

CAN WE INCREASE ATTENDANCE AND DECREASE CHRONIC ABSENTEEISM
WITH A UNIVERSAL PREVENTION PROGRAM?
A RANDOMIZED CONTROL STUDY OF ATTENDANCE AND TRUANCY
UNIVERSAL PROCEDURES AND INTERVENTIONS

by

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DISSERTATION ABSTRACT

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Title: Can We Increase Attendance and Decrease Chronic Absenteeism with a Universal Prevention Program? A Randomized Control Study of Attendance and Truancy Universal Procedures and Interventions

The purpose of this study was to examine the effects of a school-wide attendance and truancy intervention and universal procedures (ATI-UP) on student attendance. Student attendance was measured through average daily attendance and the percentage of students who would be considered chronically absent, i.e., missing 10% or more of school. The sample included 27 elementary schools in Oregon implementing school-wide positive behavior intervention and supports (SWPBIS) with varying levels of fidelity. Results indicate that schools can have a moderate effect on increasing average daily attendance (ADA) and a small effect on decreasing chronic absenteeism, although these results were not statistically significant. SWPBIS implementation did not act as a statistically significant moderator on the ATI-UP effects, although the treatment effect on ADA decreased with higher SWPBIS implementation.

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CHAPTER I

INTRODUCTION

For students to learn the critical skills and knowledge taught in schools, they must, by default, attend school regularly. Despite this, research demonstrates that a significant proportion of students don't attend school regularly enough to maximize learning outcomes (Balfanz & Byrnes, 2012b; Bruner, Discher, & Chang, 2011; Romero & Lee, 2007). These patterns start early and can predict later absenteeism. The Chicago Consortium of Chicago School Research (CCSR) found that students who were chronically absent in preschool were five times more likely to be chronically absent in second grade (Ehrlich, Gwynne, Pareja, & Allensworth, 2013). In Oregon, children with the worst attendance in kindergarten continued to have the worst attendance in fifth grade (Buehler, Tapogna, & Chang, 2012). Balfanz, Durham, and Plank (2008) found that up to 60% of chronically absent first graders in Baltimore continued this pattern over the next 4 to 5 years of their educational careers. These patterns continued through high school (Buehler et al., 2012). Patterns of absenteeism start early, continue through students' educational careers, and affect many students.

School absenteeism can have far-reaching consequences with negative outcomes for society at the individual, classroom, school, and community levels (Fantuzzo, Grim, & Hazan, 2005). Absenteeism can be excused or unexcused absences, and in this chapter, the term truancy will be used as a synonym for unexcused absences. In Chapter II I will highlight the differences between the terms used in the literature. At the individual level, truancy is predictive of maladjustment (Reid, 1984), poor academic performance and school dropout (Chang & Romero, 2008; Gottfried, 2010; Schoeneberger, 2012),

substance abuse (Henry & Huizinga, 2007), delinquency (Garry, 1996), and unemployment (Alexander, Entwisle, & Horsey, 1997). At the classroom level, instruction suffers when absenteeism is widespread and can even impact students who are not absent. If a large number of students are chronically absent, a teacher may feel the need to slow down the pace of instruction for the entire class to provide opportunities for the chronically absent to catch up, causing a loss of valuable instructional time (Blazer, 2011; Chang & Jordan, 2011; Nauer, White, & Yerneni, 2008). At the school level, students may suffer due to reduced funding, as attendance rate is often a partial determinant of funding (Chang & Jordan, 2011; Smink & Reimer, 2005). At the community level, truancy has been associated with increased crime rates (Garry, 1996). Chronic absenteeism is a challenge for our nation that affects too many students and has negative implications for society.

The Challenges of Chronic Absenteeism

While it is widely agreed upon that chronic absenteeism is a problem with significant ramifications, variability in definitions of “chronic absenteeism” and differences in reporting across agencies impact the development and evaluation of interventions to address this problem. Variability in definitions and the ways that schools report absenteeism make it difficult for researchers to compare interventions and for policy makers to understand the prevalence and magnitude of this problem. There is a growing consensus by researchers that a common definition is needed for truancy and chronic absenteeism so there can be consistent benchmarks for systematic measurement (Gentle-Genitty, Karikari, Chen, Wilka, & Kim, 2015; Maynard, McCrea, Pigott, & Kelly, 2013). If states and districts have one definition and reporting mechanism,

researchers and policies makers will have the ability to compare the problem's impact on a national scale.

A lack of consistent government oversight contributes to this problem as a standard definition is not mandated across states. This provides states with the flexibility to create their own definitions, however, few have done so. Balfanz and Byrnes (2012a) found that only six states reported chronic absenteeism, and only two of the six used the same definition, which was a student missing 10% or more of total school days in a year. Even within states that provided standard definitions, districts and principals also used a variety of other categories to classify students as chronically absent and/or truant (Balfanz & Byrnes, 2012a; Gentle-Genitty, 2008; Gentle-Genitty et al., 2015; Spradlin, Cierniak, Shi, & Chen, 2012). This makes it difficult, if not impossible, for researchers and policy makers to compare rates across schools, districts, and states. A lack of standardization of chronic absenteeism also reduces the ability to make valid comparisons of interventions seeking to mitigate the problem.

The good news is that states are beginning to pay attention to measuring chronic absenteeism. In a brief released by the Data Quality Campaign and Attendance Works (2014), it was reported that 45 states collect data on students' total attendance, while only 21 states track students considered chronically absent. Even when chronic absenteeism is tracked, definitions vary: only 11 states defined chronic absenteeism in the same way, as missing an excessive amount of school for any reason. Seven of these states considered students chronically absent when they missed a certain percentage of days, while the other four used a certain number of days to quantify students as chronically absent. Across our nation, the most commonly used metrics for measuring the problem of

absenteeism are average daily attendance (ADA), number of days absent, and percentage of days absent. The pros and cons of each metric are discussed next.

Average Daily Attendance

Many schools and districts rely on ADA as an indicator of student attendance. As part of the No Child Left Behind Act (2001), most states required elementary and middle schools to report ADA along with achievement tests in mathematics and English in Grades 3 to 8. Schools often set an annual goal of 95% ADA to document that the majority of their students are present in school on any given day. ADA is calculated based upon the number of students present in school that day. It does not take into account whether the absence is excused or unexcused.

The challenge with using ADA to measure attendance is that although schools may achieve the 95% goal, 15–20% of their student population could still miss 10 or more days of school, which Chang and Jordan (2011) define as a high level of absenteeism. For example, in a school of 100 students, 95% ADA could include five students absent on any given day. This group would not consist of the same five students, since schools would utilize additional supports (i.e., truancy court) to enforce compulsory attendance laws after students miss a certain number of days, as defined by their district or state. Rather, it is quite possible that schools have a core group of students taking turns being absent and missing more than 10% of their education. Attendance issues are being masked by ADA, because there is a lack of focus on the number of students who are missing a large number of school days. Schools need a more valid measure to identify individual students who are at risk for chronic absenteeism.

Total number of days absent. Another attendance measure some states and districts use in conjunction with ADA is the total number of days that a student is absent. Even within this metric, there are state-level variations. Of the 11 states that report this metric, seven states count only unexcused absences, one state counts excused absences, and four states count all missed days (Data Quality Campaign, 2014). Maryland and Florida report students who miss 21 or more days of school but restrict their counts to students enrolled from the beginning of the school year. Georgia and Nebraska report the number of students who miss 15 or more days of school (Balfanz & Byrnes, 2012a).

There are several challenges to using total number of days as a metric for identifying students who are chronically absent. First, students have to miss a prescribed number of days before they can be identified as at risk, which can prevent them from receiving interventions earlier in the school year. For example, if a student misses, on average, 3 days per month, it may take 5 to 7 months before they miss enough school to be identified. Second, highly mobile students may not be identified due to the varying definitions that schools use to track their data (e.g., only counting those enrolled at the beginning of the year). Relying on total number of days absent may mask the scope of a school or district's attendance problems and limit access to interventions.

Percentage of missed days. Many researchers and policy makers advocate for the use of percentage of missed days as the standard definition for absenteeism at the federal and state level. Attendance Works, the National Center for Children in Poverty (NCCP), and the Center for Evaluation and Education Policy (CEEP) define chronic absenteeism as any student who misses 10% or more school days during an academic year for *any* reason (Attendance Works, 2011; Chang & Romero, 2008; Spradlin et al., 2012). This

includes excused and unexcused absences as well as time lost to suspension. In practical terms, this translates into 18 days out of a 180-day calendar year, or almost 1 month of school. Chang and Romero (2008) found that if schools used percentage of days missed (10%) as opposed to ADA, up to 50% of students in some schools would be considered chronically absent.

There are several reasons why there is an advantage to using a percentage to identify students who are at risk for developing chronic absenteeism. First, research suggests missing 10% of school is associated with lower academic performance and dropping out (see next section). Second, earlier in the school year under this framework, schools and communities can identify and monitor students who are at risk (Balfanz & Byrnes, 2012b; Chang, 2014; Dubay & Holla, 2015; Kearney & Graczyk, 2014). Third, the definition allows for better detection of attendance problems for students who are highly mobile (Balfanz & Byrnes, 2012b). For example, if a student moves into a new school in October and misses 2 days during the first 2 weeks (2 out of 10 available days) the school can initiate interventions for missing 20% of school. Finally, a standard definition across districts and states will allow for consistent benchmarks for systematic measurement and the ability to compare the problem's impact on a national scale (Balfanz & Byrnes, 2012a; Maynard et al., 2013; Reid, 2012).

Consequences of Absenteeism

Regardless of the definition used, the impact of chronic absenteeism is related to many negative outcomes, including the following: academic outcomes, graduation rates, and crime. In the next sections, I explore these consequences in detail.

Chronic absenteeism and academics. Chronic absentees do not have the same opportunities to access education as do their regularly attending peers. Chronic absenteeism is linked to academic failure within the school year and negatively impacts later academic performance (Buehler et al., 2012; Gottfried, 2014). The CCSR found that chronic absenteeism of 4-year-old students was correlated with weaker kindergarten readiness scores, including letter recognition and pre-literacy scores (Ehrlich et al., 2013). Chang and Romero (2008) examined the Early Childhood Longitudinal Study, Kindergarten (ECLS-K) data set that followed 21,260 children from the time they entered kindergarten until they reached fifth grade. They found that chronic absenteeism in kindergarten was linked to lower first grade academic performance, especially for students who are Latino. In addition, they found that chronic kindergarten absence was correlated with lower fifth grade achievement for students who came from low-income households. In mathematics, a one standard deviation increase in absences in kindergarten was associated with an approximately 12% reduction in mathematics development during first grade and a 14% reduction in literacy skills (Ready, 2010). Numerous researchers have concluded that chronic absenteeism in kindergarten or first grade leads to lower levels of academic achievement in later grades (Chang & Jordan, 2011; Chang & Romero, 2008; Gottfried, 2010; Ready, 2010; Roby, 2004).

Students who are habitually absent have lower academic achievement throughout their school career (Chang & Jordan, 2011; Chang & Romero, 2008; Gottfried, 2010; Ready, 2010; Roby, 2004). Students who are chronically absent for multiple years have the lowest reading achievement levels in fifth grade as compared with students who were chronically absent in only one grade level (Buehler et al., 2012). Bruner et al. (2011)

found that only 17% of students with chronic absenteeism were proficient readers in third grade as compared with 64% of those who attended school regularly. Attendance matters for accessing education and meeting grade level standards.

Gottfried has conducted several studies on the relation between absenteeism and academic outcomes. In 2014, Gottfried investigated whether increased absences led to lower outcomes for students. Using the ECLS Kindergarten Class of 2010–2011, he compared two groups of students, those who missed 11 to 19 school days (*moderate chronic absenteeism*) and those who missed 20+ school days (*strong chronic absenteeism*). He found that the negative effects of absenteeism were larger for strong chronic absenteeism for reading (ES = -0.17), math (ES = -0.20), approaches to learning (ES = -0.16), eagerness to learn (ES = -0.23), and internalizing problem behaviors (ES = 0.17). Moderate chronic absenteeism's negative effects were more consistent with his prior research on absenteeism (see below). He concluded that strong levels of absenteeism are more negatively related to student outcomes than prior research might have suggested.

Gottfried (2010) performed a longitudinal analysis of third and fourth grade students in Philadelphia elementary schools. He gathered attendance and achievement data for approximately 86,000 elementary through middle school students from 1994 to 2001. Grade point average (GPA) was utilized as the primary outcome variable. He concluded that there was a significant relationship between attendance and achievement (ES = 0.24σ – 0.41σ). The attendance-achievement relationship was consistent across all samples: students who attended more school had higher GPAs.

Gottfried performed a similar analysis in 2009 using the Stanford Achievement Test 9 (SAT 9) for reading and math as the achievement measure. He separated SAT 9 reading/math achievement scores, unexcused/excused absences, and total number of days absent (1–20 days) to report a range of effects. He categorized students by the total number of days they were absent and then used the percentage of excused/unexcused absences to determine the effects of absenteeism on student academic outcomes. He found that unexcused absences had a greater negative effect on SAT 9 performance than did excused absences (unexcused reading ES = -0.02 ; unexcused math ES = -0.04 ; excused reading ES = 0.02 ; excused math ES = 0.04). These effects were more pronounced in mathematics than in reading (Gottfried, 2014). Gottfried found that attendance matters for academic achievement, that the type of absences matter for students who miss between 1 and 20 days, and that students with strong chronic absenteeism are most at risk for academic failure.

Snyder, Dillow, and Hoffman (2008) performed a cross-sectional analysis of National Assessment of Educational Progress data and found that only 21% of eighth graders who missed more than 3 days of school per month scored at or above basic levels compared with 45% of children with perfect attendance; these results are supported by those of other studies (Caldas, 1993; Lamdin, 1996; Roby, 2004). Overall, research demonstrates that students must attend school to benefit from school.

Chronic absenteeism and graduation rates. In addition to academic achievement, attendance influences student graduation rates. A growing body of research links early truancy with grade retention, school failure, and dropping out of school (e.g., Heck & Mahoe, 2006; Heilbrunn, 2007). Attendance Works, a national group devoted to

studying the effects of absenteeism and interventions, claims that by sixth grade, chronic absenteeism is one of three signs that a student may drop out of high school, the other two being challenging behavior and failing grades (Attendance Works, 2011).

Absenteeism has been investigated as a predictor of dropout rate. For example, Balfanz, Herzog, and Mac Iver (2007) performed a longitudinal analysis of 13,000 students from 1996 through 2004 and found that poor attendance, misbehavior, and course failure in sixth grade could be used to identify 60% of the students who would not graduate from high school. Schoeneberger (2012) found in a longitudinal study that this trend continued in middle school. Students who missed at least 10% of school days were the most likely group to drop out of school (25%), followed by those who showed patterns of truancy early in their school careers (21%). Schools may benefit from looking at chronic absenteeism as an early warning sign for both academic disengagement and school dropout.

Once students enter high school, their attendance rates are very predictive of graduation rates. By ninth grade, missing 20% of school can be a better predictor of graduation status than eighth grade test scores (Allensworth & Easton, 2007). In 2012, Spradlin et al. found that only 24% of students who missed 18 or more days per school year graduated, as compared with 88% of students who missed fewer than 5 days. In Chicago public schools, students who missed 15–19 school days in a year had a graduation rate of 21%, while those who missed 20–24 days had a graduation rate of only 9% (Allensworth & Easton, 2007). Attendance is a strong predictor of whether students will successfully complete high school.

Chronic absenteeism and crime. Students who are not in school have increased time to wander neighborhoods unsupervised and may become involved in gangs and criminal activities such as vandalism and theft (Garry, 1996; Kearney, 2008b; Maynard, Salas-Wright, & Vaughn, 2014; van Breda, 2014; White, Fyfe, Campbell, & Goldkamp, 2001). Some communities have had success with decreasing crime rates by focusing on gathering truant students and returning them to school. For example, police in Van Nuys, California conducted a 3-week truancy sweep, and shoplifting arrests fell by 60% (Garry, 1996). In St. Paul, Minnesota, purse snatching reports dropped by almost 50% after police began picking up truant students (Garry, 1996). In addition, students who drop out were two to three times more likely to have been arrested for larceny, assault, and drug possession or sales than were their high school graduate peers (Maynard et al., 2014). School attendance problems have negative implications for our communities.

Predictors/Risk Factors for Absenteeism

Due to the serious and far reaching effects of absenteeism, researchers from several fields have been studying and trying address this problem. A large body of research has been created that gives extensive attention to a number of factors related to student absenteeism including poverty, ethnic status, special education, retention, and social relations.

Poverty. Unfortunately, the students who could benefit from being in school the most are often the ones with the highest rates of absenteeism. Absentee rates for students from low-income families tend to be more pronounced than those for other students (Buehler et al., 2012; Chang & Romero, 2008; Epstein & Sheldon, 2002). According to the NCCP, absences in kindergarten and first grade increased when family income was

lower (Chang & Romero, 2008). Chang and Romero (2008) found that in kindergarten, children from families who lived in poverty were four times more likely to be chronically absent than were their peers. For example, a student who comes from a family that earns \$24,250 (the federal poverty level) is four times more likely to be chronically absent than is a student who comes from a family that earns \$72,750. To close the achievement gap between students in poverty and their higher socioeconomic status (SES) peers, students must be in school.

