done with respect to absenteeism (Kiani et al., 2018). Such demarcations of absenteeism could be informed by school climate factors that predict various attendance levels.

Bacon and Kearney (2020) examined school climate predictors of various levels of absenteeism severity to better inform demarcations in MTSS models. Several school climate academic mindset and social-emotional learning variables were characteristic of higher levels of absenteeism severity (15+%, 20+%). However, similar machine learning approaches using large data sets illustrate considerable heterogeneity of demographic, family, academic, symptom, and

other variables predictive of chronic absenteeism severity (Fornander & Kearney, 2019; Skedgell & Kearney, 2018). Therefore, whether a suitable cutoff exists for chronic absenteeism remains unclear and more research is needed. For example, more information regarding whether different developmental levels (e.g., age and grade) impact the relationship between school climate and absenteeism may be helpful. This is especially important given that absenteeism rates peak at particular grade levels such as kindergarten-first grade, early middle school, and high school (Balfanz & Byrnes, 2012; Benner & Yang, 2014).

The present study aimed to further examine the validity of a 10% cutoff for chronic absenteeism by evaluating school climate predictors of absenteeism across developmental levels. The present study includes three CHAID trees for elementary, middle, and high school students to identify high and low-risk pathways with respect to chronic absenteeism. Hypothesis 1 was that the low-risk absenteeism pathway for elementary school students will be associated with many, heterogeneous aspects of school climate and that the high-risk pathway will be associated with relatively fewer or more homogeneous aspects of school climate compared to middle and high school students. Hypothesis 2 was that the low-risk absenteeism pathway for middle school students will be associated with more heterogeneity for both high- and low-risk pathways compared to elementary school students, but less than that for high school students. Hypothesis 3 was that the low-risk absenteeism pathway for high school students will be associated with fewer, more homogeneous aspects of school climate and that the high-risk pathway will reveal considerable heterogeneity of school climate predictors compared to elementary and middle school students.

Chapter 2: Literature Review

School attendance/problems

School attendance/problems (SAPs) represent a longstanding area of interest for researchers across many disciplines. In the late 19th century, school attendance and school absenteeism emerged as an area of study for nascent disciplines, including education, psychology, and criminal justice. The shift of youth from industrial and agricultural settings to school settings in light of the labor rights movement led to school absenteeism being viewed as a legal and societal problem needing attention (Rury & Tamura, 2019). At the time, the focus was on illegal truancy and delinquency as the leading cause of school absenteeism (Gleeson, 1992). The mid-20th century saw a shift away from truancy and delinquency towards psychological approaches causing school absenteeism, including child fear/anxiety and family dysfunction (Johnson et al., 1941; Kennedy, 1965; Waldfogel et al., 1957). Later in the 20th century, following the Civil Rights Movement in the 1960s, the emergence of social stratification research led to researchers considering broader social contexts for school absenteeism (Sleeter, 2014). Today, the consideration of broader social contexts has led to SAPs being investigated by professionals from various fields such as criminal justice, educational policy, public health, and psychological science (Rocque et al., 2017). The various conceptualizations of SAPs from professionals across disciplines can often be divided into analytic and systemic approaches (Kearney, 2021). Analytic approaches focus on specific contexts and individual factors. Systemic approaches focus on overarching, macro-level variables. Together these two approaches have advanced the conceptualization of SAPs over the past century in regard to areas such as definition, classification, risk/protection, trajectory, measurement, and intervention (Kearney, 2021). At the same time, however, the multifaceted nature of these systemic and analytic approaches has led to a myriad of avenues of

investigation that are not always integrated (Kearney et al., 2022). Kearney (2021) suggested that analytic and systemic approaches should be integrated to alleviate inconsistencies across five major domains of the SAPs literature: definitions, risk factors, trajectories, measurement, and intervention.

Definitions

Analytic and systemic approaches differ in their definitions of SAPs. Analytic methods utilize a categorical classification system. Categorical approaches conceptualize phenomena as defined groups, ideally with distinct features and underlying mechanisms (Owen, 2014). Categorical approaches view phenomena as specific, static, and qualitatively different from one another (Coghill & Sonuga-Barke 2012). Several categorical terms have been utilized for SAPs, although considerable controversy and heterogeneity exist concerning these characterizations (Kiani et al., 2018). *School attendance* is traditionally defined as in-class physical presence during an academic day. *School absenteeism* is traditionally defined as in-class physical absence during an academic day (Kearney, 2019). *School attendance problems* refer to a myriad of different types of absences such as tardiness, skipped class, or missed time of day (Kearney, 2016). School attendance problems may eventually lead to *school stop out,* which refers to a temporary departure from school before graduation, or *school dropout,* which is a permanent departure from school before graduation (Boylan & Renzulli, 2017).

Categorical approaches to SAPs also surround instigating parties. *Truancy* refers to absences initiated by youth that are illegal and unexcused in nature (Sutphen et al., 2010). *School refusal* refers to absences initiated by youth with emotional difficulties such as anxiety and depression (Elliott & Place, 2019). *School refusal behavior* broadly refers to any child-motivated absenteeism that can encompass truancy and school refusal (Kearney & Silverman, 1996).

School withdrawal refers to parent-initiated absenteeism (Kearney, 2019). *School exclusion* refers to school-initiated absenteeism, such as suspension or expulsion (Maag, 2012).

Systemic approaches utilize a dimensional classification system. Dimensional approaches conceptualize phenomena across spectra or continua (Maynard et al., 2012). Phenomena on these spectra or continua are often viewed as broad, fluid, and quantitatively different from one another (De Boeck et al., 2005). Dimensional approaches attempt to account for the fluidity, scalability, and heterogeneity of SAPs by utilizing continua rather than defined groups. One dimensional approach conceptualizes SAPs along a continuum ranging from complete school attendance to school dropout (Kearney et al., 2019; Figure 1).

Figure 1. Spectrum of school attendance

Many schools take a dimensional approach to defining absenteeism severity. Absenteeism severity defined along a dimension uses continuous data to identify students presenting with varying levels of school attendance problems (Gentle-Genitty et al., 2020). However, dimensional approaches are unclear in their identification of when absenteeism becomes problematic and when absenteeism moves from acute to chronic (Kearney, 2021). Dimensional aspects can therefore be used to inform categorical terminology (e.g., school

attendance/school attendance problems) to identify when school absences are problematic and when problematic school absenteeism shifts from acute to chronic status (Kearney, 2021).

Integrating Definitions

Analytic and systemic definitions can be integrated using a common language. School attendance and school attendance problems are present in both approaches making them adequate starting points for developing a common language. *School attendance* can refer to participation in teaching and learning practices that enhances the likelihood of graduation. S*chool attendance problems* can refer to the lack of participation in teaching and learning practices that hinder the likelihood of graduation (Kearney et al. 2019). Each of these two categories has dimensional components. School attendance represents a continuum that includes in-person classrooms, flex/blended/hybrid approaches, home-based instruction, and virtual/distance learning (Linton, 2017). Similarly, school attendance problems represent a continuum that includes school-based distress, morning misbehaviors, tardiness, skipped classes, early departures, and full-day absences (Kearney 2019). The development of a common language would produce fewer but more reliable and valid categories informed by dimensional criteria (Kearney, 2019). Fewer categories would strengthen communication across systemic and analytic approaches leading to the advancement of a consistent metric across disciplines (Conry & Richards, 2018).

Risk Factors

The development of an integrative framework for risk factors for SAPs will further the understanding of how the chain of causation begins for SAPs. Analytic approaches to SAPs often focus on proximal factors, whereas systemic approaches to SAPs often focus on distal factors (Kearney, 2021). *Proximal* refers to immediate events and recent experiences that may serve as

direct antecedents for a result. Proximal risk factors include child, parent, family, and peer variables. *Distal* refers to underlying conditions and historical circumstances that affect an outcome (Martin & Martin, 2002; Woolf & Aron, 2013). Distal risk factors include school climate, educational and economic trends, and government policies. A shortcoming of the bifurcation of distal and proximal factors is that researchers often focus on one or the other without linking the two (Kearney, 2021; Zaff et al., 2021).

Integrating Influencing Factors

Integrated frameworks consider both distal and proximal risk and protective factors under the umbrella term *influencing factors* (Kearney, 2021). Influencing factors are often categorized by domains, such as child, parent, family, peer, school, community, and societal factors (Bacon & Kearney, 2020; Filipello et al., 2019; Gubbels et al., 2019). Researchers often use Bronfenbrenner's bioecological model to include aspects of each domain when conceptualizing SAPs (Melvin et al., 2019). This model positions individuals in the middle of a nested hierarchy of environments. Each environment influences one's growth and development over time (Bronfenbrenner, 1977). These environments expand outward from proximal variables (e.g., home, school) to distal variables (e.g., public policy, cultural, and historical contexts) (Melvin et al., 2019).

Child risk factors for school attendance problems often include adverse childhood experiences, functional abilities, and mental and physical health (Carless et al., 2015). Physical health conditions that may increase rates of school attendance problems include asthma, diabetes, obesity, and seizures (Meng et al., 2012). Psychological disorders that may increase rates of school attendance problems include anxiety, depression, conduct disorder, and oppositional defiant disorder (Allison et al., 2019; Wood et al., 2012). Children with disabilities and special

healthcare needs are more likely to be chronically absent than children without such needs (Reuben & Pastor, 2013). Adverse childhood experiences such as emotional, sexual, and verbal abuse are also associated with SAPs (Duke, 2020).

Parent risk factors include parenting style/involvement, quality of parent-child relationships, and parental health. Low levels of parental involvement, attachment, support or acceptance, and control are all correlated with school attendance problems (Gubbels et al., 2019). Parental chronic illness and emotional disorders (e.g., maternal depression) are associated with increased school attendance problems (Claessens et al., 2015). Parental substance abuse is associated with increased school attendance problems and eventual dropout (Casas-Gil & Navarro-Guzman, 2002).