Race/ethnicity status and location. In addition to poverty, students who are non-White run a risk of increased absenteeism. According to the NCCP, with the exception of students who are Asian, kindergartners who are non-White were absent more days, on average, than are students who are White (Chang & Romero, 2008). They found that absenteeism was markedly higher among children who are Native American as compared with other race/ethnicity groups. Chang and Romero (2008) found that students who are Latino were more affected by chronic absenteeism in kindergarten than were any other group. Missing more than 10% of school days in kindergarten was associated with lower academic performance in first grade for all students, but this association was stronger for students who are Latino.

This relationship between ethnicity/race and absenteeism may be confounded by students' school location (e.g., inner city, suburban, or rural), where some inner-city urban school systems reported more than 20% of their students as absent daily (Epstein & Sheldon, 2002; So, 1992). The largest school systems in our nation are located in inner cities, where 70% of the student population are students who are African American and nearly 20% of the population are students who are Latino (Teasley, 2004). Receiving

education in inner-city urban schools may act as a mediator of the relation between race/ethnicity and attendance rates.

Other factors. In addition to a student's SES and race/ethnicity, other factors have been attributed to increased risk of chronic absenteeism. These factors included student retention or participation in special education (Alexander, Entwisle, & Kabbani, 2001), gender (Garry, 1996), and school disengagement risk factors such as poor school performance and associations with delinquent peers (Henry & Huizinga, 2007).

There is a need for more research on the demographics and characteristics associated with absenteeism, as these absent students are not a homogenous group. Future research needs to acknowledge that students who are truant do not share the same risk and behavioral profiles and that students in different classes of absenteeism may require different interventions to engage in school. Schools need approaches to use with these students that are complex instead of a one-size-fits-all for attendance and truancy (Kearney, 2008b). Understanding the consequences and predictors of absenteeism provides insights into intervention design and potential mediators and moderators of the problem.

Need for Intervention

With the magnitude of the problem clearly demonstrated, both in terms of the number of students impacted and the ongoing struggle for schools, interventions have been studied. Maynard et al. (2013) performed a systematic meta-analysis on the effects of intervention programs on attendance outcomes of elementary and secondary school students who were identified as having chronic attendance problems. These authors used the Campbell Collaboration procedures and guidelines to guide their systematic review

and meta-analytic methods (see www.campbellcollaboration.org). A comprehensive search strategy was used to retrieve all relevant studies, both published and unpublished. Over 8,700 articles were found, but only 28 studies met their inclusion criteria; five randomized control trials (RCT), 11 quasi-experimental studies (QED), and 12 single group pre-post studies. Studies were excluded when they did not provide sufficient information to calculate effect sizes or when the students had other school behaviors such as refusal or school phobia. The meta-analysis included only the RCT and QED and revealed a significant but small effect size for the following truancy interventions: (a) existing court based (ES = 0.49), (b) school based (ES = 0.47), and (c) community based (ES = 0.27). Moderate, positive, and significant main effects were found for these interventions (ES = 0.46); however, no intervention program stood out as being more effective than others. In fact, the mean rates of absenteeism in most studies at post-test remained above acceptable levels. Maynard et al.'s review provided evidence that interventions can impact student attendance, but the variability across the studies made it difficult to identify which types of interventions were most effective for which types of students.

Maynard et al. (2013) argued that the literature on truancy interventions was “voluminous and disparate” and that, overall, there was limited evidence of the effectiveness of specific truancy interventions on attendance rates. The various types of interventions and the rigor of the evaluation makes it difficult to generalize to specific school settings (Maynard et al., 2013). There is a need for more rigorous research conducted on interventions for students at-risk for developing chronic absenteeism.

Purpose of This Project

I evaluated an intervention designed to address the systemic issues revolving around chronic absenteeism in elementary schools that are also implementing School-Wide Positive Behavior Intervention and Supports (SWPBIS). The Absenteeism and Truancy Intervention and Universal Procedures (ATI-UP) was designed to align with SWPBIS by using a multi-tiered approach to improve school attendance and guiding a school team through the development of systems to address student needs. The universal procedures in ATI-UP are meant to address the attendance rates of all students and consist of seven core components: (a) establish a team to collect and review attendance data, (b) develop a system for collecting and tracking attendance data, (c) publicize the importance of attendance, (d) establish attendance goals and acknowledge improvement, (e) provide an informal focus on attendance, (f) provide a formal focus on attendance, and (g) communicate with parents about the importance of attendance. Preliminary implementation efforts indicate that this intervention can be effective in elementary schools. For example, in one service district, 13 schools implemented ATI-UP. In the prior year, these schools had an average of 27% of students considered chronically absent. Two months after implementing the interventions the schools averaged 2% of students considered chronically absent (Sprick, 2014a). An elementary school from a different state reported that after attending a training session and putting the core components into effect, ADA increased from 88% to 94% (Sprick, 2014b).

This project was conducted to systematically evaluate the effect of ATI-UP using a randomized control design to address the following research questions:

Research Question 1: What is the effect of ATI-UP on school-level student attendance rates covarying for SWPBIS implementation?

Research Question 2: Does the level of SWPBIS implementation act as a moderator of these effects?

Research Question 3: To what extent are school-level variables (i.e., school size, free and reduced lunch (FRL) status, race/ethnicity, and percentage of students receiving special education and English language learner (ELL) services) correlated with the effects of the ATI-UP intervention?

CHAPTER II

THE PROBLEM

One of the major issues schools face in educating our youth is absenteeism. Absenteeism has been ranked among the top 10 problems facing our schools for over a quarter of a century (DeKalb, 1999). Although absenteeism is one of the major issues, definitions of absenteeism/truancy and reporting standards are not uniform across states. The federal government recognizes the importance of attendance as an indicator for elementary and middle schools to meet Adequate Yearly Progress and requires districts to report unexcused absences to the state as part of the No Child Left Behind Act (2002; Railsback, 2004). However, the ways in which researchers, states, and school districts define and report absenteeism/truancy rates vary from study to study, state to state, and district to district. This variation presents a challenge to obtaining accurate prevalence data, comparing the rates of incidents across school entities, and evaluating the effectiveness of interventions (Kearney, 2003; King & Bernstein, 2001; Lyon & Cotler, 2007; Pellegrini, 2007).

In this chapter, I will first discuss the varying terminology used to address this phenomenon. Then I will discuss the risk factors that have been associated with absenteeism. Next, I will discuss the different types of interventions that address absenteeism and the associated risk factors. Finally, I will make the case that typical interventions are reactionary in nature and that schools need a preventive, systemic approach to address the challenge of absenteeism.

Terminology

One of the challenges in addressing absenteeism is that there is varying terminology used across the absenteeism literature. Schools may use common terms such as truancy, but there is a lack of uniformity and consistency in the use and definition of specific terms. Four key examples of these inconsistencies include school absenteeism and school non-attendance, truancy, and school refusal behavior. In the following sections, I provide an overview of the terms, definitions frequently used in the literature, and a recommendation for terminology that will be used in the rest of this document.

School absenteeism and school non-attendance. School absenteeism and school non-attendance are broad terms used interchangeably to describe any occasion when a student misses school, regardless of the reason. Kearney (2008b) defines absenteeism as “excusable or inexcusable absences from elementary or secondary (middle/high) school” (p. 452). School absenteeism and school non-attendance are argued to provide a non-pathological conceptualization of the problem as compared with other terms (truancy, school refusal behavior, and school phobia), which carry more negative connotations (Carroll, 2015; Lyon & Cotler, 2007; Pellegrini, 2007; Reid & Kendall, 1982). Using terms such as school absenteeism, pupil absenteeism, or school non-attendance removes the problem from “in the child” and draws attention to the problem of absenteeism itself (Carroll, 1986).

Truancy. Truancy is typically applied as an overall descriptive term for students who are absent from school without permission. However, states and districts still use various definitions to define truancy based on state statutes guided by compulsory education laws. There is no single or standard operational definition for determining what

constitutes truancy (Attwood & Croll, 2006). School districts and even different schools within the same school district can have different definitions and standards for classifying students as “truant” (García-Gracia, 2008). These variations in definitions make it difficult, if not impossible, to compare rates of truancy from one state or school district to another and to compare results from research studies completed in different locations.

Given the need for common terminology, Gentle-Genitty et al. (2015) examined definitions across states and researchers and used a focus group to develop the following definition for truancy: “a non-home school student’s act of non-attendance evidenced by missing part or all of the school day without it being authorized [*sic*] by medical practitioner or sanctioned by parent(s) and/or legitimately excused by school or per state law” (p. 78). Other authors included the criterion that the truant event was not due to anxiety or fear (Kahn, Nursten, & Carroll, 1981; Kearney, 2008b; Lauchlan, 2003).

School refusal behavior. Authors and researchers have re-conceptualized and re-defined school refusal behaviors over the years. Kahn et al. (1981) defined school refusal as “cases where there is a psychosocial component” (p. 3). King and Bernstein (2001) defined school refusal as “difficulty attending school associated with emotional distress, especially anxiety and depression” (p. 197). Kearney and Bates (2005) defined school refusal behavior as “any refusal to attend school for an entire day by a child” (p. 207) and included students who “miss long periods of school time; miss sporadic periods of school time, skip classes, or arrive tardy to school with great dread and somatic complaints” (p. 207). In all definitions of school refusal, the student initiates the refusal to go to school due to some sort of emotional, stressful, or psychosocial reason.

School refusal behavior is distinguished from truancy by three characteristics. First, students with school refusal have an absence of antisocial behavior/characteristics often associated with truancy (Henry & Huizinga, 2007). Second, parents are aware of the problem and the absence from school and may condone it. Finally, students may show emotional distress, separation anxiety, anxiety, and/or depression (Elliott, 1999; Heyne, King, Tonge, & Cooper, 2001).

King and Bernstein (2001) performed a review of the literature and concluded that “there appears to be support for three primary distinguishable clinical groups of school refusers: phobic school refusers, separation-anxious school refusers, and anxious/depressed school refusers” (p. 199). Students with school refusal attributed to phobia experience significant and persistent fear when at school or during anticipation of going to school. Students with separation anxiety experienced intense distress following anticipation of or actual separation from their home environment and their significant others (Johnson, 1957; Last & Strauss, 1990). Students with anxiety and/or depression refused to go to school because of the symptoms associated with their psychiatric disorders. While there are three clinical groups of school refusers, many people still use the terms school refusal, school phobia, separation anxiety interchangeably (Phelps, Cox, & Bajorek, 1992).

Discussion of terminology. The inconsistencies in terminology present challenges for researchers comparing the impact of interventions. School refusal and truancy are differentiated in the literature in terms of the reason that the student is not attending school (anxiety versus delinquent behavior). However, some have argued that having two distinct terms is unnecessary and counterproductive (Kearney, 2008a;

Lauchlan, 2003; Lyon & Cotler, 2007; Pellegrini, 2007). The operational difference between the two terms is not clear, and there is considerable heterogeneity in both student groups and also substantial overlap in symptoms (Kearney, 2008b).

There is some evidence that students can exhibit both truant and school refusal behavior either concurrently or sequentially (Berg et al., 1993; Egger, Costello, & Angold, 2003). Kearney (2007) suggested that school refusal behavior should be encompassed within the term of truancy, while Heyne et al. (2001) advocated for school refusal behavior to be distinguished as a type of attendance problem different from truancy.

The benefit of classifying and operationally defining student absenteeism as excused or unexcused has also come under debate. Some have argued that we should continue to separate excused from unexcused absences (Gentle-Genitty et al., 2015); while others contended that the outcomes for students, schools, and communities were the same regardless of the reason students missed school (Chang, 2014; Malcolm, Wilson, Davidson, & Kirk, 2003; Reid, 2008). Eaton, Brener, and Kann (2008) found that students with high levels of absenteeism were more likely to report risky behaviors, regardless of whether the absence was excused. Classifying absences as excused or unexcused only masked the scale of the problem, since schools applied the term differently and accepted different ranges of evidence for excused versus unexcused (Atkinson, Halsey, Kinder, & Wilkin, 2002; Malcolm et al., 2003; Reid, 2003).

Lauchlan (2003) argued that the problem of student non-attendance was heterogeneous and exists on a continuum of non-attendance behaviors. Maynard, Salas-Wright, Vaughn, and Peters (2012) ran a latent profile analysis to examine the distinct

profiles of truant youth and found that the youth had different risk profiles as related to key indicators (e.g., school engagement, participating in school-based activities, and grades), demographic characteristics (e.g., SES, gender, and race/ethnicity), and externalizing behaviors (e.g., alcohol use, marijuana use, and theft). These authors identified four classes of truant youth: achievers (28.55%), moderate students (24.30%), academically disengaged (40.89%), and chronic skippers (6.26%). Lyon and Cotler (2007) have suggested a need to move away from the distinction between truancy and school refusal toward a more integrated “system of categorization that simultaneously stresses individual, family, school and larger contextual variables” (p. 559).

Recommendations for terminology. Researchers have advocated that someone or some entity should develop operational definitions that can be used consistently in research and policy (Gentle-Genitty et al., 2015; Maynard, McCrea, Pigott, & Kelly, 2012). Carroll (2015) recommended the use of the term “pupil absenteeism” to cover all forms of pupil absences, irrespective of cause. Lauchlan (2003) recommended the neutral label of chronic non-attendance, and Pellegrini (2007) recommended the term extended school non-attendance.

The clinical value of distinguishing between the types of absenteeism has come into question and led many to argue that the distinction between types of absenteeism is not necessarily a useful one when responding to a problem of chronic absenteeism (Carroll, 2015). Rather, schools should record all absenteeism, regardless of reason, and use those data for early identification of students and to examine the reasons why the student is not going to school (Lauchlan, 2003). Because of the impact on student

outcomes, schools should record and report absenteeism as any missed school day, regardless of reason.

In addition to tracking all non-attendance, schools need a way to identify students who are at risk for developing chronic patterns of absenteeism. Attendance Works and the Child & Family Policy Center advises tracking the percentage of days students miss and classifying any student who misses 5% to 9% of school days as “at risk” and any student who misses 10% or more of school days as “chronically absent” (Bruner et al., 2011; Chang & Romero, 2008). The NCCP reported that this level of absences in the first years of school is associated with lower academic performance in subsequent grades (Romero & Lee, 2007). The Attendance Works (2011) recommendation will be used to classify students as chronically absent in this study.

Risk Factors of School Absenteeism

Researchers have focused their identification of risk factors for absenteeism around the themes of student choice in attending and whether the family was aware of lack of attendance—likely because of the lack of agreement on terminology related to school absenteeism in the field. The individual and family risk factors associated with school absenteeism and recently identified school and community risk factors are explored below.

Individual factors. Individual factors associated with absenteeism include psychological/psychiatric conditions, academic performance/special education status, and medical problems (Corville-Smith, Ryan, Adams, & Dalicandro, 1998; Lounsbury, Steel, Loveland, & Gibson, 2004; Malcolm et al., 2003; Maynard, Salas-Wright, et al., 2012; Romero & Lee, 2008). A variety of psychiatric conditions have been associated with

children who have school refusal, including anxious school refusers (King & Bernstein, 2001), those with separation anxiety (Bernstein & Garfinkel, 1986; Kearney & Silverman, 1999; Last, Strauss, & Francis, 1987), those with social phobia (Last et al., 1987), and those who were anxious and/or depressed (Bernstein & Garfinkel, 1986).

The relationship between psychiatric conditions and absenteeism has been investigated through the years. Egger et al. (2003) used data from the Great Smoky Mountain Study, a longitudinal study on the development of psychiatric disorders in youths living in North Carolina, to investigate individual factors associated with absenteeism. These authors found that out of a representative sample of 4,500 children ages 9, 11, and 13 years, 25% of children identified as either having school refusal or truancy had at least one psychiatric disorder according to the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (American Psychiatric Association, 1994). School refusal was associated with depression (odds ratio [OR] = 13; 95% confidence interval, [3.4, 42]) and separation anxiety disorder (OR = 8.7; [4.1, 19]). Truancy was associated with oppositional defiant disorder (OR = 2.2; [1.2, 4.2]), conduct disorder (OR = 7.4; [3.9, 14]), and depression (OR = 2.6; [1.2, 56]). Of students who were identified as having mixed school refusal (students with both school refusal and truancy), approximately 88% had a psychiatric disorder and increased rates for emotional and behavioral disorders. Psychiatric disorders can lead to increased absenteeism and should be evaluated as a contributing factor in children with school attendance problems, as found in prior studies (Berg et al., 1993).

Other individual characteristics associated with missing school include poor academic achievement and the need to receive special education services. Corville-Smith

et al. (1998) found that students who either felt inferior academically or who were less likely to be socially competent in class were more likely to have high levels of absenteeism (missing 15 or more classes in any one course during fall semester) as compared with those students who regularly attended. Redmond and Hosp (2008) found that students who received special education for emotional disturbances had higher rates of absenteeism than those who received services for communication disabilities or learning disabilities or than students in general education. Students' success in classrooms may contribute to students feeling engaged and connected with their school. It is important that we understand the students' perceptions of the problem and the environments in which students learn.