Family risk factors include child responsibilities, family size, dynamics, and security. Children with caregiving responsibilities at home experience higher absenteeism rates (Stearns & Glennie, 2006). Youth from single-parent households and large family sizes experience higher absenteeism rates (Romero & Lee, 2008). Family dynamics, including conflict, expressiveness, cohesion, and involvement, are also related to SAPs (Fornander & Kearney, 2019). Children experiencing food insecurity within their household tend to miss more days of school than their counterparts (Henderson et al., 2014). Housing instability or homelessness also leads to increased absenteeism rates (Miller & Johnson, 2016).

Peer risk factors include peer acceptance, support, and rejection. Youth reporting low levels of peer acceptance and support experience higher rates of psychological difficulties, such as sub-threshold and pathological symptoms of depression, than those who report acceptance and support from their peers (Craun et al., 2017). Youth experiencing rejection from their peer group

are at greater risk of suffering harmful academic outcomes, including poor attendance and disenrollment from school (Bellmore, 2011).

Community risk factors include neighborhood location, poverty-related variables, and safety. Youth in high-poverty urban districts are two to four times more likely to be chronically absenteeism than the national average (Balfanz & Byrnes, 2018). Youth who change residences during the school year are 40% more likely to be chronically absent (Singer et al., 2021). Chronic absenteeism rates are positively correlated with violent crime rates and residential vacancy. Rates of violent crime and residential vacancy tend to reflect the perceptions of safety in one's residential neighborhood (Singer et al., 2021).

Societal, governmental, and cultural risk factors include shifts in macro-level variables and minority group membership. Societal and governmental risk factors include educational and economic trends, migration, labor shifts, and epi/pandemics (Kearney, 2021). Cultural risk factors include membership in minority groups such as Native American, Hispanic and African American. National absenteeism statistics overrepresent these minority groups (Rosenthal et al., 2020).

School risk factors include negative school experiences, lack of engagement, and misconceptions (Chang, 2018; Kearney, 2021). Negative school experiences include academic or social struggles, bullying, suspensions, undiagnosed disability, and inappropriate accommodations. Lack of engagement consists of the exclusion of culturally relevant instruction, few meaningful relationships with school staff, and weak ties with peers in school. Misconceptions include views that only unexcused absences are problematic, occasion absences are not a problem, and attendance only matters for older students. (Chang, 2018).

Trajectories

Trajectories refer to the chains of causation for the various influencing factors. Analytic and systemic approaches differ in their views on the continuity of absenteeism trajectories. Analytic approaches view absenteeism as discontinuous, such that absenteeism is problematic at specific stages. Absenteeism is thought to peak during transition periods, such as kindergarten-first grade, entries into middle and high school, and near the end of high school (Miller and Johnson 2016). Systemic approaches view absenteeism as continuous, such that absenteeism is linear, often along an accelerated or deaccelerated pathway. The focus of a systemic approach is to identify long-range patterns of absenteeism. For example, poor academic performance leads to school disengagement and increased absenteeism (Kearney, 2019). A shortcoming of the disparate trajectories is a focus on either continuous or discontinuous trajectories without considering that a trajectory can include aspects from both. A student may experience acute, then chronic absenteeism over time (discontinuous) while the underlying reason for the absence remains continuous (Kearney, 2021).

Integrating Trajectories

The continuous and discontinuous avenues can be integrated into *developmental cascade pathways* (Kearney, 2021). Developmental cascade pathways refer to aggregate outcomes of various interactions and transactions that lead to spreading effects across several areas of functioning (Masten and Cicchetti 2010). These pathways help increase integration because they consider both distal and proximal factors. Distal factors create a chain reaction leading to SAPs, while proximal variables increase/decrease the probability that the chain reaction occurs (Kearney, 2021). Regardless of whether SAPs are continuous or discontinuous, SAPs from an

integrative perspective involve distal and proximal influencing factors from various ecological domains.

Measurement

The separate measurement techniques used across approaches detract from the synergy required in an integrative framework. Analytic approaches measure SAPs through evaluation, while systemic approaches measure SAPs through assessment. Evaluation from an analytic approach refers to summative judgments of quality related to whether objectives have been achieved through past performance (Linfield & Posavac, 2018). Evaluation is frequently used to judge the utility of an intervention, program, or policy (Wholey et al., 2010). Assessment from a systemic approach refers to formative judgments of quality related to ongoing feedback on current performance and progress toward a certain outcome. Assessment allows for identifying areas needing improvement of an intervention, program, or policy (Andrade et al., 2019). A shortcoming of the bifurcation is analytic approaches place too heavy of an emphasis on student variables, while systemic approaches are at risk of misclassifying a student because this approach does not consider sensitivity and specificity (Kearney, 2021).

Integrating Measurement

There are two potential avenues for integrating disparate analytic and systematic measurement approaches, *nuanced early warning systems* and *data mining algorithms*. Nuanced early warning systems aim to identify students exhibiting signs of SAPs (Kearney, 2021). Chu et al. (2019) implemented such a system that used a categorical cutoff of 5 absences along with a dimensional consideration of the severity of the absence ranging from full days missed to tardiness. The benefits of this system included easier attendance tracking and identifying students in need of intervention (Chu et al., 2019). Data mining algorithms are large-scale

analyses that blend analytic assessment measures to increase specificity and broadband systemic assessment measures. Kearney and colleagues conducted several studies involving data mining algorithms (Bacon and Kearney 2020; Fornander and Kearney 2019; Skedgell and Kearney 2018). Key predictors of SAPs included older age, grades 1, 6–8, and 10–12, and school climate dimensions such as safety concerns and disliking school.

Intervention

The lack of integration across perspectives creates confusion among policymakers and impedes various school-based and clinical responses (O'Toole & Devenney, 2020). The disparate use of the term truancy serves as an example. Analytic approaches describe truancy via individual contextual factors to determine the specific reason for missing school on a particular day (Kearney, 2021). Remedies from an analytic approach include immediate and precise intervention efforts in which the reason for non-attendance is crucial (Ingul et al., 2019; Kearney, 2016). Systemic approaches describe truancy as illegal, deliberate, or unexcused school absenteeism (Rhodes et al., 2018). Remedies from a systemic approach include prevention efforts implemented on large-scale policy levels. A shortcoming of the bifurcation is analytic approaches are limited in their dissemination and implementation, while systemic approaches are not always geared toward the need of a specific student (Kearney, 2021).

Integrative Interventions

Multitiered systems of supports models (MTSS) represent an avenue for integration. MTSS aims to match individual needs with appropriate intervention strategies (McIntosh & Goodman, 2016). This matching represents the aim of analytic approaches, which is immediate and precise intervention efforts. MTSS integrates two previous systematic approaches to academic and behavioral support. First, academic response to intervention (RTI) models are a

preventative approach to improving schoolwide and individual achievements (Brown-Chidsey & Steege, 2010). RTI models employ universal instructions and further tiered supports in response to student needs. The decisions made based on this model rely on data from screening methods and progress monitoring tools. Second, schoolwide positive behavioral interventions and supports (PBIS) implement evidence-based practices through a three-tiered continuum of support to students: primary (universal) prevention practices, secondary prevention (early intervention) practices, and tertiary prevention (intensive intervention) (Sugai & Horner, 2009).

MTSS can be applied to address SAPs. MTSS aims to match individual student needs with appropriate intervention strategies across three tiers (Kearney & Childs, 2021). Tier 1 includes preventative practices to promote adaptive behavior such as school attendance; Tier 2 includes early intervention practices to address emerging academic, social, behavioral, or attendance problems; Tier 3 includes later intensive intervention practices to address chronic and severe academic, social, behavioral, or attendance problems (Bacon & Kearney, 2020; Dulaney et al., 2013). Figure 2 outlines interventions for school attendance problems at each tier (Kearney, 2016; Figure 2).

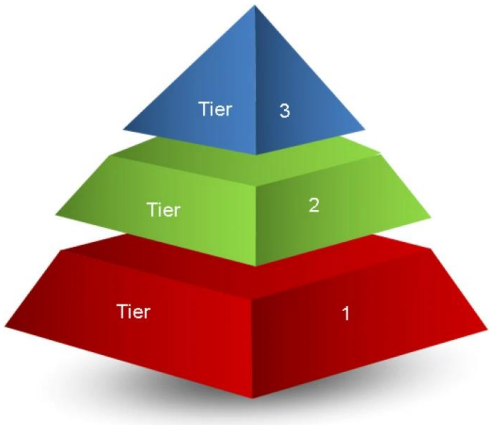

Figure 2. Multitiered systems of supports models (MTSS)

School Climate

MTSS is an example that schools are often the de facto provider of mental health services as MTSS involves school-based assessment and intervention strategies (Lyon et al. 2019). Hence, the quality of school climate is imperative to MTSS approaches to SAPs. School climate refers to the quality and character of school life (Cohen & Thapa, 2017). Thapa and colleagues' (2013) definition identified five dimensions of school climate: safety, relationships, teaching and learning, institutional environment, and the school improvement process.

Dimensions

Safety refers to the amount of physical and emotional security provided by the school and effective, fair disciplinary methods (Devine & Cohen, 2007; Wang & Degol, 2016). Numerous contextual variables impact school safety, including rules and norms, physical safety, and social-emotional safety (Thapa et al., 2013). Rules and norms refer to how students subscribe to the school's disciplinary practices. Physical safety refers to the extent to which violence (e.g., assault, fighting, and theft), aggression, and victimization are present and what steps are taken by

the school to safeguard the well-being of its members (Booren et al., 2011; Osher et al. 2010). Social-emotional safety refers to the supportive nature of the staff, availability of counseling services, and an absence of verbal bullying or harassment (Swearer et al., 2010).

Relationships refer to student beliefs that adults and peers in the school care about them both as students and individuals (Centers for Disease Control and Prevention, 2009). School climates that achieve a high degree of connectedness among their members develop safe, considerate, inclusive, and responsive environments (Ingul et al., 2019). Such environments offer the ideal framework for social, emotional, and academic learning (Corrieri et al., 2014).