In addition to psychiatric disorders and individual characteristics, medical conditions such as asthma, respiratory illnesses, infectious diseases, injuries, and cancer as well as somatic complaints have been linked to school absenteeism (Kearney, 2008b). The Centers for Disease Control and Prevention estimated that 40% of children ages 5–17 years missed three or more school days due to illness or injury, that nearly 22 million school days were lost each year due to colds, and that 38 million school days were lost due to the influenza virus (Bloom, Cohen, & Freeman, 2007). Low-grade physical symptoms may have contributed to absenteeism, especially when youth with school refusal exaggerate symptoms to gain attention or to convince their parents they needed to stay at home (Kearney, 2008b). Somatic complaints that have been associated with school absenteeism include headache, stomach ache, abdominal pain, menstruation symptoms, and fatigue (Egger et al., 2003; Kearney, 2008b). Egger et al. (2003) found that 26.5% of anxious school refusers and 42% of mixed school refusers had somatic

complaints as compared with 1.4% of non-school refusers. While many medical conditions are considered a valid excuse for missing school, if schools can identify these causes for high rates of absenteeism, additional support can be provided.

Family factors. Family structure and poverty are risk factors that contribute to the chances of increased absenteeism, but they are only part of the equation (Reid, 2005). Several family factors have been identified as being associated with student absenteeism, including SES, parental disciplinary practices, and parental value and involvement in education, which will be reviewed next (Bloom et al., 2007; Corville-Smith et al., 1998; Kearney & Silverman, 1999; Malcolm et al., 2003; Romero & Lee, 2008).

SES and family household structure have been linked to high rates of truancy/absenteeism (Malcolm et al., 2003; Reid & Kendall, 1982). A study by the NCCP (Romero & Lee, 2008) revealed a number of factors associated with children in elementary grades missing more days of school, including living in poverty, being born to teenage mothers, living in mother-only households, living with mothers who were unemployed, living in households that received welfare, and living with mothers that had less than a high school education. In kindergarten, children who lived in poverty missed, on average, four more days of school than did their peers. Kindergarten children whose families received welfare missed, on average, 2.5 additional days of school. In kindergarten, 21% of children living below the poverty level would be considered chronically absent, as compared with only 8% of their peers (Romero & Lee, 2008).

Parental discipline, parental control, and family cohesion were found to be significantly different between students with high rates of absenteeism and their regular attending peers (Corville-Smith et al., 1998). Absentee students perceived their families

to be less cohesive and their parents' discipline practices to be more inconsistent and less effective compared with perceptions of their regularly attending peers concerning their own parents.

Parental involvement in schools and the value parents place on education are also factors that have been associated with absenteeism. Guare and Cooper (2003) found that lack of parental support was associated with skipping school. Students who reported that their parents did not care how well they did in school or did not talk to their teachers were more likely to skip school. McNeal (1999) found that parental involvement was associated with a reduced likelihood of truancy and dropping out. McNeal used a principal components factor analysis with a promax rotation to analyze the effects of parent involvement on achievement, truancy rates, and dropping out for eighth grade students in a public school setting. McNeal found four distinct factors: parent-child discussion, involvement with parent/teacher organization, monitoring the child's academic performance, and educational support strategies. The factors most negatively associated with truancy and dropping out (when controlling for SES and race/ethnicity) were parent-child discussion and involvement in parent-teacher organizations. When specifically examining the effect of parental involvement across race/ethnicity, the positive influence of parental involvement on truancy was found to have a consistent effect on outcomes for students who are White, have a more limited effect on outcomes for students who are Black and Hispanic, and have no significant effect for students who are Asian. In addition, when controlling for SES and household structure, McNeal found that parental involvement had a greater impact on attendance rates for students from higher SES and non-single-headed households.

SES and parental discipline are factors that are external to the school environment. In order to help students be successful early and throughout their school careers, researchers need to examine protective factors with the potential to strengthen student resiliency to these risk factors. In addition, research has suggested that effective school-family partnership programs are correlated with positive changes in student attendance (zero-order correlation effect size, $r = .541$; Epstein & Sheldon, 2002). Schools need additional support and strategies for how to provide effective parental involvement activities associated with attendance.

School factors. School factors have an effect on a myriad of student problem behaviors, including absenteeism (Gottfredson, 2001). School factors may contribute to students' connection and engagement with their school (Barry, Chaney, & Chaney, 2011; Reid, 2005). School factors associated with attendance include school climate, student-teacher relationships, and the school-home relationship (Corville-Smith et al., 1998; Malcolm et al., 2003; Reid, 2005).

School climate is developed and maintained by manipulating school contextual variables to develop a sense of community. This sense of community includes a network of caring adults who interact regularly with students and share norms and expectations about their students (Bryk & Driscoll, 1988). Gottfredson (2001) concluded from her meta-analysis that school contextual variables have a moderate to large effect (effect sizes of .58 to .85) on several problem behaviors and negative outcomes, including absenteeism. Contextual factors included establishing and maintaining rules, effectively communicating clear expectations for behavior, consistently enforcing rules, and providing rewards for rule compliance and punishments for rule infractions.

Corville-Smith et al. (1998) found significant differences in evaluation of school characteristics and school personnel between students with high rates of absenteeism and their regularly attending peers. These authors found that student dissatisfaction with school was the single most important variable differentiating absentee students from regularly attending students. Henry and Huizinga (2007) surveyed over 1,500 youth in Denver and found several school risk factors for absenteeism. The two most robust predictors were school performance ($\Delta r^2 = 17\%$) and involvement with delinquent peers ($\Delta r^2 = 21\%$). Other perceptions of school environment and characteristics that predicted truancy were unsafe environment ($\Delta r^2 = 1\%$), perception of gangs in school ($\Delta r^2 = 3\%$), perception that student and teachers had poor relationships ($\Delta r^2 = 3\%$), and the perception that teachers did not utilize positive teaching practices ($\Delta r^2 = 3\%$). These findings supports the recommendations of Gottfredson, Gottfredson, Payne, and Gottfredson (2005) that schools improve the quality of their school-wide discipline, classroom organization and management, social competency instruction, and behavioral interventions to reduce a variety of problem behaviors in schools, including absenteeism. Students' perceptions of their schools can have an impact on student attendance rates.

In addition, the relationships that schools foster with parents may affect student attendance. If parents are excluded from school systems, either by the action of the teacher/school or by the parents' choices, students may feel further exclusion from school (Cullingford & Morrison, 1999). Parents may want their child to attend school regularly but may feel uncomfortable with the school because of safety issues, feeling excluded from school activities, and/or being confused about how to cooperate with the school.

These feelings influence the behaviors of their children and the children's perceptions of school and their attendance rates.

Discussion of factors. While the reasons that students miss school may be multidimensional, three clear factors are linked to absenteeism, either individually or in combination: the individual student, the family, and the school. Researchers, practitioners, program developers, schools, and others have been utilizing correlational research on student risk factors to develop programs and interventions that target these risk factors (either individually or in combination) to improve school attendance. The types of programs and targeted interventions available are diverse and numerous, with varying levels of effectiveness. However, research on interventions for absentees remains in its infancy (Maynard et al., 2013). In the following section I review interventions aimed at improving school attendance.

Interventions Targeting School Absenteeism

Interventions targeting school attendance fall into several categories, target a variety of risk factors, are implemented in different settings, and utilize different modes of delivery. Interventions generally target one of the following: (a) individual risk factors, such as anxiety/phobia, low self-esteem, social skills, and medical conditions; (b) family factors, such as communication and parental support and parental involvement with the school; (c) school factors, such as school climate, attendance policies, relationships between teachers and students, and bullying; and (d) community factors, such as increased police presence and truancy courts. Several interventions target multiple factors across all four factor types. The approach and effectiveness of these interventions are reviewed below.

Individual level interventions. Individual interventions target students who are already identified as having high levels of absenteeism and generally fall into three broad categories: clinical, medical, and legal. Individual interventions are often costly and time intensive and therefore should be reserved for students who truly need this level of intervention.

Clinical interventions. Clinical interventions target students who display symptoms of school refusal/anxiety/phobia, and these interventions are generally conducted with an individual student or a small group of students in a clinical or school setting. Clinical interventions employ short-term cognitive-behavioral or behavioral strategies designed to manage and reduce symptoms of school refusal/anxiety/phobia symptoms and modify irrational thoughts. Cognitive behavior therapy (CBT) strategies to decrease anxiety and increase attendance behaviors have been researched and published (Bernstein et al., 2000; Heyne et al., 2002; Kearney & Silverman, 1990; King & Bernstein, 2001; King et al., 1998). There is evidence that CBT is effective for treating students with school refusal behavior and those who also suffer from depression (Bernstein et al., 2000; King, Heyne, & Ollendick, 2005). The majority of research on the effectiveness of CBT included students with anxiety-based absenteeism; thus, no empirical evidence exists for the effectiveness of CBT on non-anxiety-based absenteeism (Kearney, 2008b).

Medical interventions. Medical interventions treat children who have school refusal behaviors associated with anxiety or phobia or who are absent from school due to illness or other physical conditions. Pharmacotherapy is a medical intervention that often includes behavioral or psychotherapeutic interventions, similar to the clinical

interventions mentioned above, as part of a multi-modal treatment plan. In addition, pharmacotherapy may include the use of medication, including tricyclic antidepressants, selective serotonin reuptake inhibitors, and benzodiazepines (Bernstein et al., 2000; Fremont, 2003; Heyne et al., 2001; King & Bernstein, 2001). Bernstein et al. (2000) found that students who had high rates of absenteeism and anxiety with major depressive disorders improved their attendance greatly over 8 weeks when they attended a CBT group and took imipramine ($z = 4.36, p < .001$) as compared with the placebo group who received CBT only ($z = 1.26, n.s.$). Although pharmacological treatment has been shown to be effective for the treatment of anxiety-related disorders in children, few double-blind, placebo-controlled studies have been conducted, and the use of medication to treat non-anxiety-based absenteeism has received very little examination (Fremont, 2003; Heyne et al., 2001; Kearney, 2008b). Due to the limited testing of these interventions, caution must be used when generalizing the outcomes of clinical trials of pharmacological treatments of anxiety disorders to children who have school refusal behaviors and high rates of absenteeism.

Other medical interventions focus on chronic medical conditions that are co-managed with school and medical personnel. Medical interventions may be the primary method of intervention or one part of a multi-modal strategy to reduce absenteeism (Kearney, 2008a). Interventions targeting chronic health conditions, such as asthma and juvenile diabetes, often include school-based and primary care-based management programs. In a review of educational interventions for teaching self-management skills to students with asthma, the 18 programs reviewed produced modest to moderate effects on decreasing absenteeism, with an average standard weighted mean difference of -0.14

(-0.23 to -0.04; Guevara, Wolf, Grum & Clark, 2003). Students who miss school because of a medical condition can benefit from a team of professionals who address the cause of the absenteeism and develop individual plans for the student based upon need.

Legal interventions. Legal interventions target the individual student and include court sanctions, truancy sweeps by police, truancy intake centers, truancy courts, probation, and detention. Research on the effectiveness of police and court-based interventions for truant youth has been mixed (Bazemore, Stinchcomb, & Leip, 2004; Epstein & Sheldon, 2002; Reid & Kendall, 1982). Bazemore et al. (2004) found that students who were picked up by police officers and taken to a truancy intake unit were more likely to return to school the following day and miss fewer total school days 30 days after the intervention, as compared with peers who were simply stopped and questioned by the police. However, when investigating long-term outcomes, non-processed peers missed fewer days over the entire school year. The authors speculate that this may be due to the deterrence effect, where students are initially “shocked” into changing their behavior, but overtime the consequence has a neutral or reinforcing effect on behavior. They also speculate that for some students, punishment may have a counter-deterrence effect, where individuals whose behavior is the target of change exhibit a “defiance reaction” and increase the behavior (Sherman, 1993). The National Center for School Engagement (2007) concluded that although police or court-led interventions can be effective, those that involve punitive actions alone, without other supports or services, may not be sufficient to correct the problem of absenteeism. Legal interventions may work as a deterrent but should be used with programs and systems that are simultaneously focused on preventing the problem of absenteeism.

Parent and family level interventions. Research has consistently linked family involvement with higher student achievement, better attitudes toward school, lower dropout rates, increased attendance, and many other positive outcomes for students, families, and schools (Epstein & Sheldon, 2002; Henderson & Mapp, 2002; Railsback, 2004). Parent and family level intervention strategies include parental involvement with the school, parent skills training, and legal interventions.

Parent/school involvement. Interventions to impact parental involvement in school include a range of strategies from proactive to reactive. Proactive strategies include promoting parent/school communication through ongoing activities at the school and consistent parent/teacher communication. Over the past several decades, the link between family involvement and higher student achievement, better attitudes toward school, lower dropout rates, and increased attendance has been documented throughout the literature (Henderson & Mapp, 2002). Epstein and Sheldon (2002) found in a study of 12 elementary schools that when schools developed partnerships with families and communities, the average rate of chronically absent students decreased from 8% to 6.1%. These authors found that the most important element was the constant and personal communication between the school and the family.

Reactive strategies include reaching out to parents through letters or personal contact from the school when students are absent. There is some evidence that contacting parents by mail or phone at the first sign of problematic absences is effective in significantly increasing student attendance (McCluskey, Bynum, & Patchin, 2004). Other researchers maintain that informing the parents is not enough and that schools need to employ additional strategies to increase attendance (Railsback, 2004). Parents play a vital

role in getting their students to school and in teaming with the school to increase student attendance.

Parent skills training. Direct parent skills training and family therapy are often part of a broader group of interventions that may include concurrent services for the student, such as social skills groups and counseling, as well as other interventions, such as sanctions or police contact (Baker, Sigmon, & Nugent, 2001; Garry, 1996; Lauchlan, 2003; Pellegrini, 2007; Reid & Kendall, 1982; Reimer & Dimock, 2005). Parent training is reported as being the most popular method for working with students whose absenteeism stems from school refusal (Kearney & Beasley, 1994). However, the research on the effectiveness of parent skills training and family therapy has been mixed, with few evaluative studies. King et al. (1998) studied a 4-week cognitive behavior intervention program that included relaxation training and social skills training for students who were chronically absent, in addition to training for the students' parents and teachers. These authors found significant improvement in school attendance from pre-treatment to post-treatment for the group that participated in the intervention ($t[16] = 4.09, p < .01$). This intervention included a package of strategies (child received six 50-minute sessions and parent received five 50-minute sessions) that made it impossible to conclude that parent training was the strategy that had the most impact on student attendance.

To test the impact of parent training on attendance, Spence, Donovan, and Brechman-Troussaint (2000) evaluated a CBT-based social skills training in which children with high rates of absenteeism were randomly assigned to three groups: parent and child treatment group, child-only treatment group, and wait-list control group.

Children in both treatment groups experienced statistically significant effects; however, there was no significant difference between the two experimental groups. Parent involvement in the intervention group did not have an additional positive effect on the success of the intervention. It is difficult, if not impossible, to determine the direct effect of parent training or family therapy on increasing student attendance because these activities are most commonly incorporated into an intervention package (Epstein & Sheldon, 2002; Kearney & Silverman, 1990; Teasley, 2004). Inclusion of parent skills training may benefit some students because these intervention packages have been successful for increasing attendance, but additional research is needed to determine the true impact of these packages.

Legal interventions. Legal interventions often involve the court and may include financial sanctions for the parents of students who are truant. There are several jurisdictions across the country that arrest, prosecute, and/or fine parents for their child's non-attendance and may use financial sanctions on welfare benefits as a way of holding parents accountable for their children's attendance (Campbell & Wright, 2005). Research on the effectiveness of sanctions for increasing attendance is mixed. Campbell and Wright (2005) found that sanctions-only programs were ineffective, while programs that combined sanctions with case management, supportive services, and positive financial incentives increased enrollment but had no effect on attendance. In their report for the National Dropout Prevention Network, Reimer and Dimock (2005) found several parent sanctions-only interventions that have been claimed to work. There have been few evaluations of sanctions-only interventions in previous research. Legal interventions may

deter parents from keeping their children at home but may be more effective if they are combined with programs that work on preventing student absences.

School level interventions. School level interventions have been developed to address absenteeism and include strategies that address school level risks factors correlated with school attendance problems. These strategies include systematic approaches to changing school climate, improving safety, reducing violence, changing parent/teacher relationships, creating parent-teacher collaboration, and developing school policies to address attendance/absences.

School climate. Whole school interventions that enhance a positive school climate can promote school attendance and prevent absenteeism. One example of this type of intervention is SWPBIS. SWPBIS is a whole school intervention that incorporates strategies of setting clear behavioral expectations, rewarding students for positive behaviors, emphasizing prosocial skills and behaviors, collecting and analyzing disciplinary data regularly, and implementing evidence-based academic and behavioral practices (Bradshaw, Debnam, Koth, & Leaf, 2009; Sugai & Horner, 2005). Pas and Bradshaw (2012) found that schools implementing SWPBIS with higher levels of fidelity, as measured by the Schoolwide Evaluation Tool (Horner et al., 2004), had lower rates of truant students. Bradshaw, Mitchell, and Leaf (2010) compared schools implementing SWPBIS with control schools and found that the number of students receiving suspensions significantly declined over time in SWPBIS schools ($Z = -2.17, p = .03, d = .27$). SWPBIS implementation in schools has been shown to reduce absenteeism due to decreased acts of truancy and suspensions.

In addition to SWPBIS, schools can actively implement interventions designed to decrease bullying, increase violence prevention, and incorporate conflict resolution practices (Nickerson & Martens, 2008). Youth that are bullied or who witness violence at school are at high risk for absenteeism (Dake, Price, & Telljohann, 2003). One program designed to address bullying is the Bully Free Program, which is implemented by the teacher and can be used with existing programs on conflict resolution, self-esteem building, and stress management (Beane, Miller, & Spurling, 2008). The program's focus is on prevention, creating a positive classroom, activities for the victims of bullying, and strategies to change bullying behavior. The Bully Free Program was associated with increased school attendance between baseline (90.8%) and after 175 days of program implementation (97.8%).

Perhaps the most important finding in research concerning dropout prevention, attendance, student engagement, and effective small schools is that students are more likely to remain and achieve in schools where people care about them (Benard, 2004; Green, 1998; Steinberg & Allen, 2002; Wimberly, 2002). Programs that build on student engagement, connectedness, and relationships may have an impact on attendance rates (Ford & Sutphen, 1996; Railsback, 2004). In schools where there is trust, caring, and support between students and adults there is higher attendance, higher student performance, and a lower rate of suspensions (Green, 1998).

Incentives. Incentives are rewards given to students for good attendance. The National Center for School Engagement includes incentives as a part of their continuum of approaches to reducing truancy (Baker et al., 2001; Railsback, 2004; Reimer & Dimock, 2005). Incentives may be considered a strategy to improve school climate by

acknowledging and celebrating student achievement and appropriate behavior (Horner & Sugai, 2000). Epstein and Sheldon (2002) found that rewarding elementary students for good attendance with parties, gift certificates, and recognition at assemblies was meaningfully correlated with reducing chronic absenteeism as well as increasing daily attendance rates. Others have questioned whether incentives are short-term strategies for a problem that needs a long-term systemic solution (Wagstaff, Combs, & Jarvis, 2000). Incentives are often included as a strategy within an existing intervention package.

School policy. Sound and reasonable attendance policies can set clear standards and high expectations for students. Clear standards will allow the same data to be collected across schools, districts, and states and may influence attendance rates. Petzko (1991) found, for example, that “excessive absences” policies in which students lose credit after a certain number of absences seemed to increase attendance. Petzko concluded that attendance was predicted to be 1.15% higher when schools had an excessive absence clause and 1.95% higher when students also lost credit as compared with schools that did not have this policy. Truancy provisions appeared to result in a statistically significant increase in high school enrollment. Aos (2002) reported that the data on absenteeism and the Washington State Becca Law, a law that included a mandatory process for schools to inform parents, file truancy petitions, and use juvenile courts to issue sanctions, indicated that an estimated 2,664 additional high school students enrolled as a result of the Becca Law. However, since the enactment of the Becca Law several concerns have surfaced, including failure of students to appear or comply with court sanctions, failure of schools to provide updated attendance data, and failure of schools to file truancy petitions (McQueen, 2004).

Caution needs to be used when looking at implementing school policies, as there is evidence that “zero tolerance” policies that include extremely punitive consequences, such as suspensions and detentions, do not have a positive impact on attendance, especially with students of color and students in poverty (Epp & Epp, 2001; Shannon & Bylsma, 2006; Skiba & Knesting, 2001). In addition, Wagstaff et al. (2000) warn that policies in one area can cause problems in another areas. For example, a policy that emphasizes punishment for attendance rule violations may impact relationships between students and teachers. Policies are needed in schools to drive implementation and increase the ability to compare data across schools and districts. Schools and districts must carefully craft their policies around absenteeism to shape student attendance.

Developing partnerships with families and communities. Parent and community partnership interventions can support home environments, increase parent-school communication, recruit parents to help at school and serve on school committees, provide information to families about how to help students with homework, and integrate community-based resources to strengthen school programs. Sheldon (2007) investigated the implementation of the National Network of Partnership Schools (NNPS) on attendance. NNPS is an intervention focused on providing schools with tools and guidelines for establishing, maintaining, and improving school-wide partnership programs that connect with families. Schools implementing NNPS organize action teams, plan family and community-involvement activities linked to school goals, and reach out to involve all families. After the first year of implementation, there was a 2.5% increase in explained variation of daily attendance in schools implementing NNPS ($ES = 0.079$). Epstein and Sheldon (2002) found in a study of 12 elementary schools that when schools

developed school-family-community partnerships, overall attendance rates improved, and the average rate of chronically absent students decreased from 8% to 6.1%. Intervention programs that incorporate active engagement of families in school-based activities may produce to better attendance rates for all students.

Multi-system interventions. Multi-system interventions, often referred to as wrap-around interventions, have been developed to provide flexible and comprehensive approaches to address the multiple needs and risk factors that contribute to non-attendance (Epstein & Sheldon, 2002; Kearney, 2008a; Railsback, 2004; Reid, 2003; Reimer & Dimock, 2005; Sheldon, 2007). Bowen and Richman (2002) recommended a model in which schools provided early intervention and after-school programs directly connected to human service agencies. McCluskey et al. (2004) studied a multi-system intervention used to decrease truancy in three schools. Their intervention included identifying students who had high rates of absenteeism (missed 20% or more of school days), a regular review of attendance data, communication with parents that included the importance of attendance and the consequences for non-attendance, referrals to an attendance officer, and referrals to community health agencies or social service agencies. This intervention was effective in all schools, with one school reducing the proportion of students who missed 30 or more days by more than half (from 20% to 7%) as compared with the previous year. While this example of a multi-system intervention was effective, the intervention components are reactive in nature and not preventive. It has been recommended that these multi-system interventions be school-based, include specific strategies that involve families and communities, be preventive in nature, have a

restorative focus, and use long-term goal setting (Epstein & Sheldon, 2002; Kearney, 2008a; Railsback, 2004).

Gase, Kuo, Coller, Guerrero, and Wong (2014) described how Los Angeles County convened an expert panel, conducted a literature review and key informant interviews, and used focus groups and surveys to illustrate the complex nature of a multi-system approach and how the interconnected players were working together to address truancy. These authors identified five priority policy recommendations for the county: (a) use a local control funding formula to support truancy prevention and reduction efforts, (b) explore models to integrate physical and mental health into schools, (c) expand the district attorney and city attorney truancy prevention programs, (d) enhance the commitment of the county and city departments to reprioritize/allocate additional staff and other resources to reduce truancy, and (e) modernize data collection and reporting systems to track truancy frequency. As identified in these priorities, truancy and absenteeism are complex problems that can benefit from a more comprehensive approach.

The National Dropout Prevention Center lists systemic strategies that have been found useful for reducing absenteeism and dropout. These strategies include school-community partnership to improve the safety and infrastructure of schools and early intervention programs to boost family engagement, early academic enrichment, and reading and writing skills (Kearney, 2008b). Key aspects of many of the multi-system interventions include elimination of barriers to attendance, such as school-related violence and language differences, as well as increased monitoring of attendance.

Discussion of Interventions

Over the past three decades, multiple individual, family, school, community, and legal interventions for addressing absenteeism have been developed and implemented. In a systematic review, Maynard, McCrea, et al. (2012) found a significant, moderate effect size ($g = .46$) for existing court-, school-, and community-based programs designed to reduce truancy. As discussed in Chapter I, Maynard et al. (2013) comprehensively reviewed rigorous studies on truancy interventions and found the research to be “voluminous and disparate.” Overall, chronically truant students benefitted from interventions, but no program stood out as being more effective than others and the mean rate of absenteeism remained above acceptable levels. Unfortunately, research is either not being conducted or not being disseminated in a way to enhance the evidence base or inform practice in the field.

Without effective interventions, truancy becomes a habitual problem that increases over time (Roderick et al., 1997). Reid (2004) suggests that early interventions can be six times more likely to be successful than interventions implemented after a student’s non-attendance has become chronic. Rigorous research is needed to identify interventions that can be effective for preventing absenteeism and to address chronic absenteeism and truancy.

Systematized Approach to Absenteeism Interventions

There is a need for prevention, early identification, intervention, progress monitoring, functional behavioral assessment, empirically supported procedures and protocols, and a team-based approach to deal with the problem of absenteeism (Kearney & Graczyk, 2014). There is an abundance of literature documenting the causes,

correlates, and negative impacts of absenteeism; however, more research needs to be done on effective interventions. Correlation studies suggest that truancy in elementary and middle schools has a long-term impact on school attendance patterns (Schoeneberger, 2012); however, there are few researched interventions for younger students (McCluskey et al., 2004) and even fewer programs that have a prevention focus (Henry & Huizinga, 2007). Other researchers have acknowledged the complex nature of truancy and the potential comprehensive approach (Kearney, 2008a). Absenteeism is a complex problem that cannot be viewed in simplistic terms. There is a need for the problem to be tackled in a variety of ways, within a systematized comprehensive approach (Carroll, 2015; Kearney, 2008a).

The lack of a systemic approach to the problem of absenteeism led Kearney and Graczyk (2014) to develop an response to intervention (RTI) framework blueprint for researchers, educators, mental health providers, and other professionals. In their RTI blueprint, Kearney and Graczyk incorporated the recommendations of Barnes and Harlacher (2008) and called for a systems-level approach, proactive and preventive efforts, alignment of interventions to student needs, data-based decision making and problem solving, and use of effective practices. For Tier 1 (universal interventions), whole-school interventions should be used to enhance a positive social climate, thus promoting school attendance and preventing absenteeism. These whole-school interventions should include strategies that address school climate, safety, health, mental health and social emotional learning, parental involvement, and policy review. For Tier 2 (targeted interventions), students who are emerging as at risk for becoming chronically absent should receive interventions that address psychological approaches for anxiety-

based and non-anxiety-based absenteeism, strategies to increase student engagement, and peer and mentoring programs. For Tier 3 (intensive interventions), students who already are considered chronically absent should receive an expansion of Tier 2 interventions, function-based support, and legal strategies.

The ATI-UP intervention is a preventative, proactive, school-wide approach that guides school teams to create a multi-tiered, multi-system framework to increase attendance for all students and reduce the number of students identified as chronically absent. These systems include a problem-solving team, systems to increase parental/community engagement, systems for promoting attendance in school, and motivational systems for improvement in behavior. Without a systems approach, identification of effective practices is limited, adoptions of programs designed to support students are not sustainable, and attention to school implementation can be episodic and short lived (Sugai & Horner, 1999; Zins & Ponti, 1990). As documented in the previous section, these systems have been identified in research as contributing to reducing absenteeism. Problem-solving teams have flexibility in developing the strategies within each system, based upon their context. How each system fits into a multi-system framework is described below.

Problem-solving team. A problem-solving team is used to solve issues around attendance. This team includes an administrator, an interventionist, and a teacher and has a clear mission to improve school-wide attendance. The team meets at least every 2 months to review attendance data and communicate with staff. They review ADA, look for patterns in absenteeism, and identify students who are at risk or chronically absent to assist in planning action steps in the school.

The problem-solving team must help the school recognize that all absences matter, regardless of reason. Therefore, they require data systems that facilitate the identification of students who are at risk for becoming chronically absent (missing 5% to 9% of school days) and students who are chronically absent (missing 10% of school days). Similar to SWPBIS, data about problem behavior (attendance) must be collected, summarized, and used to guide decision making by the problem-solving team.

Systems to increase parental/community engagement. As previously mentioned, a family-school-community connection can lead to better outcomes for students (Epstein & Sheldon, 2002; Ford & Sutphen, 1996; Henderson & Mapp, 2002; Railsback, 2004). Problem-solving teams connect with the community and families by reaching out and communicating with them. ATI-UP provides several options for how to implement this system, including developing a press release for the local media, enlisting local leaders and popular figures, or enlisting help from community organizations. The goal of publicizing the importance of attendance to families and the community is to inform everyone that students need to be in school to be successful. This messaging can be targeted to all grade levels but is especially important for students in the early grades, before absenteeism becomes habitual.

To increase communication with parents and provide them with ways to engage with the school, ATI-UP schools provide the family and communities with updates about attendance (e.g., through memos, newsletters, robo-calls, and social media). The problem-solving teams use data to determine problematic times of the year and increase messaging accordingly in an effort to prevent attendance issues. Schools should have a systematic plan for connecting with parents at the earliest signs of a problem, such as a

phone call home, and a follow-up plan if the problem continues, such as a meeting. The school should identify activities to increase family engagement in school activities throughout the school year.

Systems to promote the importance of attendance. To affect the school climate around attendance, all staff must provide an informal and formal focus on the importance of attendance. Similar to SWPBIS, the focus on attendance in the classroom is aimed at preventing absenteeism by defining and teaching the expectation of attendance. An informal focus on attendance creates a warm and welcoming environment. Teachers can create this environment by greeting students by name, welcoming students back to the classroom after an absence, and checking in with guardians when students miss more than 1 day of school. For the formal focus on attendance, the teacher can incorporate the rationale for attendance into lessons and encourage students to watch the class-wide or school-wide attendance graph.

Motivational systems. A motivation system to increase attendance should be considered at each site. Motivation systems should acknowledge and reward appropriate behavioral expectations (i.e., attendance). The motivation system should focus on improvements in attendance, not just perfect attendance. This motivation system may be incorporated into the public posting of attendance data and may be implemented school wide, classroom wide, or with individual students (e.g., assemblies or access to preferred activities). All students can focus on improving their attendance.

Data must be used to develop attendance goals so that the problem-solving team can develop strategies to acknowledge improvement in attendance. Teams may decide to publically post the daily school-wide attendance rates with the school-wide goal for

improvement. Teams may set up friendly competitions between grade levels or classrooms for improving attendance. Teachers may dedicate an area of the classroom to publically post classroom attendance graphs and encourage students to set classroom attendance goals.

Similar to SWPBIS, the goal of ATI-UP is to establish a positive social climate in which behavioral expectations about attendance are directly taught to the students, consistently acknowledged, and actively monitored. In addition, ATI-UP incorporates research on the importance of family-school-community engagement. It is necessary to investigate whether a preventive, proactive, school-wide approach that utilizes a multi-tiered, multi-system framework can increase attendance for all students and reduce the number of students identified as chronically absent. In this study, I evaluated the effect of ATI-UP using a randomized control design to address the following research questions:

Research Question 1: What is the effect of ATI-UP on school-level student attendance rates covarying for SWPBIS implementation?

Research Question 2: Does the level of SWPBIS implementation act as a moderator of these effects?

Research Question 3: To what extent are school-level variables (school size, FRL status, race/ethnicity, and percentage of students receiving special education and ELL services) correlated with the effects of the ATI-UP intervention?

In the next section, I describe the methods used to investigate the effectiveness of ATI-UP.

CHAPTER III

METHOD

The ATI-UP intervention was designed to increase student attendance rates by prioritizing the importance of student attendance for students, staff, families, and communities (Jenson, Sprick, Sprick, Majszak, & Phosal, 2013). This study is an initial efficacy trial to determine the outcomes of the intervention using a wait-list, randomized-control research design. This study was conducted in conjunction with Safe & Civil Schools (Eugene, Oregon), the organization that developed the intervention (Safe & Civil Schools, n.d.), and I functioned as a trainer, consultant, and analyst on the project.

With the assistance of Safe & Civil Schools, I recruited 27 elementary schools in 15 school districts to participate in the ATI-UP intervention study that began in June 2016. Eligible elementary schools were required to (a) collect student attendance data, (b) send a team to the ATI-UP training, (c) complete fidelity measures for ATI-UP, (d) complete the Tiered Fidelity of Intervention (TFI), a fidelity measure for school-wide SWPBIS implementation, and (e) participate in randomization of assignment to treatment.

Design

This study lasted from June 2016 to January 2017, starting with the ATI-UP professional development training and ending four school months later. The experimental design was a randomized wait-list control design with post-intervention assessments (Shadish, Cook, & Campbell, 2002). It relied on pre-intervention measures to construct the assignment to condition (described below), post-intervention measures of attendance

(ADA and chronic absenteeism), and measures of fidelity of implementation for SWPBIS and ATI-UP.

Recruitment procedures. I selected the schools for inclusion in this study by using a three-step process. First, an initial flier describing the study was sent to district superintendents, principals, and education consultants working directly with Oregon schools. This flier described the study and prompted school principals to reach out if the school and its staff were interested and ready to participate in a Safe & Civil Schools training. Thirty-one school leaders responded to the flier and indicated that their schools were ready to participate in the program. After obtaining institutional review board approval, a letter providing more details about the training and the study was provided to all interested schools. Twenty-seven schools met criteria and agreed to participate in the study. Consent forms were acquired from all participating schools, and procedures were developed to increase the likelihood that schools participating in the trial would comply with their randomized status. Specifically, upon volunteering to participate in the study (prior to randomization), the administrator of each school reviewed and signed a written participation form in which the school consented to adhere to the assigned condition. The two assigned conditions were a treatment condition that received training in June and a wait-list control condition that received training the following January.

The administrators from the participating schools consented, in writing, that if their schools were randomized to the treatment condition that school staff would attend the June training and would support ATI-UP implementation for the duration of the trial. If their schools was randomized into the control condition these administrators agreed, in writing, not to purchase ATI-UP curriculum for the duration of the study. In June 2016,

schools assigned to the control condition received free training and the curriculum for ATI-UP.

Sample. An a priori power analysis was completed to determine the number of schools necessary for the study. Given previous district results obtained after implementation of ATI-UP (Sprick, Alabiso, & Yore, 2015), I hypothesized that a large effect size of 0.8 was feasible for this study (Cohen, 1988). Power analysis was conducted in G-POWER to determine a sufficient sample size using an alpha of 0.05, a power of 0.95, and a large effect size ($f = 0.8$; Faul, Erdfelder, Buchner, & Lang, 2013). The desired total sample size was 28. Thirty-one schools showed initial interest, and after receiving the detailed study description 27 schools participated in the study (see Figure 1).