Teaching and learning refers to the extent to which school staff and teachers clearly outline the sets of norms and goals that shape the learning environment (Thapa et al., 2013). The teaching and learning norms are the student's understanding of both individual and collective attitudes and performance (Ostroff et al., 2004). The teaching and learning goals are to ensure cooperative learning, group cohesion, respect, and mutual trust among the school's members (Kerr et al., 2004). Student perceptions of school climate are equally as important as staff perceptions of school climate as both may predict academic achievement (Maxwell, 2016).

Institutional environments refer to both school connectedness/engagement and the school's physical layout (Thapa et al., 2013). School connectedness/engagement refers to the degree to which students believe "adults and peers in the school care about their learning and about them as individuals" (Centers for Disease Control and Prevention, 2009, p. 3). Feeling connected to one's school is associated with increased life satisfaction, better social skills, and acceptance of diversity (Sampasa-Kanyinga et al., 2019). Physical layout refers to the size of the school and school space. Smaller school size is related to increased school connectedness (McNeeley et al., 2002). Larger schools accrue more bullying incidents than smaller schools, but

at a lower rate (Klein & Cornell, 2010). School space refers to classroom layout, feeling safe in unsupervised areas of a school, and the quality of school facilities (Uline & Tschannen-Moran, 2008).

MTSS Shortcomings

Unclear Chronic Absenteeism Demarcation

Bacon and Kearney (2020) examined school climate predictors of various levels of absenteeism severity to better inform demarcations in MTSS models. Several school climate academic mindset and social-emotional learning variables were characteristic of higher levels of absenteeism severity (15+%, 20+%). However, similar machine-learning approaches using large data sets illustrate considerable heterogeneity of demographic, family, academic, symptom, and other variables predictive of absenteeism severity (Fornander & Kearney, 2019; Skedgell & Kearney, 2018). Questions thus remain as to whether a suitable cutoff for chronic absenteeism (e.g., 10%) exists, and more research is needed. For example, more information regarding whether different developmental levels (e.g., age and grade) impact the relationship between school climate and absenteeism severity may be helpful. This is especially important given that absenteeism rates peak at particular times such as kindergarten-first grade, early middle school, and high school (Balfanz & Byrnes, 2012; Benner & Yang, 2014).

Due to the heterogeneity of variables predictive of absenteeism severity, Kearney (2021) suggests a shift away from a heavy emphasis on arbitrary, categorical thresholds (e.g., 10%, 15%) of problematic absenteeism (Dougherty & Childs, 2019). Instead, categorical cutoffs should be considered with more flexibility as educational agencies should consider wide-ranging, real-time dimensional data (education, health, housing) as they relate to key subgroup drivers of absenteeism (access to transportation, minority, and/or disability status). Such a shift would

enhance the understanding of which influencing factors are most pertinent for each subgroup, how evaluation and assessment strategies can vary across subgroups, and which intervention and treatment approach should be tailored to a specific subgroup (Dougherty, 2018). The present study aimed to support a shift away from a purely categorical approach by demonstrating the heterogeneity of school climate predictors of chronic absenteeism across developmental levels.

Developmental Trajectories

Researchers have yet to examine developmental differences, such as age and grade, within the school climate framework related to absenteeism trajectories. More information regarding whether different developmental levels (e.g., age and grade) impact the relationship between school climate and absenteeism may be helpful in further elucidating data-informed demarcations in the MTSS framework. This is especially important because absenteeism rates peak at particular grade levels such as kindergarten-first grade, early middle school, and high school (Balfanz & Byrnes, 2012; Benner & Yang, 2014). School absenteeism also typically peaks around 14–15 years of age (Balfanz & Byrnes, 2012; King & Bernstein, 2001), though school disengagement regularly begins in middle school and increases with age as various pressures start to develop such as academic, peer, and economic pressures (Bridgeland et al., 2006). An increase in absenteeism concurrent with various pressures with age suggests that developmental differences likely exist in school climate factors and should be considered in the MTSS framework.

Present Study

The present study aimed to advance the literature by identifying school climate predictors of chronic absenteeism across elementary, middle, and high school students at a 10% absenteeism cutoff. The present study intended to inform equitable and inclusive MTSS models

by identifying school climate risk factors for chronic absenteeism that are more specific to these developmental levels. The present study used chi-squared automatic interaction detection (CHAID) to identify risk factors for chronic absenteeism. CHAID is a nonparametric decision tree machine learning algorithm that utilizes flow-chart style decision-making for classification or regression purposes (Gupta et al., 2017). Nonparametric machine learning algorithms permit the identification of non-linearities within data sets, learning from multiple passes through data, and identifying predictors that conventional parametric models may not have identified (Berk, 2006; Rosellini et al., 2018). The present study utilized >10% of days missed cutoffs as the initial CHAID tree-splitting criterion. This cutoff of >10% was used because state-level policymakers often define chronic absenteeism as missing >10% of school days in an academic year (Rafa, 2017). School climate subscales were entered into the model as predictors. Three individual CHAID trees were conducted, one each for elementary, middle, and high school students.

The present study expected various degrees of heterogeneity of school climate predictors of absenteeism across different developmental levels. Previous machine learning approaches (e.g., Bacon & Kearney, 2020; Fornander & Kearney, 2019; Skedgell & Kearney, 2018) have revealed little homogeneity among school climate variables when examining chronic absenteeism cutoffs, though developmental levels in these approaches were not examined. The present study sought to further examine the validity of a 10% cutoff for chronic absenteeism by evaluating school climate predictors of absenteeism across developmental levels.

Hypotheses

The present study includes three CHAID trees for elementary, middle, and high school students to identify high- and low-risk pathways with respect to chronic absenteeism. CHAID

analyses are designed to generate rather than test hypotheses. As such, the first main hypothesis was that a more limited set of school climate variables will be identified for younger, elementary school students compared to middle and high school students with respect to a high-risk pathway. Hypothesis 1 was that the low-risk absenteeism pathway for elementary school students will be associated with many, heterogeneous aspects of school climate and that the high-risk pathway will be associated with relatively fewer or more homogeneous aspects of school climate compared to middle and high school students. Elementary students often rate school climate more favorably than middle and high school students (Bear et al., 2011). More favorable ratings of school climate among elementary school students may generate many school climate variables related to school attendance but allow for a more concentrated set of negative aspects of school climate that predict chronic absenteeism.

The second main hypothesis was that a less limited, more diverse set of school climate variables will be identified for middle school students compared to elementary school students with respect to a high-risk pathway. Hypothesis 2 was that the low-risk absenteeism pathway for middle school students will be associated with more heterogeneity for both high- and low-risk pathways compared to elementary school students, but less than that for high school students. School disengagement regularly begins in middle school and increases with age as various pressures start to develop such as academic, peer, and economic pressures (Bridgeland et al., 2006). The increase in a myriad of different stressors associated with middle school suggests the set of school climate predictors of absenteeism will be increasingly diverse with age.

The third main hypothesis was that a large, diverse set of school climate variables will be identified for high school students compared to elementary and middle school students with respect to a high-risk pathway. Hypothesis 3 was that the low-risk absenteeism pathway for high

school students will be associated with fewer, more homogeneous aspects of school climate and that the high-risk pathway will reveal considerable heterogeneity of school climate predictors compared to elementary and middle school students. High schools with higher chronic absenteeism rates are more likely to report moderate or negative school climates than positive school climates (Van Eck et al., 2017), suggesting that there are a variety of school climate variables predictive of chronic absenteeism for high school students. Concurrent with the increase in pressures with age, the high school population may be exposed to more factors potentially underlying absenteeism than middle and high school students (Bridgeland et al., 2006).

Chapter 3: Method

Participants

The present study included students from the Clark County School District (CCSD), which is coextensive with the Las Vegas metropolitan area. Students were in 4th-12th grades (N = 128,381). Participants were 50.1% female, aged 9–18 years (M = 13.98; SD = 2.48), and were Hispanic/Latino (45.5%), European American (26.7%), African American (11.9%), Asian American (7.6%), biracial/ multiracial (6.3%), Native Hawaiian/Pacific Islander (1.7%), and American Indian/Alaska Native (0.4%).

Measures

The present study utilized a sample of students that completed the School Climate and Academic Mindset Inventory (SCAMI; Kearney et al., 2020) as part of the Clark County School District of Nevada 2016-2017 Districtwide Study Survey (Appendix). The SCAMI is a 9 factor, 66 item self-report measure of school climate, academic mindset, and socioemotional learning. Confirmatory factor analysis supported the development of 9 scales: parent involvement and support (PIS), academic mindset (AM), social-emotional learning (SEL), safety (S), physical safety (PS), bullying (BLY), physical environment and resources (PER), respect for diversity (RD), and perceptions of school performance (PSP). The parent involvement and support, safety, physical safety, bullying, physical environment and resources, respect for diversity, and perceptions of school performance scales are rated on a 4-point agreement scale (1 = strongly disagree and 4 = strongly agree). A few of the items on the academic mindset scale are rated on a 5-point agreement scale (1 = not at all true and 5 = completely true), a few are rated on a 5-point frequency scale (1 = never and 5 = always). The social-emotional learning scale is rated on a 4-point agreement scale (1 = very difficult and 4 = very easy).

The SCAMI displayed adequate goodness-of-fit/invariance for males and females, younger age groups, and European American, biracial/multiracial, Hispanic, Native American, and Native Hawaiian/Pacific Islander students. Goodness-of-fit was lower but remained adequate for older age groups, African American and Asian American students. Internal consistency coefficients (Cronbach's alpha/Omega) for each subscale are as follows, PIS (0.61/0.61), AM (0.75/0.87), SEL (0.75/0.76). S (0.84/0.83), PS (0.72/0.74), BLY (0.81/0.80), PER (0.78/0.78), RD (0.79/0.80), PSP (0.83/0.84) (Kearney et al., 2020).

Procedures

The researchers accessed data from the Clark County School District of Nevada 2016-2017 Districtwide Study Survey. The data was accessed under the Family Educational Rights and Privacy Act (FERPA) under the organizations conducting studies for or on behalf of the educational agency criterion. The present study was approved by both the CCSD Institutional Review Board and the University of Nevada, Las Vegas Institutional Review Board.

Data Analyses

The present study utilized chi-square automatic interaction detection (CHAID) decision trees to identify the risk factors most predictive of chronic absenteeism. CHAID decision trees use flow-chart style decision-making for the classification of variables (Yarnold, 2019). CHAID splits data into the optimal number of branches at each tree node via chi-square tests (Gulati et al., 2016). Regarding the present study, the initial splitting criterion was absenteeism severity (10+% absenteeism). All the items from the SCAMI were hierarchically ordered from the top to the bottom of the tree, depending on their significance. More specifically, the items were ordered depending on the chi-square test and its p-value. At each node/level of the decision tree, chi-square tests identified the most significantly disproportionate percentages of absentee students.

The goal of the model was to accurately predict elevated absenteeism depending upon the response pattern identified throughout the tree. The present study included three decision trees with elementary, middle, and high school students. Absenteeism severity (10+%) was be used as the initial splitting criterion. The entirety of the SCAMI items were entered into the model and sorted hierarchically.

Chapter 4: Results

Elementary school

Items in the final risk cluster for elementary school students missing 10+% of school included: (1) Turn in assignments on the due date (SEL), (2) Knowing what my strengths are (SEL), (3) At my school, teachers tell me how I am doing in my classes (PSP), (4) I sometimes stay home because I don't feel safe at this school (PS), (5) I like my school (PSP), (6) There are some things I am not capable of learning (AM), (7) I would rather do easy work that I can do well than challenging work where I might learn more (AM), (8) This school is safe (S), (9) Actively participate in class (SEL). The collective tree model that best differentiated elementary school youth with 10+% absenteeism from youth with <10% absenteeism correctly identified 90.7% of participants (sensitivity: .00, specificity: 1.00). Item pathways that consisted of the highest-risk and lowest-risk avenues are in Figure 3.

Post hoc analyses were also conducted at the 10% absenteeism severity level to separately evaluate gender, disability, and race/ethnicity differences. The post hoc analyses were conducted with the lowest-risk avenues due to the high specificity of the model. Regarding gender differences, the low-risk pathway for female students was identical to the final item pathway (Figure 3). There were two unique items for male students in addition to the item: Turn in assignments on the due date (SEL), (1) This school encourages me to have healthy habits (S), and (2) The heating and air conditioning work well at this school (PER).

Regarding race/ethnicity, the low-risk pathway for African American students had three unique items (1) knowing what my strengths are (SEL), (2) this school encourages an appreciation of student diversity and respect for each other (RFD), (3) being prepared for tests (SEL). The low-risk pathway for Hispanic/Latino students had one unique item in addition to the

items: Turn in assignments on the due date (SEL), I sometimes stay home because I don't feel safe at this school (PS), (1) Knowing what is right or wrong (SEL). The low-risk pathway for White students had two unique items in addition to: Turn in assignments on the due date (SEL), (1) Knowing the emotions I feel (SEL), and (2) I don't participate in discussions because I am afraid people might think I am foolish (AM).

Regarding disability status, the low-risk pathway for students with an individualized education plan (IEP) had three unique items, (1) Teachers understand my problems (PSP), (2) Doing my schoolwork even when I do not feel like it (SEL), (3) Setting goals for myself (SEL). There were two unique items for students without an IEP addition to the item: Turn in assignments on the due date (SEL), (1) This school encourages an appreciation of student diversity and respect for each other (RFD), (2) My parents feel welcome to come to my school (PIS).

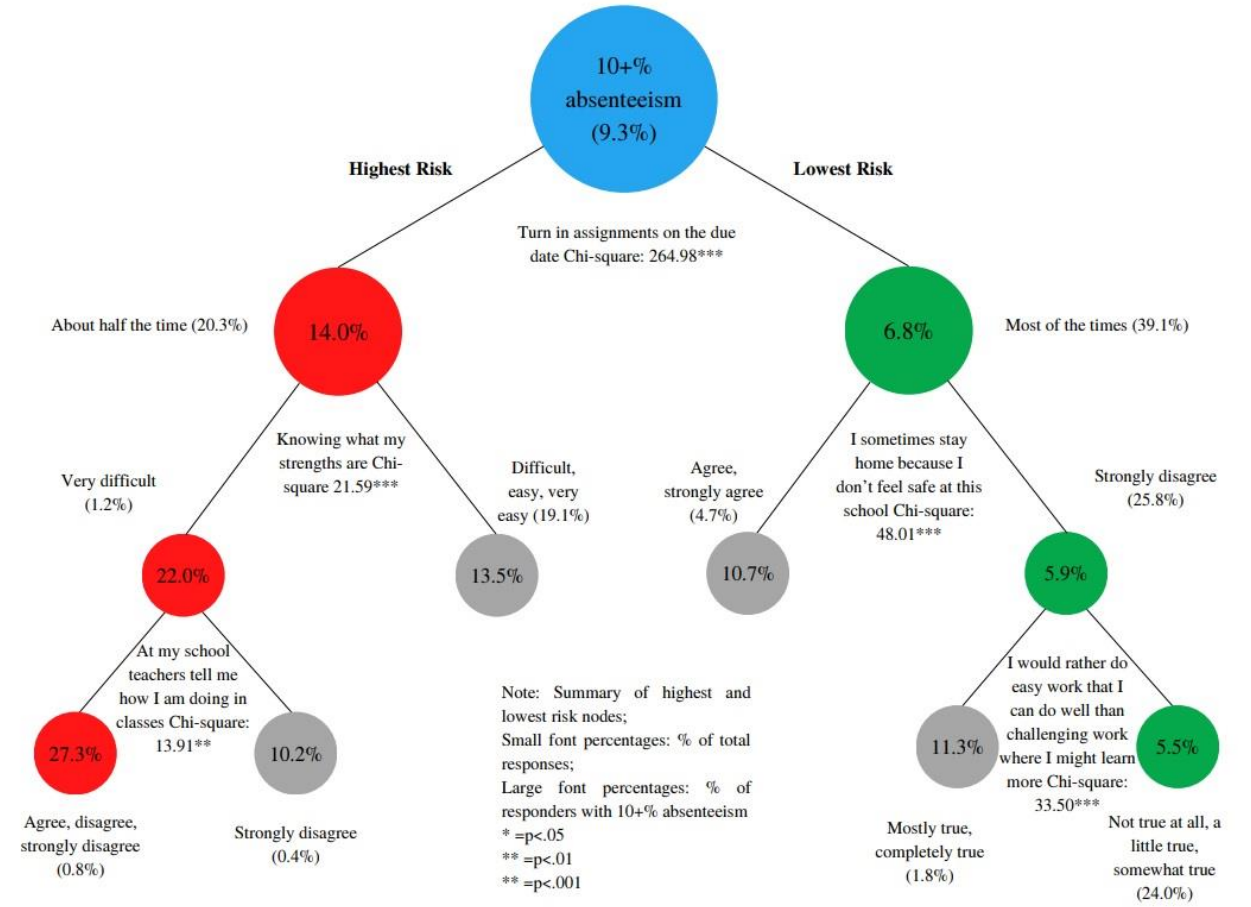

Figure 3. Highest and lowest risk pathways for elementary school students

Middle School

Items in the final risk cluster for middle school students missing 10+% of school included: (1) Turn in assignments on the due date (SEL), (2) I am getting a good education at this school (PSP), (3) I sometimes stay I home because I don't feel safe at this school (PS), (4) In my experience, everything at this school works or gets fixed quickly (PER), (5) I like my school (PSP), (6) There are some things I am not capable of learning (AM), (7) This school is clean (PER), (8) I don't participate in discussions because I am afraid people might think I am foolish

(AM), (9) Students feels safe in this school (S), (10) I don't ask questions in class because people might think my questions are not smart (AM). The collective tree model that best differentiated middle school youth with 10+% absenteeism from youth with <10% absenteeism correctly identified 89.0% of participants (sensitivity: .00, specificity: 1.00). Item pathways that consisted of the highest-risk and lowest-risk avenues are in Figure 4.

Regarding gender differences, the low-risk pathway for females had one unique item in addition to the items: Turn in assignments on the due date (SEL), I sometimes stay home because I don't feel safe at this school (PS), (1) There are some things I am not capable of learning (AM). The low-risk pathway for males had one unique item in addition to the items: Turn in assignments on the due date (SEL), I sometimes stay home because I don't feel safe at this school (PS), (1) I don't participate in discussions because I am afraid people will think I'm foolish.

Regarding race/ethnicity, the low-risk pathway for African American students had one unique item in addition to the items: Turn in assignments on the due date (SEL), I sometimes stay home because I don't feel safe at this school (PS), (1) Teachers understand my problems (PSP). The low-risk pathway for Hispanic/Latino students had one unique item in addition to the items: Turn in assignments on the due date (SEL), I sometimes stay home because I don't feel safe at this school (PS), (1) Help is available if I have trouble with my schoolwork (PSP). The low-risk pathway for White students had one unique item in addition to the items: Turn in assignments on the due date (SEL), I sometimes stay home because I don't feel safe at this school (PS), (1) I stop doing work if I feel like I can't do it well (AM).

Regarding disability status, the low-risk pathway for students with an IEP had two unique items in addition to the item: Turn in assignments on the due date (SEL), (1) I am getting a good

education at this school (PSP), (2) Students in this school are teased because of their clothing or physical appearance (BLY). Regarding disability status, the low-risk pathway for students without an IEP had one unique item in addition to the items: Turn in assignments on the due date (SEL), I sometimes stay home because I don't feel safe at this school (PS), (1) Students at this school threaten to hurt others (PS).