Fourteen schools were randomly assigned to intervention (*treatment*) and 13 schools to wait-list groups (*control*) after being matched on school year 2015–2016 ADA. To create equivalent groups, schools were rank ordered according to their self-reported ADA. Schools were paired according to their rank order (i.e., the two lowest schools were paired, the next two lowest schools were paired, etc.). A coin flip between the pair was used to determine intervention groups (heads = treatment; tails = control). Since there was an odd number of schools, the median school was placed into the intervention group. This matching was intended to control for biases that might stem from systematic differences between conditions (e.g., more prior student absenteeism among control group; Shadish et al., 2002).

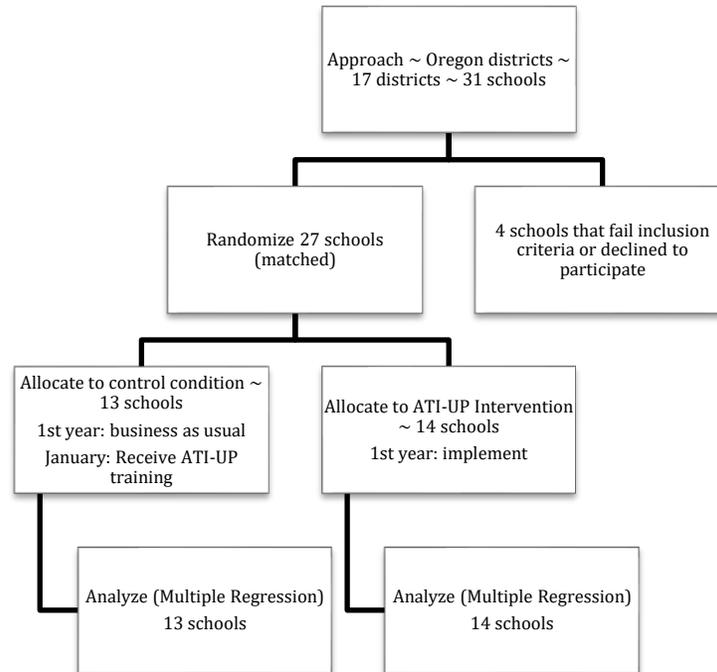


Figure 1. Research design with recruitment, assignment to condition, attrition and dropout, and sample size for analysis.

After assignment, independent sample *t*-tests were run on school-level average daily attendance to assess the equivalency of rates of absenteeism for both treatment and control schools. I computed Hedges’ *g* corrected for small sample size, as a metric of pre-intervention effect size (see Table 1), with no significant differences noted on the main dependent variable (ADA). In addition, independent sample *t*-tests with Hedges’ *g* adjusted for small group were run at the school level to assess the significance of demographic differences (i.e., Title 1, special education services, ELL services, or FRL) between control and treatment groups. Effect sizes greater than 0.25 standard deviation are noted in bold text.

Table 1
School-level Demographics

Measure	ATI-UP (<i>n</i> = 14)		Control (<i>n</i> = 13)		Sample differences
	<i>M</i> or %	<i>SD</i> or (<i>n</i>)	<i>M</i> or %	<i>SD</i> or (<i>n</i>)	Hedges' <i>g</i> ^a
School characteristics					
Years of SWPBIS	7.93	6.41	6.77	5.93	0.18
Years of SWPBIS SWIS	10.57	5.15	9.46	5.47	0.20
FTE	17.66	8.41	19.40	7.15	-0.22
Title 1 schools (<i>n</i> , %)	57%	(8)	85%	(11)	0.63
Charter schools (<i>n</i> , %)	7%	(1)	8%	(1)	0.00
Urban or suburban schools (<i>n</i> , %)	57%	(8)	61%	(8)	0.03
Student to teacher ratio	19.99	2.73	18.89	2.74	0.39
Student enrollment	377.36	176.82	384.77	136.43	-0.05
Free or reduced lunch (%)	61%	21.53	59%	18.41	0.11
Special education services (%)	13%	4.47	14%	4.17	-0.04
English language learners (%)	20%	22.20	13%	15.66	0.31
Student race/ethnicity					
American Indian (%)	2%	1.26	4%	11.41	-0.34
Asian (%)	3%	2.75	2%	2.73	0.26
Hispanic (%)	26%	20.05	24%	19.19	0.10
Black (%)	2%	2.87	1%	1.03	0.27
White (%)	63%	23.71	63%	20.41	0.02
Two or more races (%)	4%	2.54	5%	3.18	-0.34
Student minority status					
Non-minority (White) (%)	63%	23.71	63%	20.41	0.02
Minority (non-White) (%)	37%	23.71	37%	20.38	-0.02
Student gender					
Female (%)	51%	4.37	47%	5.27	0.82
Male (%)	49%	4.37	51%	4.26	-0.36
Average daily attendance, 2015–2016 (%)	93%	4.03	93%	2.26	-0.05

Implementation measures

ATI-UP checklist, pre-test	4.29	2.70	8.54	5.74	-0.93
TFI Tier 1 total points, pre-test	20.93	5.01	20.15	6.18	0.14

Note. Table reports means (*M*) and standard deviations (*SD*), unless otherwise identified as a percentage, indicating the proportion of cases.

^aHedges' *g* with a correction for small samples size bias compares control and treatment groups.

Baseline differences existed between conditions. Random assignment was used to achieve assignment-independence assumption (Holland, Glymour, & Granger, 1985; Imbens & Rubin, 2015; Rubin, 1974). However, given the small sample size, it is not surprising to find that the sample differed at baseline on some characteristics, thus reaffirming that assignment-independence assumption is difficult, if not impossible, to achieve in reality (Shadish et al., 2002). The European Medicines Agency (2015) argued that “baseline imbalance observed post hoc should not be considered as an appropriate reason for including a variable as a covariate in the primary analysis” (p. 3). These variables were not considered as a covariate a priori, so they were not included as a covariate in the statistical analysis to avoid adding bias to the estimated treatment effect (Schulz, Altman, & Moher, 2010).

Participants

Twenty-seven elementary schools in Oregon opted to participate in this study. All schools reported implementing SWPBIS. For purposes of this study, elementary schools included schools that serve students in kindergarten through sixth grade or kindergarten through eighth grade.

Summary statistics describing the control, treatment, and sample equivalence are presented in Table 1. In the following text, the sample data are compared with the

statewide data from the Oregon Report Card (Oregon Department of Education, 2016). For clarity, Oregon state-wide averages are listed in parentheses. In my study, 57% of the ATI-UP schools and 85% of the control schools were designated as Title 1 (56.8%), and 57% of the ATI-UP and 61% of the control schools were in urban or suburban areas of the state. The average pupil-to-teacher ratio was 20 in the ATI-UP schools and 18.9 in the control schools (19.4). Sixty-one percent of students in the ATI-UP schools and 59% in the control schools were eligible for FRL (55%), and 13% of students in the ATI-UP schools and 15% of students in the control schools were eligible to receive special education services (13.3%). Twenty percent of students in the ATI-UP schools and 13% of students in the control schools were classified as ELLs (9.9%). Participating schools in both groups of schools had 93% ADA (93.1%). Chronic absenteeism rate was not gathered from participating schools pre-study; the statewide average was 18.7%. The majority (63.4%) of students were White in both groups of schools, with a similar percentage of students from other categories across school groups, as reported in Table 1. The student sample for this study was dependent on recruitment efforts and the school's willingness to participate in the study.

Study Conditions

In this section, I discuss the differences between the study conditions, including details about the intervention, treatment, and control conditions.

ATI-UP intervention. The ATI-UP intervention was developed based on the critical features of a multi-tier system of supports (MTSS) model (i.e., a three-tiered approach to service delivery). Universal procedures are recommended in schools with large numbers of students missing 2 or more school days each month (10% or more of

school). The focus of the universal procedures is to increase ADA and reduce the number of students who are at risk for becoming chronically absent by focusing on Tier 1 prevention strategies. The systems include the following components: (a) publicize the importance of attendance, (b) establish attendance goals and acknowledge improvements, (c) have staff provide an informal and formal focus on attendance, (d) communicate with parents and provide them ways to engage with the school, and (e) use motivation systems to generate enthusiasm. There is a menu of strategies to develop the school system. For the strategy *establish attendance goals and acknowledge improvement*, teams might choose to have school-wide or classroom goals or set up friendly competitions. School-based teams consist of at least three school members (e.g., administrator, interventionist, and teacher) and meet monthly to complete action plans, monitor universal strategies, discuss attendance data, and select additional universal strategies for improving attendance, based upon need.

ATI-UP training. Each treatment school sent a team including the individuals identified above to two consecutive days (12 hours total) of ATI-UP training in June 2016. The average size of the attending teams was four members. In total, 55 participants (which included 14 administrators, 18 interventionists, and 23 teachers) were in attendance. I recommended that schools send people who were members of the SWPBIS team, since the SWPBIS teams were previously established in the buildings and had existing infrastructure to communicate with the whole staff. Each school indicated that at least one person, in addition to the principal, was an active participant in their SWPBIS program. I conducted this training for both the treatment schools (June 2016) and control schools (January 2017) at a site in Eugene, Oregon.

The objectives of the training were to provide teams with an understanding of the system, to develop staff training, to produce permanent products for their school sites, and to develop action plan items. The action plan items included steps for the problem-solving teams to complete once they returned to their schools, such as develop a newsletter for parents or explain the new motivation system to staff. Each problem-solving team received a copy of the ATI-UP curriculum (Jenson et al., 2013) for their school site.

ATI-UP coaching and follow-up support. Following the training, teams received ongoing technical support via email communication with me. Monthly schools were sent an email asking for attendance data and reminding them to reach out if they needed support. During the 3-month window of intervention, eight of the 14 treatment schools asked for additional support in the form of feedback or additional examples. In addition, I held a 1-hour follow-up webinar in early November that provided a refresher on the systems as well as a chance for teams to ask questions and share strategies that were successful in their schools. Five ATI-UP teams engaged in the follow-up live training via webinar, and nine watched the recorded version later.

Control condition. Schools in the control condition did not receive training until January 2017 and continued business as usual. Schools were not requested to stop prior practices that addressed absenteeism; rather, those practices were captured in the ATI-UP fidelity measure (details below). Control schools that had existing practices from the prior school year continued to implement those practices through the course of the study. For instance, in one control school an attendance coordinator was tasked with connecting with parents at the earliest signs of a problem (item 28 on the fidelity measure).

Measures

Specific measures were used to assess the effect of ATI-UP on ADA, chronic absenteeism, and the fidelity of implementation of the core components for both SWPBIS and ATI-UP. Schools provided aggregate data on class size, school size, and student-level demographics, including special education status, eligibility for FRL, and ELL status, in June 2016. These data were cross-referenced to the National Center for Education Statistics data for school year 2015–2016.

Student attendance data. Student attendance data were gathered through a secured email with schools, in which they provided their averages using a deidentified randomly assigned number. All attendance data were collected at the school level; the primary variable of interest was ADA, and a secondary indicator was the total number of students considered chronically absent (defined as missing 10% of the total days). Schools also included the total number of students considered severely chronically absent (defined as missing 20% of the total days). Schools submitted these data monthly for 3 months, beginning at the start of the school year (September 2016).

ATI-UP fidelity measure. The ATI-UP fidelity checklist was constructed to measure implementation fidelity of the core components of the intervention and was designed to assess (a) the degree to which the five systems of ATI-UP are being implemented and (b) which strategies are being used in each system (see the Appendix). I developed the tool in collaboration with Randy Sprick, Ph.D., an author of the curriculum, and Keith Smolkowski, Ph.D., a dissertation committee member who has done prior research on Safe & Civil Schools interventions (Madigan, Cross, Smolkowski, & Strycker, 2016; Smolkowski, Strycker, & Ward, 2016).

Content validity of the ATI-UP fidelity measure was established by conducting a review of the checklist with the authors of the program, a previous implementer of the program, and my committee members. The reviewers provided descriptive feedback, such as suggestions for rewording items and specifying items to add or remove from the measure. A checklist format was chosen to evaluate fidelity of implementation because it could be used to provide an inexpensive, comprehensive snapshot of what was occurring in the schools. A checklist could also be used to calculate the percentage of treatment components that were implemented (Gersten et al., 2005).

The checklist was given to all schools, across conditions, as a paper-pencil document and a fillable pdf document. The checklist was returned to the Safe & Civil Schools office in a self-addressed stamped envelope or scanned and returned through a secured email. Treatment and control schools received and completed the checklist in June 2016 and January 2017, respectively. Completion of the checklist pre- and post-implementation allowed for comparisons of the implementation rates of critical features across conditions at the beginning and the end of the study. The checklists were completed at all 27 school sites by either the SWPBIS team or the attendance team.

Responses to items on the checklists consisted of a 4-point Likert scale that allowed teams to indicate the level to which they implemented the core components: not doing it, planning to do it, started implementation, or doing it. Each strategy was coded as “implemented” or “not implemented,” depending on the reported perceptions from the team. For example, under the core component of family communication, teams had an opportunity to select which strategies the school was implementing (e.g., newsletter or robo-call). Only the treatment group received an action plan document that matched the

fidelity checklist in June 2017. This action plan document was used during the training to guide creation of an action plan that identified next steps for implementation.

SWPBIS fidelity measures. The TFI Tier 1 scale was used to measure fidelity to SWPBIS and was developed so that teams could comprehensively evaluate all three tiers of SWPBIS with one valid, reliable, and efficient measure (Algozzine et al., 2014). The TFI assesses the extent to which school personnel implemented the SWPBIS core features across three levels: (a) Tier I, universal SWPBIS features; (b) Tier II, targeted SWPBIS features; and (c) Tier III, intensive SWPBIS features. Each tier could be evaluated separately or combined to evaluate overall implementation at all three tiers. Teams used a Likert scale and a detailed rubric to come to agreement on the degree of implementation (0 = not implemented, 1 = partially implemented, 2 = fully implemented). The TFI for Tier I consisted of three subscales: (a) teams (two items), (b) implementation (10 items), and (c) evaluation (three items). Although not yet studied, the suggested criterion for adequate implementation for each tier was 70% (McIntosh et al., 2017); 70% equals a score of 21 or higher on the TFI. The TFI for Tier 1 has high internal consistency ($\alpha = .87$), high test-retest reliability ($r = .99$), and high interrater reliability ($r = .99$). Evidence for concurrent validity was assessed through correlation with similar measures (BoQ, $r = .64$; SAS, $r = .55$; TIC, $r = .54$) and was found to be both statistically significant and stronger when facilitated by an external coach (McIntosh et al., 2017).

The TFI was completed by the SWPBIS teams with the support of an external SWPBIS coach, who facilitated the administration and ensured accuracy of scoring. The majority of schools had access to a district-level SWPBIS coach to facilitate this process,

and I acted as the coach for teams that did not have access to a district-level coach ($n = 5$).

Statistical Analyses

To address my first research question on the effects of ATI-UP on school-level student attendance rates covarying for SWPBIS implementation, univariate descriptive analyses were performed on sample characteristics and measures of interest. Between-subject intervention effects on post-intervention rates of ADA and absenteeism, collected in December 2016, were examined using a series of multiple regression models estimated using IBM SPSS Statistics for Windows, version 23.0. Covariate-adjusted outcomes were regressed on a dummy-coded variable indicating intervention condition (1 = ATI-UP, 0 = control). To control for differences in the level of SWPBIS implementation, all models included a continuous measure of SWPBIS implementation (TFI Tier 1 total points) as a covariate, which was mean centered. Significance was set at $p < .05$, two-tailed, for all tests. To ease interpretation of results, I computed Hedges' g as a metric of intervention effect size, defined as the intervention effect divided by the pooled standard deviation of the outcome (What Works Clearinghouse, 2014).

Hedges' g (like Cohen's d) is positively biased upward when sample sizes are small (less than 50) (Durlak, 2009; Hedges & Olkin, 1985). To correct for this bias, I used a small sample correction developed by Hedges (1981) by multiplying g by a factor of $x = [1 - 3/(4N - 9)]$, where N is the total sample size. For Hedges' g , effect sizes of .2, .5, and .8 are considered small, medium, and large. Using standards from the What Works Clearinghouse (2014), effect sizes of 0.25 standard deviations or larger should be considered "substantively important," even if they many not reach statistical significance.

For my second research question concerning whether the level of SWPBIS implementation act as moderators of the effects of the ATI-UP program, I conducted a moderation analysis to examine potential differential program effects on study outcomes by adding an interaction term into the multiple regression analysis models. This interaction term was defined as the product of the dummy-coded variable indicating intervention condition (1 = ATI-UP, 0 = control) and the pre-test SWPBIS implementation measured at pre-test. By adding SWPBIS implementation as a moderator, we will be able to determine whether SWPBIS implementation affects the strength of the relation between ATI-UP implementation and attendance outcomes.

For my third research question exploring the extent to which school-level variables (school size, FRL status, race/ethnicity, and percentage of students receiving special education and ELL services) are correlated with the effects of the ATI-UP intervention, I conducted a preliminary exploration of the strength of relationships between and among school-level variables in February 2015 and December 2016. The correlational analysis help me determine the strength of the relation between the attendance outcomes and school-level variables and whether these relations changed over time.