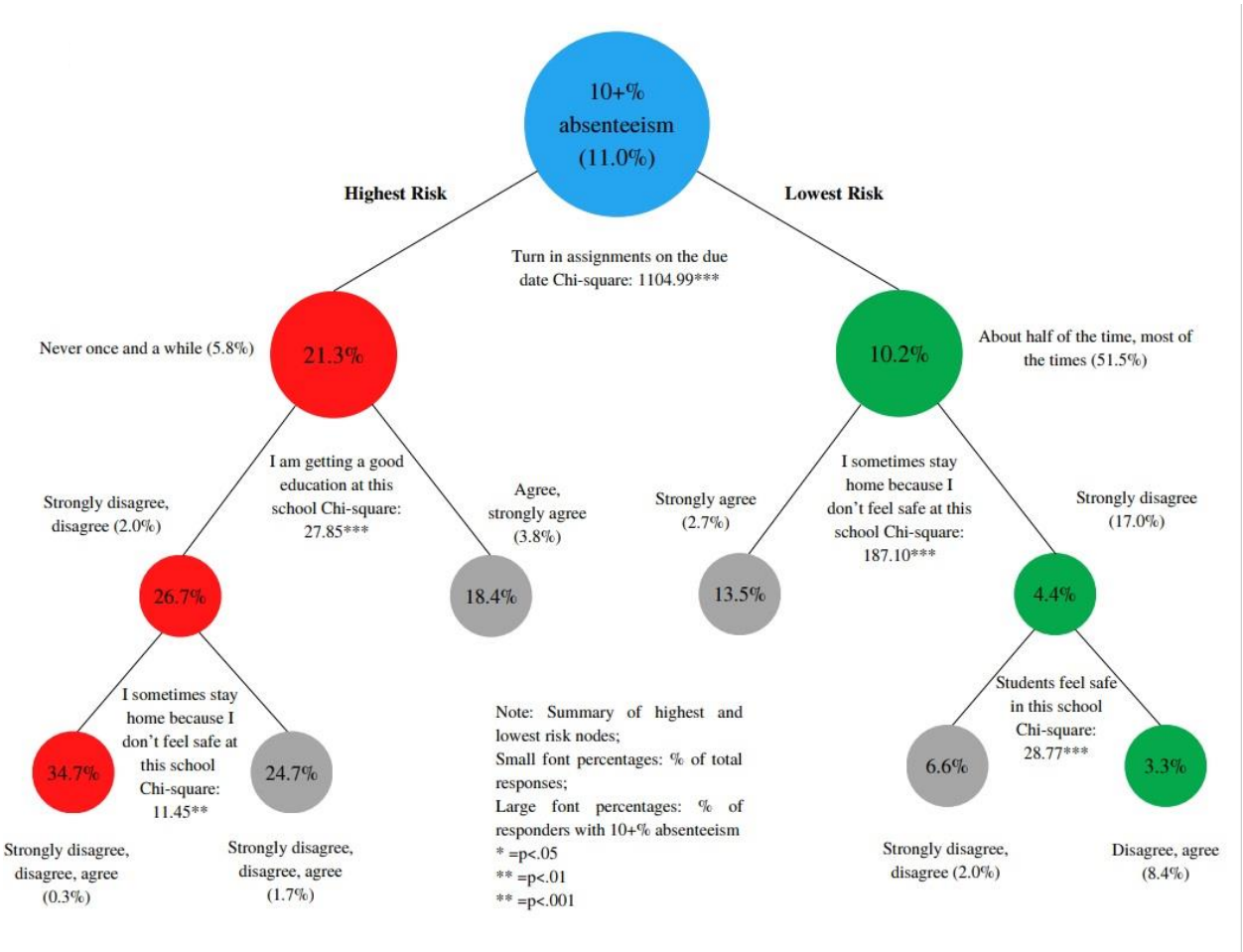

Figure 4. Highest and lowest risk pathways for middle school students

High School

Items in the final risk cluster for high school students missing 10+% of school included: (1) Turn in assignments on the due date (SEL), (2) I sometimes stay home because I don't feel safe at this school (PS), (3) My school encourages me to be courteous and respectful towards others (RFD), (4) I don't participate in discussions because I am afraid others might think I am foolish (AM), (5) This school is safe (S), (6) My teachers care about me (PSP), (7) This school encourages me to have healthy habits (S), (7) Students treat other students with respect, regardless of difference like race, ethnicity, gender, or disability (RFD), (8) If I am absent, there is a teacher or some other adult that will notice (PSP), (9) Students feels safe in this school (S), (10) I like my school (PSP), (11) Students know what to do if there is an emergency during school (S), (12) There are some things I am not capable of learning (AM). The collective tree model that best differentiated high school youth with 10+% absenteeism from youth with <10% absenteeism correctly identified 85.4% of participants (sensitivity: .00, specificity: 1.00). Item pathways that consisted of the highest-risk and lowest-risk avenues are in Figure 5.

Regarding gender differences, the low-risk pathway for females had two unique items in addition to the item: Turn in assignments on the due date (SEL), (1) I don't participate in discussions because I am afraid people might think I am foolish (AM), (2) Bullying is a problem at this school (BLY). The low-risk pathway for males had one unique item in addition to: Turn in assignments on the due date (SEL), I sometimes stay home because I don't feel safe at this school (PS), (1) I only volunteer to answer a question if I'm sure my answer is right (AM).

Regarding race/ethnicity, the low-risk pathway for African American students had two unique items in addition to the item: Turn in assignments on the due date (SEL), (1) There are some things I am not capable of learning (AM), (2) I only volunteer to answer a question if I am

sure my answer is right (AM). The low-risk pathway for Hispanic/Latino students had two unique items in addition to the item: Turn in assignments on the due date (SEL), (1) Bullying is a problem at this school (BLY), (2) School staff treats students with respect, regardless of race, ethnicity, gender, or disability (RFD). The low-risk pathway for White students had two unique items in addition to the item: Turn in assignments on the due date (SEL), (1) My teachers care about me (PSP), (2) Knowing what emotions I feel (SEL).

Regarding disability status, the low-risk pathway for students with an IEP had one unique item in addition to: Turn in assignments on the due date (SEL), (1) This school encourages an appreciation of student diversity and respect for each other (RFD). The low-risk pathway for students without an IEP was identical to the final item pathway (Figure 6).

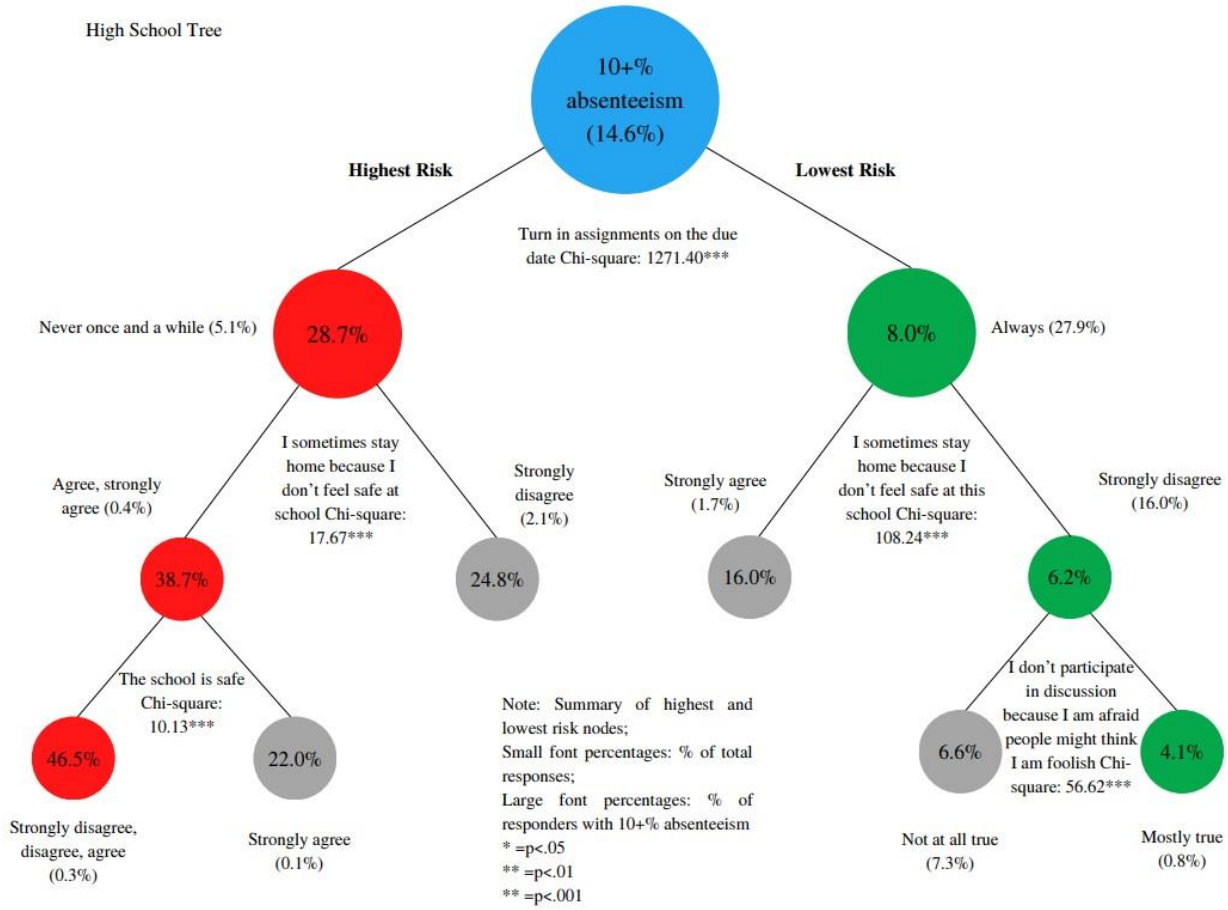

Figure 5. Highest and lowest risk pathways for high school students

Chapter 5: Discussion

The present study applied CHAID analysis, for a large data set of Clark County School District students to identify developmental differences (elementary, middle, and high school) in school climate predictors of students at low and high risk of chronic absenteeism at a 10+% cutoff. The present study had three aims (1) to examine developmental differences in school climate predictors of those at low risk for chronic absenteeism (2) to examine developmental differences in school climate predictors of those at high risk for chronic absenteeism (3) and to further examine the validity of a 10+% cutoff for chronic absenteeism.

Broad-based screening tools such as our CHAID analysis are designed to identify risk and protective factors that tend to favor either sensitivity or specificity (Shapiro et al., 2017). The CHAID analyses in the present study were in line with this principle as our CHAID trees favored specificity. Each of the three CHAID trees had desired specificity but lacked sensitivity, suggesting that our models are more suitable for identifying students in the low-risk chronic absenteeism pathway rather than identifying students at high risk for chronic absenteeism. Our models are better at identifying protective factors for chronic absenteeism (e.g., low-risk pathways) than risk factors (e.g., high-risk pathways).

Low-risk pathways

Our first aim was to examine developmental differences in school climate predictors of those at low risk of chronic absenteeism. For brevity, specific item responses are represented in the figures. One *school climate* item was common across low-risk chronic absenteeism clusters for developmental levels (e.g., “I sometimes stay home because I don’t feel safe at this school”). One *school climate* item was specific to developmental level (middle school: “students feel safe in this school). There were no *socio-emotional learning* items present across any of the low-risk

pathways. One *academic mindset* item was common across all risk clusters for developmental levels (e.g., “Turn in assignments on the due date”). Two *academic mindset* items were specific to developmental level (elementary school: “I would rather do easy work that I can do well than challenging work where I might learn more”; high school: “I don’t participate in discussions because I am afraid people might think I am foolish).

Our results from the low-risk chronic absenteeism pathway highlight the importance of academic mindset and physical safety, a dimension of school climate, in promoting attendance. Our results do not support socio-emotional learning as a mechanism for increasing attendance. A *physical safety* item was present across all low-risk pathways. Several researchers have emphasized the importance of students’ feelings of safety in promoting attendance. Safe school climates characterized by reduced aggression and violence contain lower rates of absenteeism and increased academic achievement (Michael et al., 2015). Student perceptions of safety were linked with reduced absenteeism and chronic absenteeism (Hamlin, 2021). Similarly, an academic mindset item was present across all low-risk pathways. *Academic mindset* presents as a target for promoting attendance. For example, Oyserman et al. (2006) successfully developed an intervention that reduced student absences by enhancing academic mindset in low-income and minority teens. Previous researchers have suggested that *socio-emotional learning* should be incorporated into universal prevention frameworks for absenteeism (Domitrovich et al., 2017). However, the relationship between socio-emotional learning and absenteeism is inconsistent (Taylor et al., 2017). There were no socio-emotional learning items present across any of the low-risk absenteeism pathways.

High-risk pathways

Our second aim was to examine developmental differences in school climate predictors

of those at high-risk of chronic absenteeism. For brevity, specific item responses are represented in the figures. There were no *school climate* items that were common across high-risk chronic absenteeism clusters for developmental levels. Several *school climate* items were specific to developmental level (e.g., elementary school, "at my school, teachers tell me how I'm doing in my classes", middle school: "I am getting a good education at this school;" high school: "This school is safe"). There were no common *social-emotional learning* items across each risk cluster. However, a social-emotional learning item, "knowing what my strengths are*",* was specific to elementary school students. One *academic mindset* was common across all risk clusters for developmental levels (e.g., "Turn in assignments on the due date"). There were no academic mindset items specific to a developmental level. Evaluation of the final collective tree models revealed two key items involved in splits, "Turn in assignments on the due date?" and "I sometimes stay home because I don't feel safe at this school." Our results from the high-risk chronic absenteeism pathway suggest increased heterogeneity compared to the low-risk pathway. The avenues for reducing risk factors associated with absenteeism among elementary, middle, and high school students will be examined further.

Elementary school

Efforts at reducing chronic absenteeism for elementary school youth should integrate academic mindset, school climate, and socio-emotional learning components. These findings support earlier assertions by Bacon and Kearney (2020) that school climate and academic mindset variables frequently co-occur, and our results extend to socio-emotional learning. Nascent efforts to integrate such components have proven successful. Cook et al. (2015) examined the efficacy of two widely used approaches to reducing internalizing and externalizing behavioral difficulties, Positive Behavioral Interventions and Supports (PBIS) and Social

Emotional Learning (SEL). Mental health and interpersonal problems are viewed as both a cause and effect of chronic absenteeism (Smerillo et al., 2018). Their results indicated that a combination of PBIS and SEL was more effective than either standalone intervention. PBIS is a teacher-centered approach that uses positive reinforcement to manage behavior. SEL is a student-centered approach that teaches students how to monitor their self-concept and how it impacts others (Cook et al., 2015; Gray-Lobe, 2023). Similarly, Sakiz (2017) developed an integrated program that effectively increased achievement, attendance, and positive perceptions regarding school climate and social-emotional learning among students with disabilities.

Middle School

Efforts at reducing chronic absenteeism for middle school youth middle could benefit from different intervention targets. School climate and academic mindset appear in risk profiles across developmental levels and likely represent universal intervention targets. However, the results from the present study suggest that socio-emotional learning is less pertinent to chronic absenteeism in middle school, instead, enhancing perceptions of school performance (e.g., “I am getting a good education at this school”) may provide a better avenue for intervention. Teachers can play a central role in enhancing school performance. For example, Sakiz (2012) utilized structural equation modeling to examine associations between perceived teacher support and student outcomes. The results indicated that student perceptions of the affective climate of learning environments are critical to promoting academic enjoyment, academic self-efficacy, and academic effort.

High School

Efforts at reducing chronic absenteeism for high school youth should focus on school safety as it appeared across risk profiles and may be particularly salient for high school students.

School safety is of continued importance, most notably, there was a significant increase in the rates of multiple-victim, school-associated homicides in the United States from July 2009 to June 2018 (Holland et al., 2019). Several researchers have demonstrated support for the link between feelings of safety and absenteeism. Bradshaw et al. (2014) reviewed a 3-factor model of school climate for high school students that included safety, engagement, and environment domains. The safety domain, defined as the fundamental need to feel safe in school, was supported as a key aspect of school climate. Rasberry et al. (2020) collected data from a neighboring high school before and after the shooting at Marjory Stoneman Douglas High School in 2018. The students surveyed after the shooting reported lower feelings of safety at school, and higher absenteeism rates. Bacon and Kearney (2020) found safety-related items to be present across multiple profiles of risk for chronically absent students.

Tier Demarcations

Our third aim was to examine the validity of a 10+% cutoff for chronic absenteeism. MTSS models benefit from a clear demarcation between tiers to appropriately identify students for intervention, but this has not been done with respect to absenteeism (Kiani et al., 2018). The cutoffs for various levels of severity (e.g., chronic absenteeism) are not clearly delineated across demographic, academic, symptom, and family variables (Skedgell & Kearney, 2018; Fornander & Kearney, 2019, 2020). Hence, some argue in support of a cutoff of 10+% of days missed (Bauer et al., 2018; Rafa, 2017) while others argue in support of a cutoff of 15+% of school days missed (Bacon & Kearney, 2020; (Fornander & Kearney, 2019; Ingul et al., 2019; Skedgell & Kearney, 2018).

The findings from the present study align with previous findings of considerable heterogeneity among variables at the 10+% cutoff for both low and high-risk pathways. For low-

risk pathways, one *school climate* item ("I sometimes stay home because I don't feel safe at this school") and one *academic mindset* item (e.g., "Turn in assignments on the due date") were common across all developmental levels. For high-risk pathways, one school climate item ("I sometimes stay home because I don't feel safe at this school") appeared in risk profiles across developmental levels. However, across low and high-risk pathways, several school climate and socio-emotional learning items were specific to developmental level. Our results have implications for clinical, research, and policy discussions.

Implications

Clinical

Our study has implications for clinical practice. The existing research on school climate as a predictor of absenteeism is scant, leading to less effective school-based intervention systems designed to boost school climate and attendance (Hamlin, 2021; Van Eck et al., 2017). Our study supports the notion that a negative school climate may exacerbate absenteeism and extends to identifying potential developmentally specific targets for school-based intervention systems (Hendron & Kearney, 2016). For elementary school youth, interventions should integrate academic mindset, school climate, and socio-emotional learning components (e.g., Cook et al., 2015). For middle school youth, interventions should instead focus on enhancing perceptions of school performance (e.g., Sakiz, 2012). For high school youth, interventions should focus on enhancing school safety.

Our study outlines potential universal intervention targets in addition to developmentally specific targets. Our models were better at identifying protective factors for chronic absenteeism than risk factors. One academic mindset item ("Turn in assignments on the due date") and one school climate item ("I sometimes stay home because I do not feel safe at school") were present

across the low-risk pathways for elementary, middle, and high school students.

Our results present avenues to enhance integration across analytic and systemic perspectives through the integration of developmentally specific and universal variables. Interventions for chronic absenteeism suffer from a lack of integration across analytic and systemic perspectives, leading to deficits in various school-based and clinical responses (O'Toole & Devenney, 2020). From a systemic perspective, academic mindset and school climate, most notably, feelings of physical safety, could represent universal intervention targets. From an analytical perspective, interventions could focus on developmentally specific risk and protective factors to target chronic absenteeism. For example, socio-emotional learning interventions would likely be more effective with elementary school youth rather than middle and high school youth.