CHAPTER IV

RESULTS

Results are presented below aligned with the study’s major research questions.

Before performing any statistical analyses, data were examined using IBM SPSS Statistics for Windows, version 23.0. Descriptive data for attendance and implementation measures are found in Table 2, while school-level demographic descriptive data are found in Table 1 (Chapter III).

Table 2
Attendance and Implementation Measures

Measure	ATI-UP		Control		Sample equivalence
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	Hedges’ <i>g</i> ^a
February 2016					
Average daily attendance	93.02	4.03	93.18	2.26	−0.05
December 2016					
Average daily attendance	94.48	1.50	93.43	1.76	0.62
Chronic or severe absent	16.91	7.46	18.81	8.86	−0.23
Implementation					
ATI-UP implementation, pre-test	4.29	2.70	8.54	5.74	−0.93
ATI-UP implementation, post-test	16.14	5.55	12.15	7.06	0.61
TFI Tier 1 total points, pre-test	20.93	5.01	20.15	6.18	0.14
TFI Tier 1 total points, post-test	21.21	4.3	20.85	6.53	0.06

Note. Table reports means (*M*) and standard deviations (*SD*).

^aHedges’ *g* with correction for small samples size bias reported and compares control and treatment groups.

To determine the effect of ATI-UP intervention on school-level student attendance rates while covarying for SWPBIS implementation, I ran a multiple regression analyses that controlled for level of SWPBIS implementation. In these analyses, 17% of the variability of ADA was explained by the model, $F(1, 25 = 2.43, p = .110)$. The effect

of ATI-UP on school ADA was moderate and positive (Hedges' g corrected for small sample sizes = .58). For schools with an average level of SWPBIS implementation, ADA was approximately 1% higher for schools in the ATI-UP condition compared with schools in the control condition, $B = 0.99$, 95% CI for B [-0.28, 2.26], $t = 1.60$, $p = .122$. The multiple regressions results are reported in Table 3. Schools that implemented ATI-UP improved their ADA (Hedges' $g = .58$), but these gains were not statistically significant ($p = .110$).

Table 3
Multiple Regression Results for Average Daily Attendance

Variable	B [95%CI]	SE B	β	t	p	Hedges' g^a
Intercept	93.46 [92.55, 94.38]	0.44		210.60	<.001	
Level of SWPBIS implementation ^b	0.08 [-0.04, 0.20]	0.06	0.26	1.39	.177	
ATI-UP	0.99 [-0.28, 2.26]	0.62	0.30	1.60	.122	.58
R^2	0.17					
Adjusted R^2	0.10					
F	2.43					
p	.110					

^aHedges' g with correction for small sample size.

^bLevel of SWPBIS implementation was centered on its mean.

To determine the effect of ATI-UP intervention on school-level student chronic or severe absenteeism while covarying for SWPBIS implementation, I ran a multiple regression model that controlled for level of SWPBIS implementation. Analysis indicated that 1% of the variability in chronic or severe absenteeism was explained by this model, $F(1, 25) = 0.18$, $p = .837$. The effect of ATI-UP on school chronic and severe absenteeism was small and negative (Hedges' $g = -.22$), such that for schools with an average level of

SWPBIS implementation, chronic and severe absenteeism was approximately 2% lower for schools in the ATI-UP condition, $B = -1.92$, 95% CI for $B [-8.56, 4.72]$, $t = -0.60$, $p = .556$. The multiple regressions results are reported in Table 4. Schools that implemented ATI-UP decreased chronic and severe absenteeism (Hedges' $g = -.22$), but these results were not statistically significant ($p = .837$).

Table 4
Multiple Regression Results for Chronic or Severe Absenteeism

Variable	B [95%CI]	$SE B$	β	t	p	Hedges' g^a
Intercept	18.82 [14.05, 23.59]	2.31		8.14	<.001	
Level of SWPBIS implementation ^b	0.03 [-0.59, 0.64]	0.30	0.02	0.09	.933	
ATI-UP	-1.92 [-8.56, 4.72]	3.22	-0.12	-0.60	.556	-.22
R^2	0.01					
Adjusted R^2	-0.07					
F	0.18					
p	.837					

^aHedges' g is reported with adjustment for small sample size.

^bLevel of SWPBIS implementation was mean centered.

To determine whether the ATI-UP intervention effect on ADA depended on the level of SWPBIS implementation, I tested the moderating effect of SWPBIS implementation. Analysis indicated that 19% of the variability of ADA was explained by this model, $F(1, 24) = 1.76$, $p = .184$. The level of SWPBIS implementation had a small and negative moderating effect on attendance outcomes in ATI-UP schools. The effect of implementation was 0.11 in control schools and -0.08 less in ATI-UP schools, $B = -0.08$, 95% CI for $B [-0.33, 0.16]$, $t = -0.71$, $p = .482$. The modeling effect of implementation

on condition effects is shown in Figure 2. The multiple regressions results are reported in Table 5. This result was not statistically significant ($p = .184$).

Table 5
Multiple Regression Results for Moderation on ADA

Variable	<i>B</i> [95% CI]	<i>SE B</i>	β	<i>t</i>	<i>p</i>	Hedges' <i>g</i> ^a
Intercept	93.46 [92.55, 94.41]	0.45		208.27	<.001	
Level of SWPBIS implementation ^b	0.11 [-0.04, 0.27]	0.08	0.37	1.51	.144	.55
ATI-UP	0.99 [-0.30, 2.28]	0.62	0.30	1.59	.125	.58
Level of SWPBIS implementation ^b × ATI-UP	-0.08 [-0.33, 0.16]	0.12	-0.18	-0.71	.482	-.26
<i>R</i> ²	0.19					
Adjusted <i>R</i> ²	0.08					
<i>F</i>	1.76					
<i>p</i>	.184					

^aHedges' *g* is reported with adjustment for small sample size.

^bLevel of SWPBIS implementation was mean centered.

Figure 2 shows the moderation results across pre-test schoolwide SWPBIS implementation (TFI, Tier 1 scores) on ADA. Schools with lower SWPBIS implementation scores (left side of Figure 2) had greater ATI-UP program effects than did schools with higher SWPBIS implementation scores. Moving from left to right, the ATI-UP program effect is above 0, but because the 95% confidence interval is so wide and includes 0, at no point is there a significant relationship. To shrink the confidence interval, a larger sample size would be needed.

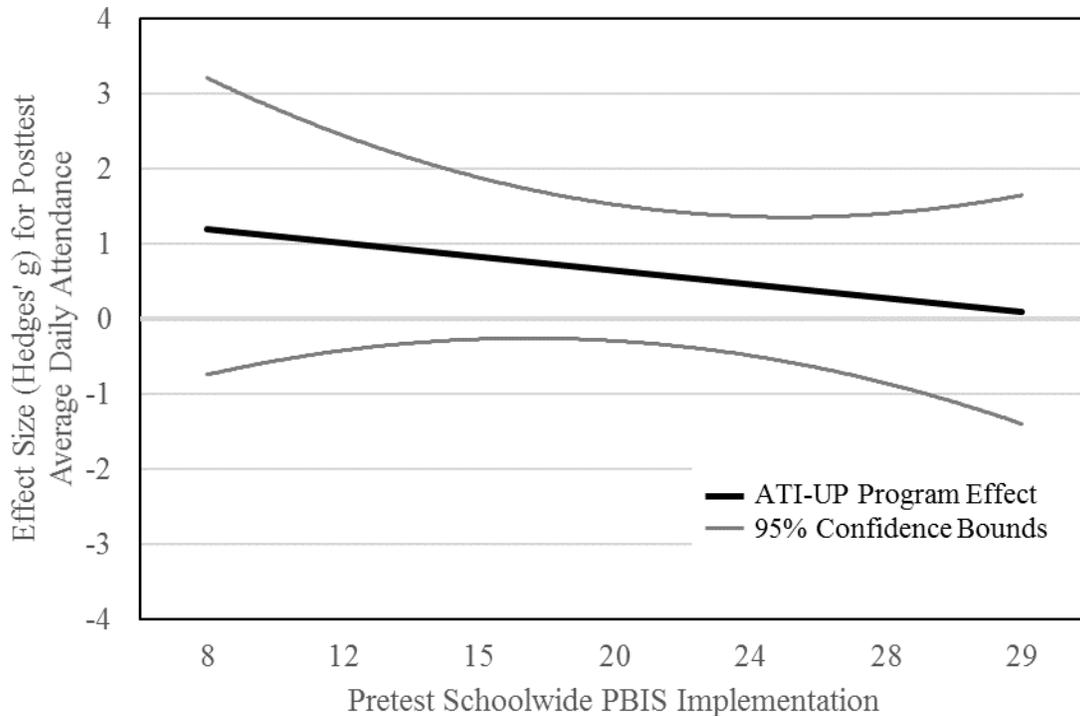


Figure 2. Moderation effect of SWPBIS implementation on ADA. The figure plots the difference between conditions for ADA (vertical axis) as a function of pre-test SWPBIS implementation. The heavy line shows the predicted difference between conditions across the range of SWPBIS values. The two lighter, outer lines depict the 95% confidence interval around the mean difference. Statistical significance was not detected because at no point did the confidence interval fall above or below zero.

To determine whether the ATI-UP intervention effect on chronic or severe absenteeism depended on the level of SWPBIS implementation, I tested the moderating effect of SWPBIS implementation. Analysis indicated that less than 1% of the variability in chronic or severe absenteeism was explained by this model, $F(1, 24) = 0.95, p = .435$. The level of SWPBIS implementation had a moderate and positive moderating effect on attendance outcomes in ATI-UP schools. The effect of implementation was -0.36 in control schools and 0.92 in ATI-UP schools, $B = 0.92, 95\% \text{ CI for } B [-0.33, 0.16], t = 1.57, p = .131$. The modeling effect of implementation on condition effects is shown in Figure 3. The multiple regression results are reported in Table 6. ATI-UP had a slightly

larger impact on reducing chronic or severe absenteeism in schools with lower levels of TFI (SWPBIS implementation), but this was not statistically significant ($p = .435$).

Table 6
Multiple Regression Results for Moderation on Chronic or Severe Absenteeism

Variable	<i>B</i> [95%CI]	<i>SE B</i>	β	<i>t</i>	<i>p</i>	Hedges' <i>g</i> ^a
Intercept	18.66 [14.02, 23.31]	2.25		8.30	<.001	
Level of SWPBIS implementation ^b	-0.36 [-1.14, 0.43]	0.38	-0.24	-0.95	.355	-.34
ATI-UP	-1.96 [-8.42, 4.50]	3.12	-0.12	-0.63	.536	-.23
Level of SWPBIS implementation ^b × ATI-UP	0.92 [-0.29, 2.13]	0.59	0.40	1.57	.131	.57
<i>R</i> ²	0.11					
Adjusted <i>R</i> ²	-0.01					
<i>F</i>	0.95					
<i>p</i>	.435					

^aHedges' *g* is reported with adjustment for small sample size.

^bLevel of SWPBIS implementation was mean centered.

Figure 3 shows the moderation effects for pre-test schoolwide SWPBIS implementation (TFI, Tier 1 scores) on chronic and severe absenteeism. Schools with lower SWPBIS implementation scores (left side of Figure 3) had greater ATI-UP program effects than did those schools with higher SWPBIS implementation scores. However, the confidence interval included zero, implying no statistically significant differences between conditions for all levels of SWPBIS implementation. To shrink the confidence interval, a larger sample size would be needed.

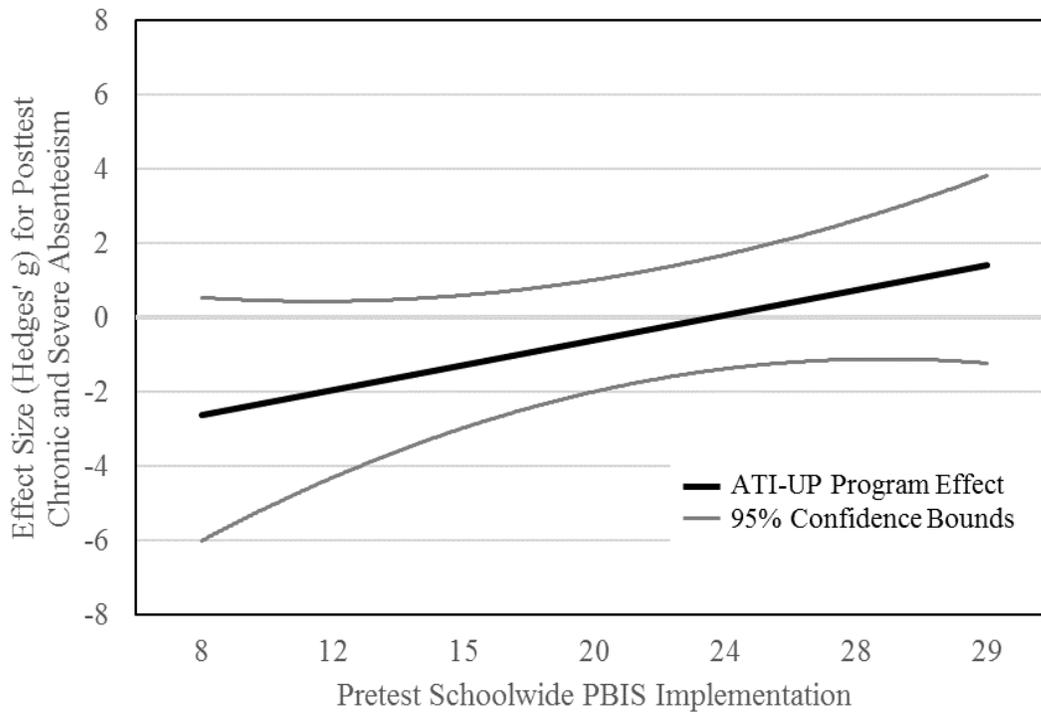


Figure 3. Moderation effect of pre-test SWPBIS implementation on chronic or severe absenteeism. The figure plots the difference between conditions for chronic and severe absenteeism (vertical axis) as a function of pre-test SWPBIS implementation. The heavy line shows the predicted difference between conditions across the range of SWPBIS values. The two lighter, outer lines depict the 95% confidence interval around the mean difference. Statistical significance was not detected because at no point did both confidence intervals fall above or below zero.

To determine the extent that school-level variables were correlated with ATI-UP intervention outcomes, I ran a correlation analysis on ADA and chronic or severe absenteeism pre-intervention (February 2016) and post-intervention (December 2016). Table 7 provides an overview of the bivariate correlations among school-level factors for the treatment (ATI-UP) and control groups. The corresponding school-level demographic descriptive data can be found in Table 1 (Chapter III). For ATI-UP schools, significant negative associations at pre-intervention were detected between the rates of ADA and FRL ($r = -.61, p < .01$), the percentage of students who are Black ($r = -.86, p < .01$), and

students receiving special education services ($r = -.60, p < .05$). At post-intervention, ATI-UP schools had a significant negative association between ADA and FRL ($r = -.71, p < .01$) and the percentage of students who are Black ($r = -.73, p < .05$). Significant correlations between school factors and chronic or severe absenteeism in the ATI-UP schools were not detected. For control schools, significant positive associations at pre-intervention were detected between ADA and self-reported years of SWPBIS implementation ($r = .61, p < .05$) and the percentage of Asian students enrolled ($r = .62, p < .05$). For control schools in December, significant negative correlations were found between chronic or severe absenteeism and years of self-reporting SWPBIS implementation ($r = -.61, p < .05$) and ADA ($r = -.78, p < .05$). ADA in February 2016 was significantly positively associated with ADA in December 2016 for ATI-UP schools ($r = .71, p < .01$) and control schools ($r = .74, p < .01$). For control schools, ADA in December was significantly negatively associated with chronic or severe absenteeism in December ($r = -.78, p < .01$).

To determine the extent that the ATI-UP implementation checklist was correlated with TFI Tier 1 total points, a correlation analysis was run. A significant positive association was detected between ATI-UP implementation pre-test and post-test for the whole sample ($r = .45, p < .05$) and the control group ($r = .83, p < .05$). A significant positive association was also detected between TFI Tier 1 pre-test and post-test for the whole sample ($r = .78, p < .05$) and the control group ($r = .96, p < .05$). Table 8 provides the bivariate correlation values between the ATI-UP and SWPBIS implementation measures.