Research

A key challenge facing current researchers is determining the point at which a specific case of absenteeism may be considered problematic (Kearney, 2022). Our results support a shift from using arbitrary categorical cutoffs to determine problematic chronic absenteeism toward using functional impairment criteria. Functional impairment refers to the point when one's symptoms interfere with daily functioning and performance (Kearney, 2022). Higher rates of SAPs are linked with higher degrees of functional impairment across individual, school, social, and family domains. Impairment in the individual domain is characterized by increased rates of psychological disorders (anxiety, depression) and physical health conditions (respiratory conditions) (Finning et al., 2020). Impairment in the school domain is characterized by less academic competence, lower grades, poor performance on standardized assessments, and decreased likelihood of school completion (Simon et al., 2020). Impairment in the social domain

is characterized by increased social anxiety, difficulties with conflict resolution, victimization, and feelings of loneliness and isolation (Kearney, 2022). Impairment in the family domain is characterized by enmeshment, isolation, conflict, and detachment (Lindblom et al., 2017).

Policy

Our study has implications for policy implementation. Analytic and systemic perspectives have both been applied to school attendance problems. However, the current bifurcation has led to an overreliance on analytic-categorical cutoffs for chronic absenteeism. Many states continue to use a 10+% demarcation for chronic absenteeism despite conflicting evidence to support such a criterion (Kirksey, 2019). The present study supports the notion that absenteeism severity cutoffs are not cleanly defined across demographic (e.g., developmental level), academic, symptom, and family variables (Skedgell and Kearney 2018; Fornander and Kearney 2019, 2020). Cutoffs also have numerous drawbacks: they are susceptible to gaming, they rely on aggregated data that minimizes individual differences, and they neglect students who are just below the 10+% cutoff (Gee 2018, 2019; Hutt 2018). Hence, categorical cutoff models do not often align well with recent absenteeism studies or solutions (Bauer et al., 2018).

Policy discussions should shift from emphasizing arbitrary, discriminatory, and categorical thresholds of chronic absenteeism (Dougherty and Childs 2019; Kearney, 2021). Rather, the use of dimensional criteria to create fewer but more reliable and valid categories would enhance consistency across analytic and systemic perspectives leading to a uniform metric across educational jurisdictions (Conry and Richards 2018). Such a shift would permit educational agencies to have increased autonomy to consider real-time dimensional data from multiple sources (e.g., education, health, housing, and social services to inform decision-making (Kearney, 2021).

Limitations and Future Directions

Our study has a few limitations. First, our sample was limited to students in grades 4-12 and did not include data from students in grades K-3. School disengagement, a construct oft linked with chronic absenteeism, increases with age as pressures start to develop such as academic, peer, and economic pressures (Bridgeland et al., 2006). Therefore, our study may have benefited from including data from younger students. Similarly, while our sample was large and diverse, all the participants were sampled from one school district in the Southwestern United States. Third, the SCAMI was based on student self-report. Multi-informant assessments of school climate-related constructs are optimal (Konold et al., 2018). Similarly, our study may have been susceptible to sampling bias because chronically absent students may have been absent during the dissemination of the study. Next, our study was conducted using a cross-sectional design. School climate and other contextual factors often have different trajectories over time, and longitudinal analysis may have been useful for further supporting the effects found (Coelho et al., 2020). Future studies should utilize a longitudinal design across the K-12 spectrum while utilizing multi-informant reports.

Findings from the present study have implications for MTSS prevention and intervention frameworks. The goal of MTSS is to match individual needs with appropriate intervention strategies (McIntosh & Goodman, 2016). Our findings revealed that student needs can be specific to developmental level and should be considered differently depending on the youth's age and grade. The heterogeneity of our findings further calls into question the validity of a 10+% cutoff (Kiani et al., 2018).

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Zaff, J. F., Margolius, M., Varga, S. M., Lynch, A. D., Tang, C., & Donlan, A. E. (2021). English Learners and High School Graduation: A Pattern-Centered Approach to Understand within-Group Variations. *Journal of Education for Students Placed at Risk (JESPAR)*, *26*(1), 1-19. https://doi.org/10.1080/10824669.2020.1780597

Curriculum Vitae

Michael Fensken

fenskenm@gmail.com

EDUCATION

August 2020-Present	The University of Nevada, Las Vegas M.A., Clinical Psychology, Expected May 2023 Thesis: *Developmental Differences in School Climate Predictors of Chronic School Absenteeism* Expected defense date: April 3, 2023 Advisor: Dr. Christopher Kearney
2016-2020	The College at Brockport, State University of New York (SUNY) B.S., Psychology, May 2020 Overall GPA: 3.98 Departmental GPA: 4.00

CLINICAL EXPERIENCE

The UNLV School Refusal and Anxiety Disorders Clinic
August 2022 – Present
Supervisor: Dr. Christopher Kearney, PhD

Provided evidence-based therapeutic services to children and adolescents in individual and family formats. Youth were aged 5-17 with a range of behavioral and emotional concerns related to school attendance problems including depressive disorders, anxiety disorders, obsessive-compulsive and related disorders, trauma and stressor-related disorders, and disruptive, impulse-control, and conduct disorders. Utilized a cognitive-behavioral framework including specific protocols such as Coping Cat, Habit Reversal Training, and Collaborative Assessment and Management of Suicidality (CAMS). Comprehensive intakes were completed utilizing semi-structured interviews, behavior rating scales, and symptom inventories. Provided frequent consultation to school personnel regarding diagnostic impressions and recommendations to inform IEP and 504 plans. Supervised and trained undergraduate research assistants who assisted in assessment scoring and exposures.

The PRACTICE
A UNLV Community Mental Health Clinic
August 2021-August 2022
Supervisor: Dr. Tara Raines, PhD

I provided evidence-based therapeutic services to children and young adults in individual and family formats at a campus-based community mental health center. Clients were aged 9-23 with a range of behavioral and emotional concerns including neurodevelopmental disorders, depressive disorders, anxiety disorders, trauma and stressor related disorders, and disruptive, impulse-control, and conduct disorders. Conducted bi-weekly intakes for children, adolescents, and adults. Provided psychological assessment services for children ages 6-12 utilizing cognitive, achievement, and executive functioning assessments as well as behavior rating scales and symptom inventories. Comprehensive assessments focused on differential diagnosis, developing treatment plans, and providing applicable referrals.

OTHER CLINICAL EXPERIENCE

Contact Community Services, Intern on a Crisis Hotline
Spring 2017-May 2020

Completed a 50-hour training program in order to staff the hotline that covered active listening, paraphrasing, reflection of feelings, suicide/crisis calls, and emergency intervention. An additional responsibility is making referrals and working on Telecare Calls. Telecare was a service that offers a daily phone call that provides reassurance, emotional support, medication reminders. I've completed over 100 hours on the hotline.

The Porch Counseling Group, shadowed Dr. Jeffery Snarr's Clinical Psychologist, clinic
September 2018-December 2018

Upon obtaining client permission, I observed several sessions of cognitive behavioral therapy to treat a client with social anxiety disorder.

Unstress II, Group Facilitator
Fall 2017-Spring 2018

Led groups of students and community members through six sessions of mindfulness activities. The sessions included: goal setting, value defining, guided breathing exercises, and acceptance-commitment techniques.

PUBLICATIONS

MANUSCRIPTS SUBMITTED FOR PUBLICATION

Desrochers, M., Zhang, J., & **Fensken, M.** (2021) *Evaluation of Teacher, and Self feedback in Students' acquisition of Behavioral Observation Skills. International Journal of Teaching and Learning in Higher Education.* Manuscript in press.

Fensken, M., Forzano, & Soda, L. (2020). *Mediational Role of Intolerance of Uncertainty in the Relationship Between Impulsivity and Worry and Anxiety in American College Students. Journal of American College Health.* Manuscript submitted for publication.

PRESENTATIONS

INVITED TALKS AND PAPER PRESENTATIONS

Fensken, M., & Kearney, C.A. (2023, April). *School Refusal and Anxiety Disorders Clinic.* Presentation at Clark County School District Nurse Orientation.

***Fensken, M.** & Kearney, C.A. (2022, November). Multi-Tiered Approach Model to Addressing Absenteeism* [Training] Presented at Warwickshire Government, Virtual Presentation

***Fensken, M.** & Kearney, C.A. (2022, September). When Children Refuse School: A Cognitive-Behavioral Therapy Approach* [Department Colloquium] Presented at Kamehameha Schools, Virtual Presentation

Fensken, M., & Kearney, C.A. (2022, May). *School Refusal and Anxiety Disorders Clinic.* Presented at Clark County School District Nurse Orientation.

***Fensken, M.** & Kearney, C.A. (2021, December). When Children Refuse School: A Cognitive-Behavioral Therapy Approach* [Department Colloquium] Presented at Arkansas State University, Virtual Presentation

POSTER PRESENTATIONS

Forzano, L. B., **Fensken, M**., Soda, L., Jaramillo, S., Longfellow, S., & Teti, L. (2022, June 24). *COVID-19, Anxiety, Intolerance of uncertainty and impulsivity in college students* [Poster presentation]. SAEOPP McNair/SSS Scholars Research Conference, Atlanta, GA, United States.

Ellis, K.., Burke, S., Arcaina, V.J., **Fensken, M.** & Kearney, C.A. (2022, April 27-30). *Negative Posttraumatic Cognitions and Expressive Suppression in Maltreated Youth*. Western Psychological Association, Portland, OR

Fensken, M., Bacon, V.R., Rede, M., Fornander, M.J., & Kearney, C.A. (2022, April 2). *School Climate Factors as Correlates of School Absences* [Poster session]. Annual Graduate & Professional Student Research Forum Convention, UNLV

Fensken, M., Desrochers, M., & Zhang, J. (2022, March 21 -22). Effectiveness of Teacher, Self-Assessment, versus Combined Feedback on College Students' Behavioral Observation Skills. AABSS, Virtual Conference

Fensken, M., Bacon, V.R., Rede, M., Fornander, M.J., & Kearney, C.A. (2021, November 18-21). *School Climate Factors as Correlates of School Absences* [Poster session]. ABCT 2021 Convention, Virtual Conference

Sorama, M., Forzano, L. B., **Fensken, M.,** Bakalik, C., Graupman, H., Soda, L., & Teti, L. (2021, August). *Delay Discounting and Anxiety: Cross-Cultural Comparison between American and Japanese College Students.* Japanese Association for Behavior Analysis [Virtual].