Table 7
Bivariate Correlations Among School-Level Factors by Condition

Measure	ATI-UP			Control		
	ADA in February 2016	ADA in December 2016	Chronic or severe absenteeism in December 2016	ADA in February 2016	ADA in December 2016	Chronic or severe absenteeism in December 2016
Years of self-reported SWPBIS implementation	-.06	-.29	-.29	.35	.61*	-.61*
Years of SWPBIS SWIS implementation	.05	-.29	.05	.27	.07	-.15
FTE	-.26	-.10	-.42	.15	.43	-.25
School title ^a	-.28	-.44	-.36	.08	-.07	.18
Charter school ^a	.17	.27	-.27	-.02	.14	.09
Student-to-teacher ratio	.20	-.08	.28	.33	-.19	.39
Student enrollment	-.17	-.04	-.35	.24	.43	-.25
Free or reduced lunch (%)	-.61**	-.71**	.05	-.41	-.48	.50
American Indian (%)	.34	.16	.12	-.16	.02	-.03
Asian (%)	-.52	-.16	-.28	.51	.62*	-.50
Hispanic (%)	-.41	-.43	-.33	-.06	.07	-.06
Black (%)	-.86**	-.73**	-.01	.29	.30	.04
White (%)	.50	.51	.27	.05	-.17	.10
Two or more races (%)	-.01	-.44	.34	.12	-.04	.23
Female students (%)	.17	.25	-.26	.06	.20	-.14
English language learners (%)	-.60*	-.52	-.26	-.03	-.13	-.15
Special education services (%)	-.19	-.50	.00	-.18	-.15	-.08

ATI-UP implementation checklist, pre-test	.16	.41	-.43	-.15	.21	-.36
ATI-UP implementation checklist, post-test	-.03	.08	-.33	-.31	.07	-.31
TFI Tier 1 total points, pre-test	.33	.10	.38	.49	.40	-.25
TFI Tier 1 total points, post-test	.48	.26	.00	.54	.35	-.15
Average daily attendance (%), Feb 2016		.71**	-.12		.74**	-.31
Average daily attendance (%), Dec 2016	.71**		-.29	.74**		-.78**
Chronic or severe absenteeism (%), Dec 2016	-.12	-.29		-.31	-.78**	

Note. See Table 1 for means and standard deviations of school-level factors.

^aIndicates a Spearman correlation is reported, if not identified a Pearson's *r* is reported.

p* < .05. *p* < .01 (two tailed).

Table 8
Bivariate Correlations Among Implementation Measures

Measure		1	2	3
Whole sample ($n = 27$)				
ATI-UP implementation checklist, pre-test	1			
ATI-UP implementation checklist, post-test	2	.45*		
TFI Tier 1 total points, pre-test	3	.08	-.27	
TFI Tier 1 total points, post-test	4	.12	-.16	.78**
ATI-UP ($n = 14$)				
ATI-UP implementation checklist, pre-test	1			
ATI-UP implementation checklist, post-test	2	.43		
TFI Tier 1 total points, pre-test	3	-.13	-.46	
TFI Tier 1 total points, post-test	4	-.16	-.15	.47
Control ($n = 13$)				
ATI-UP implementation checklist, pre-test	1			
ATI-UP implementation checklist, post-test	2	.83**		
TFI Tier 1 total points, pre-test	3	.24	-.20	
TFI Tier 1 total points, post-test	4	.25	-.19	.96**

* $p < .05$. ** $p < .01$ (two-tailed).

CHAPTER V

DISCUSSION

A randomized, wait-list controlled study was conducted to examine the effects of ATI-UP intervention on school-level attendance rates, to determine whether the level of SWPBIS implementation acted as a moderator of these effects, and to perform an exploratory correlation analysis of demographic variables. Analysis of the results from this randomized control trial provide useful preliminary findings.

This study extends the attendance literature base in two important ways. Exploration of the ATI-UP intervention adds to the sparse literature base investigating proactive and preventive approaches to increasing attendance and decreasing chronic absenteeism. Additionally, the findings offer a small contribution to the evidence base supporting SWPBIS as an effective framework for addressing student needs and improving student outcomes. In the following sections, I discuss these findings and their implications in more details.

Interpretation of Results

The overall purpose of this study was to determine whether the implementation of ATI-UP could have an impact on attendance in elementary schools. The ATI-UP intervention is a preventive, proactive, school-wide approach that guides school teams to create a multi-tiered, multi-system framework to increase attendance for all students and reduce the number of students identified as chronically absent. For this study, teams focused on building their Tier 1 positive and preventive systems, which included recruiting a problem-solving team that evaluates attendance data, increasing

parental/community engagement, systematically promoting attendance in school, and implementing a motivation systems to improve attendance.

Although not statistically significant, implementation of ATI-UP, while controlling for SWPBIS implementation, was associated with a moderate effect on increasing ADA (Hedges' $g = .58$) and a small effect on decreasing chronic absenteeism (Hedges' $g = -.22$). All tests on SWPBIS as a moderator were not statistically significant ($p > .05$). Differences between treatment and control schools were analyzed through examining correlations with attendance and chronic absenteeism data and school-level variables. In the following sections, I discuss the results from the analysis and describe how these results can be used to guide educators in improving attendance in elementary schools in the areas of ADA, chronic absenteeism, SWPBIS implementation, and school-level correlations. In view of the small sample size, all findings in this section must be viewed as preliminary and need replication with larger samples to have confidence in decision making. Additionally, there is a recognized issue of trying to make subgroup interpretations when all the data were aggregated at the school level. Finally, since the data were gathered over a 2-year period, some of the changes in relations may be due to changes in student populations (e.g., moving to another school). Future research should reexamine these relations.

ADA. Preliminary evidence suggested that the implementation of ATI-UP in schools was associated with a moderate increase in ADA (Hedges' $g = .58$), although this effect was not statistically significant ($p = .110$). Schools that implemented ATI-UP had on average 1% higher ADA as compared with schools that had not implemented the program. This finding is promising, suggesting that schools may be able to exert some

control over student attendance by implementing universal prevention that focuses on being proactive and creating a school-wide system for all students, staff, and families. Paired with prior research (Alexander et al., 1997; Freeman et al., 2016; Hammond, Linton, Smink, & Drew, 2007) demonstrating that attendance is an important indicator of school effectiveness and long-term student outcomes, the influence of ATI-UP on ADA should be explored and replicated in future studies with a larger sample size.

Chronic absenteeism. Preliminary evidence suggested that the implementation of ATI-UP in schools was associated with a small decrease in the percentage of students considered chronically absent. The effect sizes for student outcomes were considered small (Hedges' $g = -.22$) and not statistically significant ($p = .837$). Schools that implemented ATI-UP, on average, had a 2% decrease in students considered chronically or severely chronically absent. However, due to the high p value, this finding may be due to random sample variability rather than an ATI-UP intervention effect. Future research with a larger sample size should be conducted to reevaluate this effect.

Although not statistically significant, this finding does require unpacking. ATI-UP focused on Tier 1 implementation (increasing ADA for all students) and did not directly provide Tier 2 interventions for students who would be considered chronically absent. This small decrease may support the hypothesis that an effective MTSS framework with a strong universal tier reduces the need for supports at subsequent tiers (Barnes & Harlacher, 2008; Kearney & Graczyk, 2014). A more effective Tier 1 may automatically decrease the percentage of students identified as needing more intensive support (Barnes & Harlacher, 2008; Kearney & Graczyk, 2014). Potentially, the schools that implemented ATI-UP improved the quality of Tier 1, thereby impacting the number

of students identified as chronically absent. If replicated with a larger sample, this finding would be compelling given that decreasing the number of students considered chronically absent could enable schools to more easily provide efficient and effective Tier 2 attendance interventions to students who truly need them (Anderson & Borgmeier, 2010; Lane, Oakes, Ennis, & Hirsch, 2014).

SWPBIS. Preliminary evidence indicated that SWPBIS did not act as a moderator in this study; none of the findings were statistically significant ($p > .05$). In treatment schools, lower levels of SWPBIS implementation had a slightly greater effect on increasing ADA ($p = .482$) and reducing chronic or severe absenteeism ($p = .131$). In other words, the treatment effect of the ATI-UP intervention was higher in schools with lower TFI scores and lower in schools with higher TFI scores. Previous research has shown that implementing SWPBIS with fidelity was associated with higher levels of attendance across time, which may have an impact on the treatment effect (Caldarella, Shatzer, Gray, Young, & Young, 2011; Freeman et al., 2016; Pas & Bradshaw, 2012). Schools with higher attendance rates pre-intervention may not have been able to benefit as much from the intervention. However, given the nonsignificant findings in this study, it is unclear how SWPBIS and ATI-UP interact; a larger sample size might elucidate the relation.

In this study, seven treatment schools and seven control schools met the 70% threshold for adequate implementation of SWPBIS according to their TFI results (McIntosh et al., 2017; Mercer, McIntosh, & Hoselton, 2017). A value of 70% equals a score of 21 or higher on the TFI. Seven treatment schools and six control schools did not meet that threshold. Schools in the treatment condition that met the 70% threshold had

higher rates of ADA at pre-test (schools that met, $M = 94.15$ ADA; schools that did not meet, $M = 91.89$ ADA). Schools in the control condition followed the same pattern (schools that met, $M = 94.21$ ADA; schools that did not meet, $M = 91.98$ ADA). Schools with higher levels of attendance at pre-intervention may not be able to improve attendance at the same rate as schools with lower levels of attendance due to a ceiling effect. The difference in ADA between schools who met the TFI threshold and those who did not supports previous findings that suggest that schools that implement SWPBIS with fidelity may receive a secondary benefit of higher attendance rates.

In this study, SWPBIS implementation was measured using TFI Tier 1 points, and ATI-UP implementation was measured using the fidelity tool (see the Appendix). Although it was hypothesized that SWPBIS and ATI-UP share common factors that improve attendance, the two implementation tools were not correlated with each other in this study (see Table 8 for correlation results). This may indicate that SWPBIS and ATI-UP share other factors that impact attendance but were not captured in these implementation measures.

One factor that was not directly measured by either instrument was the perception of school climate. Research suggests the school climate may contribute to a student's sense of connection and engagement with their school, which can impact student outcomes (Barry et al., 2011; Gottfredson, 2001; Mitchell & Bradshaw, 2013; Reid, 2005). A positive school climate has been demonstrated to be correlated with decreased student absenteeism in middle school and high school (Gottfredson & Gottfredson, 1989; Reid & Kendall, 1982; Rumberger, 1987). SWPBIS is a whole school intervention meant to enhance a positive school climate (Bradshaw et al., 2009; Horner & Sugai, 2000; Sugai

& Horner, 2005). ATI-UP also aims to enhance a positive school climate, specifically with a focus on attendance.

Future research could be conducted to gather additional data on the perception of the school climate from the students, school personnel, and parents. Over the last several decades researchers have tried to define, measure, and research school climate (Cohen, McCabe, Michelli, & Pickeral, 2009; Zullig, Koopman, Patton, & Ubbes, 2010). A school climate measure that is reliable and valid could assess how students, parents, and school personnel perceive the school climate in four major areas: safety, relationships, teaching and learning, and the institutional environment (Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013). Future research could be conducted to explore whether perception of school climate acts as a moderator of the ATI-UP intervention.

Examining differences between treatment and control schools. Preliminary evidence indicates that there were statistically significant relations between ADA and a few of the school-level variables. Because all data were aggregated for making interpretations at the school level, interpretation of the impact on smaller subgroups (e.g., ELL status and race/ethnicity) is highly tentative.

Treatment schools. There was a statistically significant negative relation between attendance and poverty. Treatment schools with a higher percentage of students eligible for FRL had correspondingly lower ADA rates at pre-intervention ($r = -.61, p < .01$). This finding supports previous study findings of the correlations associated with attendance that revealed that attendance was the lowest in schools with high poverty (Buehler et al., 2012; Chang & Romero, 2008; Epstein & Sheldon, 2002; Romero & Lee, 2007). At post-intervention this relation remained ($r = -.71, p < .01$). This finding

suggests that implementation of ATI-UP did not change the significantly negative relation between FRL and ADA.

Treatment schools that had a higher proportion of students that are Black had lower rates of ADA pre-intervention ($r = -.86, p < .01$). This finding supports previous research that revealed that absenteeism was greater for students of color, with the exception of students who are Asian (Chang & Romero, 2008). This relation did not change at post-intervention ($r = -.73, p < .01$). This finding suggests that implementation of ATI-UP did not change the significantly negative relation between students who are Black and ADA.

Treatment schools that had a higher proportion of students receiving ELL services had a statistically significant negative relation with ADA at pre-intervention ($r = -.60, p < .05$). This relation was still negative post-intervention but was no longer statistically significant ($r = -.52, p < .05$). This finding suggests that implementation of ATI-UP changed the significantly negative relation between students receiving ELL services and ADA.

Control schools. Control schools did not have any significant correlations at pre-intervention. In December 2016 in control schools, a positive relation was found between the proportion of enrolled students who are Asian and ADA ($r = .62, p < .05$). This relation was similar pre-intervention but was not significant ($r = .51, p > .05$). This result differed from that of treatment schools, which had a nonsignificant negative relation pre-intervention ($r = -.52, p > .05$) and post-intervention ($r = -.16, p > .05$). This finding supports the opinion of Mayhew and Simonoff (2015) that dummy coding (collapsing populations into White/non-White binary categories) may not be appropriate in

quantitative practices for analyzing and interpreting categorical race-based independent variables. Use of binary categories may have negative consequences such as producing false-positive results (i.e., the intervention is deemed effective, but it is because the students who are Asian have higher attendance) or false-negative results (i.e., the intervention is deemed non-effective when the intervention worked for students who are non-White, but there is a ceiling effect created by high attendance of students who are Asian prior to the intervention) (Cook & Cook, 2017). Keeping the race/ethnicity categories separate will help researchers and teachers determine which attendance interventions work the best for which students.

In control schools, a positive relation was found between years of self-reported SWPBIS implementation and December 2016 ADA ($r = .61, p < .05$). The relation in treatment schools was nonsignificantly negative ($r = -.29, p > .05$). For control schools the more time they reported implementing SWPBIS, the higher their average attendance. In addition, there was a negative relation between years of self-reported SWPBIS implementation and percentage of students in control schools who would be considered chronic or severely chronically absent in December ($r = -.61, p < .05$). Treatment schools also had a negative relation, but it was nonsignificant ($r = -.29, p > .05$). This means that the longer that control schools reported implementing SWPBIS, the stronger the relation this implementation had with decreasing the number of chronically or severely chronically absent students. This supports prior research that SWPBIS implementation has an impact on attendance (Freeman et al., 2016; Gill, 2017; Johnson et al., 2013; Pas & Bradshaw, 2012); however, it may suggest that the SWPBIS benefit for attendance becomes stronger the longer schools have implemented the program.

Implementation of evidence-based practices, such as SWPBIS, is a complex process that may take years to complete all the stages: exploration and adoption, program installation, initial implementation, full operation, innovation, and sustainability (Fixssen, Naoom, Blase, Friedman, & Wallace, 2005). Schools in this study that self-reported SWPBIS implementation for more years had better attendance. This finding may indicate that the beneficial effect on attendance will be more pronounced the longer a school works on establishing and implementing a positive climate through SWPBIS.

Limitations

The results from this study must be interpreted in light of several limitations related to study design and school-level data. These limitations are associated with the sample size, design of the study, coaching support, and the data collected.

Sample size. Due to the small size of this study, results need to be interpreted with caution, and replication with a larger sample is needed. Based upon preliminary studies of the program (Sprick et al., 2015), I hypothesized that a large effect on attendance is possible with the implementation of ATI-UP. While a priori power analyses indicated that 28 schools was a sufficient sample size to detect significant findings for a large effect, the 27 schools in our study achieved only a moderate effect for ADA (Hedges' $g = .58$) and a small effect for chronic absenteeism (Hedges' $g = -.22$), with both findings nonsignificant ($p > .05$). Insufficient power makes it difficult to identify statistically significant effects and may have increased the Type II error in this study. A Type II error occurs when the analysis produces results that fail to reject a false null hypothesis, thus leading to a false-negative result (Howell, 2012). A larger sample size

may help future researchers obtain statistically significant results that will decrease the chance of a Type II error (Maxwell, 2004).

Design of the study. This study was designed as a wait-list randomized control trial with schools randomly assigned to conditions after being matched on the primary variable, ADA. While this approach controlled for random sample variability that could have occurred around the primary variable (e.g., all schools with high pre-test ADA randomly assigned to the same condition), it did lead to differences for other variables (e.g., title schools, ELL, and students who are non-White) that have been associated with lower attendance rates in prior studies (Buehler et al., 2012; Chang & Romero, 2008; Epstein & Sheldon, 2002; Romero & Lee, 2007).

Although I could have utilized a different statistical analysis to make up for these baseline differences by including them as covariates, other methodologists have stated that adding covariates can bias the estimated treatment effect (Meehl, 1970; Miller & Chapman, 2001; Pedhazur, 1997; Schulz et al., 2010; Spector & Brannick, 2011). Other than running a correlation analysis post hoc with school-level variables, these variables were not considered a priori in the design of the study. With a larger sample size, future researchers may want to consider matching these variables prior to randomization into the treatment conditions.

Another option to make up for these baseline differences may have been to design the study to include a moderation analysis. Although this approach was considered during research design, the small size of the sample meant that adding moderators to the analysis would likely have led to statistically nonsignificant results and also reduced the stability of the estimates (Aiken, West, & Reno, 1991; Fairchild & MacKinnon, 2009). Future

studies with a larger sample size could increase the feasibility of testing for interactions among the variables, such that future researchers could examine whether certain variables such as title school status, ELL status, or enrollment of students who are non-White are affected differently by the intervention.

Coaching support. Coaching support is now viewed as a critical component of any professional development opportunity. In 2002, Joyce and Showers conducted a meta-analysis of the effects of training and coaching on implementation of practices in classrooms and found that with coaching support, 95% of teachers transferred the knowledge and skills learned during professional development into daily practice. Unfortunately, due to the nature of the present study and the lack of external funding sources, coaching was limited to technical assistance via email communication and a 1-hour follow-up webinar held in early November. There was variability in the responses of schools to this follow-up support. Eight of the 14 treatment schools asked for additional support in the form of feedback or requesting additional examples via email. Five ATI-UP teams attended the follow-up live training, and nine watched the recorded webinar. While this variability may be expected due to the voluntary nature of the request for follow-up support, within the schools that volunteered to participate in the study there seemed to be a range of motivations for requesting follow-up support.