Fensken, M., Forzano, L.B., Becker, G. & Bakalik, C. (2020, August). *Anxiety, impulsivity, and intolerance of uncertainty in college students* [Poster session]. APA 2021 Convention, Virtual Conference

Bacon, V.R., **Fensken, M**., Rede, M., Fornander, M.J., & Kearney, C.A. (2021, May 26-27). *School Climate and Student-Based Contextual Factors Predict School Attendance* [Poster session]. APS 2021 Convention, Virtual Conference.

Sorama, M., Forzano, L. B., **Fensken, M**., Bakalik, C., Soda, L., Teti, L., & Graupman, H., & (2021, May). *Cross-cultural comparison of delay discounting in American and Japanese college students.* Poster presented at the International Association for Behavior Analysis Convention. [Virtual].

Fensken, M., Zhang, J., & Desrochers, M. (2021, April). Evaluation of the Effectiveness of Teacher Versus Self-Evaluation/Self-reflection Feedback to Increase Students' Behavioral Observation Skills [Presentation]. SUNY Student Success Summit, [Virtual].

Fensken, M., & Forzano, L.B. (2021, April). *Anxiety, impulsivity, and intolerance of uncertainty*. Poster presented at the National Conference on Undergraduate Research. [Virtual].

Forzano, L. B., Sorama, M., **Fensken, M**., Teti, L., Graupman, H., Soda, L., & Bakalik, C., (2021, April). *Validity of impulsivity measures in adults.* Poster presented at Scholars Day, SUNY Brockport. [Virtual].

Sorama, M., Forzano, L. B., **Fensken, M**., Bakalik, C., Soda, L., Teti* L., & Graupman, H., & (2021, April). *Cross-cultural comparison of delay discounting in American and*

Japanese college students. Poster presented at Scholars Day, SUNY Brockport. [Virtual].

Fensken, M., Forzano, L. B., Soda, L., Bakalik, C., Teti, L., & Graupman, H., (2021, March). *Corelates of anxiety in college students.* Poster presented at the Eastern Psychological Association Convention. [Virtual].

Forzano, L. B., Sorama, M., **Fensken, M.**, Teti, L., Graupman, H., Soda, L., & Bakalik., (2021, March). *Validity of impulsivity measures in adults.* Poster presented at the Eastern Psychological Association Convention. [Virtual].

Usbeck, K. N., Nieto, C. V., **Fensken, M**., Rede, M., & Kearney, C. A. (2020, November). *Gender Differences in Internalizing and Externalizing Behaviors of Children with Selective Mutism*. Poster presented at the UNLV Outreach Undergraduate Research Symposium, Las Vegas, NV. [Virtual].

Nieto, C. V., Usbeck, K. N., **Fensken, M.,** Bacon, V., & Kearney, C. A. (2020, November). Racial Differences in School Absenteeism. Poster presented at the UNLV Outreach Undergraduate Research Symposium, Las Vegas, NV. [Virtual].

Hoefer, S., **Fensken, M**., & Forzano, L.B. (2020, May). *Substance use and impulsivity*. [Poster session] Presented at The Association for Behavior Analysis International Conference, Washington D.C, [Virtual].

Fensken, M., & Forzano, L.B. (2020, May). *Anxiety, Impulsivity, and Intolerance of Uncertainty*. [Poster session] Presented at The Association for Behavior Analysis International Conference, Washington D.C, [Virtual].

Fensken, M., Forzano, L.B., Bakalik, C., & G. Becker. (2020, April). *Anxiety, Impulsivity, and Intolerance of Uncertainty*. [Poster session] Presented at Scholar's Day, The College at Brockport, State University of New York, Brockport, NY, [Virtual].

Hoefer, S., **Fensken, M**., & Forzano, L.B. (2019, April). *Substance use and impulsivity*. [Poster session] Presented at Scholar's Day, The College at Brockport, State University of New York, Brockport, NY.

Hoefer, S., **Fensken, M**., & Forzano, L.B. (2019, February). *Substance use and impulsivity*. [Poster session] Presented at The Eastern Psychological Association Annual Meeting, New York, NY.

GRANTS RECEIVED

Fensken, M. (2021). "School Climate Factors as Correlates of School Absences" Competitive Travel Grant for Graduate Students, The University of Nevada-Las Vegas ($1200)

Fensken, M. (2020). "Anxiety, Impulsivity and Intolerance of Uncertainty" Competitive Travel Grant for Undergraduate Students, The College at Brockport, SUNY ($240).

Fensken, M. (2019). "Anxiety, Impulsivity and Intolerance of Uncertainty" Competitive Psi Chi Spring Undergraduate Research Grant to purchase a copyrighted measure ($700).

Fensken, M. (2017). "Substance Use and Impulsivity" Competitive Travel Grant for Undergraduate Students, The College at Brockport, SUNY ($240).

RESEARCH EXPERIENCE

RESEARCH ASSISTANT

UNLV School Refusal and Anxiety Disorders Clinic, Dr. Christopher Kearney, PhD

August 2020-present

Analyzed data and prepared for publications, posters, and oral presentations. Coordinated with community organizations (i.e., Clark County School District, Truancy Diversity Program, Truancy Prevention Outreach Program). Created formalized laboratory procedures to increase productivity, cohesion, and effectiveness.

Evaluation of Feedback to Learners, Dr. Marcie Desrochers

Spring 2019-May 2020

Measured the effect of different types of instruction on student performance. I created operational definitions to measure/code behavior, created answer keys, established interrater reliability with other researchers, input and analyzed data.

Meditation and Mindfulness, Dr. Jeffery Snarr

Fall 2017-2018

Led a group of participants through six-sessions of a mindfulness program that utilized skills such as goal setting and acceptance-commitment therapy. Assisted with manuscripts that needed to be revised and resubmitted for publication.

Self-Control and Impulsivity, Dr. Lori-Ann B. Forzano

Fall 2017-May 2020

Work included using Skinner boxes to examine the delay discounting paradigm in children and adults. I compiled IRB applications, prepared manuscripts, scheduled/ran participants, input/analyzed data. I also led a study that aimed to link anxiety with impulsivity, establish concurrent validity for a new measure of self-control. I reviewed literature, drafted a proposal, gained approval, received a grant, developed a protocol, and trained research assistants to run participants and input/analyze data.

TEACHING EXPERIENCE _____

Graduate Assistant, Part Time Instructor

University of Nevada, Las Vegas

Courses taught: PSY 101

Summer 2021 – Present

Taught multiple sections of undergraduate PSY 101 each semester in both in-person and online formats. Classroom size was approximately 35 students. Utilized a variety of instructional techniques including traditional lectures, short videos, class discussions, and collaborative small group activities. Educational goals of the class included developing an understanding of the discipline of psychology, developing scientific values and skills, fostering personal growth, and enhancing library and computer skills.

Refugee and Immigrant Self-Empowerment, Summer Academy Leader

Summer 2019

Helped children in grades K-7 learn how to read, write English and complete math problems. Worked to foster physical, emotional, and mental development of children through engaging in constructive and supportive activities.

Contact Community Services, Peer trainer for new volunteers on the Crisis hotline.

Summer 2019

I instructed the volunteers on the body of a call, active listening, and suicidal callers. Helped acquaint the caller to fielding calls as well as making outbound Telecare calls. Provided support and feedback to volunteers.

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SUNY Brockport, Peer tutor for various psychology courses

I tutored for the following courses: PSH 202 Statistics for Psychology, PSH 301 Research Methods in Psychology, PSH 341 Biopsychology, PSH 351 Cognitive Psychology, CRJ 471 Research Methods in Criminal Justice

VOLUNTEER EXPERIENCE

UNLV Outreach Undergraduate Mentoring Program

Graduate Mentor

Provided mentorship to undergraduate psychology students from under-represented backgrounds to increase student retention and graduate school applications. Duties included one-on-one mentoring, linking students to resources (e.g., faculty, contacts, research experience, etc.), providing CV development, editing application materials, guiding career planning, and attending mentoring training.

UNLV Psychology Clinical Student Committee

Cohort Representative

Served on the CSC, the voice of Clinical PhD students to department faculty, university organizations, and other relevant committees. Duties included advocating for student needs, increasing student engagement, increasing student and faculty recognition, planning social events, improving department cohesion, establishing alumni connections, and addressing the diversity needs of students.

PROFESSIONAL AFFILIATIONS

2021	Nevada Psychological Association	2018	Eastern Psychological Association
2021	Association for Psychological Science	2018	Alpha Chi
2021	Western Psychological Association		
2020	Association for Behavior Analysis International	2018	Omicron Delta Kappa
2019	American Psychological Association	2016	Delta College Program
2018	Psi Chi – International Honor Society of Psychology		

PROFICIENCY

SPSS	Qualtrics
Microsoft Office	Redcap
GPower	SONA

ADDITIONAL SKILLS

Certified by CITI to experiment with human research participants
Child Abuse and Protection Certification to work with child participants
CPR/First Aid certified by the Red Cross

ACADEMIC AWARDS

2022 Phi Kappa Phi Inductee

2020 Brockport Psychology Department Scholar of the Year. I was named the top scholar in the department, which houses over 500 students.

2019	Delta College Program Scholar Award	2018	Psi Chi Inductee
2018	Tutor of the Month Recipient	2017-2019	President's List
2018	Alpha Chi Inductee	2016	SUNY Brockport Dean's List with Honors
2018	Omicron Delta Kappa Inductee	2016-2018	President's Scholarship