Data. Data were provided at the school level and were not broken down into subdemographic categories at the student level. As always, there is a need for educational research to identify what interventions work for which students and who should conduct these interventions under what conditions (Cook, Tankersley, & Landrum, 2013; West et al., 2016). However, with the data generated here it was impossible to determine whether

ATI-UP had an impact specifically on subpopulations of students who have a historical trend of being chronically absent (e.g., ELL students, students who are non-White, students from poverty, and students receiving special education services) because the data were collected at the school level. For example, I could examine the impact on the school but could not determine the effect for students who received special education services because I did not have access to individual attendance records. While the correlation between the intervention and attendance was examined, the specific students for whom ATI-UP was and was not effective could not be determined. Looking at school-level correlations and extrapolating to the subdemographic categories could have led to both a Type I error (i.e., overgeneralization that the intervention worked for all students) or a Type II error (i.e., undergeneralization that the intervention did not work for any students) (Howell, 2012). Future studies with individual level data could include invariance analyses to examine differences at the subgroup level.

Recommendations for Future Research

While this study provides a good starting point for research on prevention programs for absenteeism, there are several recommendations for future research. Below, I discuss recommendations for the design of future studies, including analytic recommendations, time frames for implementation, sample sizes, coaching support, data collection, and incorporation of MTSS interventions for students who need Tier 2 or Tier 3 supports.

Design of the study. ATI-UP intervention was designed to impact student attendance rates. Since students are nested within classrooms that are nested within schools, future research may include a different analytic technique such as hierarchical

linear modeling (HLM) to account for these inherent nested structures. Researchers using HLM analyses could appropriately test relationships that occur at each level of the schools' nested structure and estimate potentially meaningful relationships that might cross levels of the hierarchy (Raudenbush & Byrk, 2001). For example, an increase in school-level ADA might be related to certain grade levels or classrooms.

In addition, if enough schools participate in future research studies, researchers should consider adding additional moderators to their analyses. Inclusion of potential moderators such as FRL, ELL, race/ethnicity, and special education services might further help researchers determine what works for which students and who should conduct interventions under what conditions (Cook et al., 2013; West et al., 2016).

Sample. This study was a nonfunded doctoral dissertation research project; therefore, there was a limit to its size and scope. Future research would benefit from including a larger sample size so that researchers have the statistical power to confidentially detect small to moderate effects (Faul et al., 2009). While this study did detect moderate effects on ADA (Hedges' $g = .58$) and a small effect for chronic absenteeism (Hedges' $g = -.22$), there was not enough statistical power to determine the significance of the size of these effects. Therefore, it is difficult (if not impossible) to say with confidence that these effects were attributed to the intervention and were not due to random sample variability.

In addition to recruiting more schools to increase the statistical power of the analyses, future studies may benefit from recruiting schools outside of the state of Oregon to increase the generalizability of the results. Inclusion of schools from multiple states will allow researchers to investigate whether state policy plays a role in the effectiveness

of the intervention. Some states (including Oregon) are further along in the process of creating policies and procedures that address attendance in their public schools. For instance, in Oregon legislature enacted House Bill 4002 (Chronic Absenteeism Statewide Plan, 2015), which includes direction to the Department of Education and the Chief Education Office to jointly develop a statewide education plan to address chronic absenteeism. The plan provides districts with guidance and best practices for tracking, monitoring, and addressing chronic absenteeism. The authors of the plan recommended that Oregon adopt a statewide definition of chronic absenteeism (missing more than 10% of school for any reason), increase access to attendance data, execute an attendance awareness month, and support regional consortiums to plan for addressing chronic absenteeism through local contexts. Inclusion of other states into future studies could allow researchers to provide more solid recommendations for attendance interventions that are tailored to meet the needs of each state and can guide future state policy development.

In the present study, only elementary schools were invited to participate based on the idea that chronic absenteeism is habitual; therefore, expansion of this research to secondary schools is needed for generalization. There have been multiple studies demonstrating that children who are chronically absent in their earliest years (pre-K through first grade) continue to have attendance problems throughout their school careers (Buehler et al., 2012; Connolly & Olson, 2012; Ehrlich et al., 2013; Roderick et al., 1997). Future studies could expand this research by studying ATI-UP in middle school and high school settings. In addition, researchers may explore which components of the intervention are most effective in the elementary, middle school, and high school setting.

Fidelity to ATI-UP. Control and treatment teams completed the ATI-UP fidelity tool (see the Appendix) pre- and post-intervention (see Table 2). The ATI-UP fidelity tool included the Tier 1 components of the intervention broken into eight domains, with 30 components spread among those domains. Future research could be conducted to examine the extent to which the items in the ATI-UP fidelity tool measure implementation by performing a formal content validity study, a usability and reliability study, and a validation study.

Once it is determined that the ATI-UP fidelity tool can allow inferences regarding a school's intervention implementation, then researchers need to determine whether any of the domains or components are more effective for increasing ADA and decreasing chronic absenteeism. In the present study, schools self-reported their intervention implementation through the ATI-UP fidelity tool. Treatment schools increased their implementation of the components from the pre-intervention ($M = 4.28, SD = 2.7$) to post-intervention ($M = 16.14, SD = 5.5$). Control schools also increased their implementation of the components from pre-intervention ($M = 8.54, SD = 5.74$) to post-intervention ($M = 12.15, SD = 7.06$). This increase across control and treatment schools may have been due to an increase in messaging about attendance from the Oregon Department of Education and the implementation of Oregon House Bill 4002.

Future research should be conducted to explore the implementation fidelity data to determine which items were most likely to be implemented in schools, which items were least likely or not implemented in schools, and how those items related to attendance outcomes. In addition, examination of these features may guide future follow-up support.

Increase implementation time frame. This study was designed to test for the effects of implementing ATI-UP from the beginning of the school year to the last day before winter break. This was a relatively short duration for a study on attendance, but I hypothesized that this time was long enough to show impact on attendance given prior results from ATI-UP (Sprick et al., 2015). Schools' average implementation was 16.14 items out of the 30 items listed on the ATI-UP fidelity tool. Fixsen et al. (2005) suggest that full implementation of a new initiative may take 2 to 4 years, so the assumption that schools could implement all items on the ATI-UP fidelity tool in 3 months may have been ambitious. Schools may have found some items too resource intensive or otherwise untenable to implement in such a short amount of time. Future research should be conducted to explore the implementation dynamics for ATI-UP in schools over a longer time period.

Kennedy (2016) argues that professional development research should follow teachers (or in the case of this study, schools) for at least 1 year to discover the extent to which teachers (and schools) sustain the new practice after support is gone. By lengthening the timeline used in this study, researchers may be able to explore additional questions such as whether ATI-UP effects change the longer schools implement the program and whether these effects are moderated by SWPBIS implementation. Longitudinal research would allow researchers to explore whether ATI-UP implementation results in changes in practice rather than temporary compliance for the duration of the study.

In addition, studying the intervention over a longer period of time may allow researchers to determine when in the school year an intervention is most likely to impact

attendance, which could guide future determination of when schools should offer booster sessions of the universal prevention components. Gottfried and Kirksey (2017) were critical of the policy and practices aimed at reducing school absenteeism in the fall (i.e., Attendance Awareness Month) and stated that attendance initiatives may have a stronger impact on student test scores if schools focus on attendance during the 30-day window leading up to state testing. These authors found that spring attendance was linked to math and English language arts (ELA) scores for third, fourth, and fifth grade students. Their results suggest that for each missed day of school in the spring, students' spring test scores declined by a standardized regression coefficient of -0.03σ in ELA and -0.07σ in math. A longer study duration would allow researchers to analyze the trends in attendance and gather recommendations for when schools should implement/revisit components of ATI-UP throughout the school year.

Follow-up support. In future studies, researchers should investigate the impact of providing follow-up support and its effect on changing student attendance outcomes. Follow-up support is important because changes in behavior are difficult without additional support and guidance (Fixsen et al., 2005; Joyce & Showers, 1980; Putnam & Borko, 2000). Driscoll, Wang, Mashburn, and Pianta (2011) found that teachers were 13 times more likely to implement an intervention when they were provided with additional support after a professional development training. By extension, this may also be the case when applying an intervention at the school level. Schools' average implementation was 16.14 items out of the 30 items listed on the ATI-UP fidelity tool, which is only 54% of the items. While a limited amount of follow-up was provided as part of the study (i.e., one webinar that was completed by all treatment schools: representatives from five

schools attended the live training, and representatives from nine schools watched the recorded version later), the nonfunded nature of this study limited my ability to provide more timely and personal coaching support. Future researchers should explore which components of the current study were and were not consistently implemented in schools to guide future coaching support. Future researchers can evaluate if coaching support increases the number of items implemented in schools and then re-explore the ATI-UP program effect on attendance.

Student data. This study focused on the effects of ATI-UP on school-level attendance data and did not investigate the impact on individual students. Prior research has suggested that students of color, students who live in poverty, and students receiving special education services are at risk for having higher rates of absenteeism (Alexander et al., 1997; Buehler et al., 2012; Chang & Romero, 2008; Epstein & Sheldon, 2002). Collection of student-level attendance data will allow future researchers to analyze the effects of the intervention on student subgroups. In addition, researchers may be able to analyze which intervention components have the highest probability of changing attendance behavior for specific subgroups.

Conclusion

Students must attend school to receive the benefits of education. Educational stakeholders and policy makers at the federal and state levels have increased their discussions of and raised concerns about the impact of attendance on academic performance and outcomes for students. Despite the limitations of the present study, the results have implications for practice, policy, and future research. Findings from this study provide initial support for the value of implementing school-wide universal

prevention programs focused on attendance. When schools develop systems that include a problem-solving team, increase parental/community engagement, promote attendance in school, and provide motivation for improvement in attendance, these systems can have a positive impact on the overall ADA and decrease the percentage of students considered chronically absent. While additional research is needed, the present study results indicate that school programs can have an impact on student attendance.

APPENDIX

ATTENDANCE AND TRUANCY

Universal Procedures and Interventions Fidelity Tool

Check Column 1, 2, 3, or 4. ➔	Column 1	Column 2	Column 3	Column 4
Strategy	No, we have not implemented this strategy.	No, but we are planning to implement this strategy.*	Yes, this strategy has been in place for a year or more prior to the current training effort.*	Yes, we have implemented this strategy based on the training.*
*Add details if checked—Who, What, When, and How.				
TEAM ESTABLISHED FOR ATTENDANCE				
1. An attendance team is established (or is a subset of a pre-existing SWPBIS team) and includes at least one administrator, interventionist, and teacher.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
2. The attendance team has a clear mission to improve attendance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			

Strategy	No, we have not implemented this strategy.	No, but we are planning to implement this strategy.*	Yes, this strategy has been in place for a year or more prior to the current training effort.*	Yes, we have implemented this strategy based on the training.*
	*Add details if checked—Who, What, When, and How.			
TEAM ESTABLISHED FOR ATTENDANCE (CONTINUED)				
3. The attendance team meets regularly (at least every 2 months) to review attendance data and refine any action plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
4. The attendance team has developed an action plan with specific tasks and deadlines.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
SYSTEM IN PLACE FOR COLLECTING AND TRACKING ATTENDANCE DATA				
5. Attendance data are collected (including all excused absences, unexcused absences, in-school suspensions, and out-of-school suspensions).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			

Strategy	No, we have not implemented this strategy.	No, but we are planning to implement this strategy.*	Yes, this strategy has been in place for a year or more prior to the current training effort.*	Yes, we have implemented this strategy based on the training.*
	*Add details if checked—Who, What, When, and How.			
SYSTEM IN PLACE FOR COLLECTING AND TRACKING ATTENDANCE DATA (CONTINUED)				
6. There is school-wide agreement on attendance percentage cutoffs that indicate regular attendance, at-risk attendance, chronic absenteeism, and severely chronic absenteeism.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
7. A data system is in place to collect and report on average daily attendance and attendance data for all groups indicated in Item 2 above.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
8. The attendance team has easy access to attendance data that can be used to identify individual students who are chronically absent.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			

Strategy	No, we have not implemented this strategy.	No, but we are planning to implement this strategy.*	Yes, this strategy has been in place for a year or more prior to the current training effort.*	Yes, we have implemented this strategy based on the training.*
	*Add details if checked—Who, What, When, and How.			
SYSTEM IN PLACE FOR COLLECTING AND TRACKING ATTENDANCE DATA (CONTINUED)				
9. Data are reviewed at attendance team meetings, and an action plan is developed to address identified concerns.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
PUBLICIZE THE IMPORTANCE OF ATTENDANCE				
10. The attendance team has implemented a kickoff strategy to create awareness and enthusiasm among staff, students, and families (e.g., kickoff assembly or fundraiser).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			

Strategy	No, we have not implemented this strategy.	No, but we are planning to implement this strategy.*	Yes, this strategy has been in place for a year or more prior to the current training effort.*	Yes, we have implemented this strategy based on the training.*
	*Add details if checked—Who, What, When, and How.			
PUBLICIZE THE IMPORTANCE OF ATTENDANCE (CONTINUED)				
11. The attendance team has a regular schedule and medium for sharing attendance data with staff, students, and families (e.g., newsletter, column, website, or robocalls).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
12. The attendance team has written press releases for local media.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
13. The attendance team has enlisted the help of local leaders and popular figures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			

Strategy	No, we have not implemented this strategy.	No, but we are planning to implement this strategy.*	Yes, this strategy has been in place for a year or more prior to the current training effort.*	Yes, we have implemented this strategy based on the training.*
	*Add details if checked—Who, What, When, and How.			
PUBLICIZE THE IMPORTANCE OF ATTENDANCE (CONTINUED)				
14. The attendance team has sent letters or representatives to enlist help from community organizations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
ESTABLISH ATTENDANCE GOALS AND ACKNOWLEDGE IMPROVEMENTS				
15. The daily school-wide attendance rate is publicly posted.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
16. At least 80% of staff have daily motivational strategies in place in the classroom (e.g., classroom attendance graph, attendance game, and class-wide reinforcement system).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			

Strategy	No, we have not implemented this strategy.	No, but we are planning to implement this strategy.*	Yes, this strategy has been in place for a year or more prior to the current training effort.*	Yes, we have implemented this strategy based on the training.*
	*Add details if checked—Who, What, When, and How.			
ESTABLISH ATTENDANCE GOALS AND ACKNOWLEDGE IMPROVEMENTS (CONTINUED)				
17. Friendly competitions for improving attendance are routinely conducted.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
STAFF PROVIDES AN INFORMAL FOCUS ON ATTENDANCE				
18. At least 80% of staff report that they greet students by name each day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
19. At least 80% of staff report that they welcome students back after absences.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			

Strategy	No, we have not implemented this strategy.	No, but we are planning to implement this strategy.*	Yes, this strategy has been in place for a year or more prior to the current training effort.*	Yes, we have implemented this strategy based on the training.*
	*Add details if checked—Who, What, When, and How.			
STAFF PROVIDES AN INFORMAL FOCUS ON ATTENDANCE (CONTINUED)				
20. At least 80% of teachers report that they check in with guardians when students are gone for more than 1 day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
STAFF PROVIDES A FORMAL FOCUS ON ATTENDANCE				
21. At least 80% of teachers report that they emphasize the importance of attendance (e.g., social stories and websites).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
22. At least 80% of teachers report that they deliver lessons that emphasize the importance of attendance (e.g., incorporated into reading or math lessons).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			

Strategy	No, we have not implemented this strategy.	No, but we are planning to implement this strategy.*	Yes, this strategy has been in place for a year or more prior to the current training effort.*	Yes, we have implemented this strategy based on the training.*
	*Add details if checked—Who, What, When, and How.			
STAFF PROVIDES A FORMAL FOCUS ON ATTENDANCE (CONTINUED)				
23. When asked the question, “Why is it important to be at school?” 8 out of 10 students can tell staff why attendance is important and how their attendance is linked to the school goal.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
24. At least 80% of teachers report that they encourage their students to monitor the school-wide graph.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			

Strategy	No, we have not implemented this strategy.	No, but we are planning to implement this strategy.*	Yes, this strategy has been in place for a year or more prior to the current training effort.*	Yes, we have implemented this strategy based on the training.*
	*Add details if checked—Who, What, When, and How.			
COMMUNICATE WITH PARENTS ABOUT THE IMPORTANCE OF ATTENDANCE				
25. At least once each month, the school provides families and the community with updates about attendance (e.g., memos, newsletters, robocalls, and social media).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
26. The school reports increased messaging around problematic times and issues (e.g., before the holiday season).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
27. The school provides families with guidelines for attendance (e.g., how sick is too sick and sleep tips).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			

Strategy	No, we have not implemented this strategy.	No, but we are planning to implement this strategy.*	Yes, this strategy has been in place for a year or more prior to the current training effort.*	Yes, we have implemented this strategy based on the training.*
	*Add details if checked—Who, What, When, and How.			
COMMUNICATE WITH PARENTS ABOUT THE IMPORTANCE OF ATTENDANCE (CONTINUED)				
28. The school has a systematic plan to connect with parents at the earliest signs of a problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
29. The school has a graduated series of steps for connecting with families if a student's attendance continues to be a problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			
30. The school provides family engagement activities (e.g., family nights).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Who: What: When: How:			

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