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Using a State-wide Survey to Determine the Impact of Positive Behavior Interventions and Supports on Students' Self-Reported Perceptions, Feelings, and Behaviors

Rachel Youngblom
Minnesota State University - Mankato

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By

Rachel Youngblom

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Rachel Youngblom

This Dissertation has been examined and approved by the following members of the student's committee.

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Kevin Filter (Advisor)

_____

Kathy Bertsch

_____

Kristie Campana

_____

Alexandra Panahon

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By

Rachel Youngblom, Psy. D.

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Supervised By: Kevin Filter

ABSTRACT

This study examined student responses to the Minnesota Student Survey in 286 schools across the state of Minnesota. Of these schools, 143 of the schools had implemented PBIS and the other 143 schools had not. The study included elementary, middle, and high schools. The schools were coded as either small (under 150 students), medium (151-480 students), or large (over 480 students). For schools that had been trained to implement PBIS, fidelity of implementation was also considered and all schools were coded as having either high fidelity (80 or higher for SET; 70 or higher for BoQ) or low fidelity. The cohort level of each school that has implemented PBIS is also recognized. Each school that had implemented PBIS was matched with a school that had not implemented PBIS that had similar free and reduced lunch population (within 15%) and same type of school (elementary, middle or high school) and also the same size of school (small, medium, or large). Students in 5th, 8th, 9th, and 11th grades were asked to

complete the Minnesota Student Survey and responses were analyzed to compare the differences in responses across various domains: (a) School behavior: Commitment; (b) School behavior: Discipline; (c) School behavior: Bullying/harassment; (d) School behavior of others: Adult treatment of students; (e) School behavior of others: Student illegal behavior; (f) School behavior of others: bullying/harassment; (g) Risk behavior: General; (h) Risk behavior: Drugs and alcohol. Data were analyzed to determine any differences among student responding based on the PBIS schools' fidelity of implementation scores and the cohort level of the PBIS schools.

Results combined across all grade levels demonstrate that students who attended schools that have implemented PBIS with fidelity report lower grades, but that they care more about doing better in school; higher instances of being sent to the office for discipline, but lower instances of bringing a weapon to school; they report that they feel that adults at their school treat students more fairly, that adults at their school listen to the students, that teachers care about students, and that teachers at their school are more interested in them as a person when compared with students who attended schools that were not trained in PBIS. However, fewer positive PBIS-related outcomes and more negative PBIS-related outcomes were found in high schools than were found in elementary schools. Differences between PBIS cohorts and grade levels are also discussed in addition to the limitations of the current study and implications for future research.

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Chapter 1: Introduction

There is growing evidence supporting the implementation of Positive Behavioral Interventions and Supports (PBIS) and the positive impact that is has on student outcomes in K-12 schools. However, there are still many unanswered questions and gaps in the literature that address the impact that PBIS has on students' well-being, which may be assessed subjectively as a student's own thoughts, perceptions, and behaviors. This study is unique, in that it assesses student feedback to determine if, when implemented with fidelity, PBIS impacts students' perceptions of their own behavior and the behavior of others around them, compared to students who attend schools that have not implemented PBIS.

Student well-being takes into account students' overall subjective appraisal of their behaviors and emotions, and how they cope with day to day situations (Kaplan & Maehr, 1999). There are many factors that may affect student well-being such as physical health, cognitive characteristics, social interactions, and a student's psychological characteristics (Pollard & Lee, 2003). Cognitive characteristics that may impact student well-being include the student's academic ability and intellect. Psychological characteristics include the student's emotions and mental health which may be displayed through a student's behavior. Behaviors are often assessed as "significant" and "at-risk". Many behaviors that are determined to be "at-risk" are considered "red flags" to school personnel that the student behavior should be closely monitored so that they may not increase to a significant level. Social interactions that may heighten or impede well-being

include positive or negative interactions with peers and adults. PBIS has been shown to positively impact student academic achievement (Muscott, Mann, & LeBrun, 2008), expected behavior throughout the school (Bradshaw, Mitchell, & Leaf, 2010), and pro-social interactions (Vincent & Tobin, 2011); all areas that may affect a student's social and emotional well-being. Therefore, PBIS may have a positive impact specifically, on a student's own thoughts, feelings, and perceptions of their social behavior, emotional behavior, and risk behavior as a whole, inside and outside of the school.

The present study utilizes data collected from students in Minnesota to determine whether schools that implement PBIS with high fidelity (SET score of 80% or higher or BoQ score of 70% or higher) have a positive impact on students' perceptions of their own social behavior, academic behavior, and risk behavior, as well as the behavior of others. Student perceptions were measured using responses to a survey that is regularly distributed to students in Minnesota, called the Minnesota Student Survey.

Chapter 2: Literature Review

Overview of Positive Behavioral Interventions and Supports

Positive Behavioral Interventions and Supports (PBIS) is a multi-tiered preventative model of supports for student behavior within schools (often referred to as School-wide Positive Behavioral Supports; SWPBS) designed for all students. PBIS is an extension of a broader movement in the area of special education and services for adults with developmental disabilities that emerged in the 1980s under the label "Positive Behavior Support" (PBS). This movement emphasized switching the focus of behavior management away from punishing bad behavior and toward reinforcing positive behavior (Dunlop, Sailor, Horner, Sugai, 2010; Horner, Dunlop, Koegel, Carr, Sailor, Anderson et al., 1990; Sugai, Horner, Dunlap, Hieneman, Lewis, Nelson, et al., 2000). One primary feature of PBIS is the use of data to make informed decisions. This includes selecting and implementing evidence-based interventions that have been proven to be beneficial for students as well as monitoring the progress of such interventions (Sugai, 2009). Another defining feature of PBIS entails organizing systems and securing resources in order to sustain the implementation of PBIS and ensure the fidelity of the model (Sugai, 2009). These features combine to enhance not only behavioral outcomes for students but academic outcomes as well (Horner et al., 2009).

One of the guiding principles of PBIS is that all children are able to demonstrate appropriate behavior once they have been taught the behavior that is expected of them (Office of Special Education Programs Technical Assistance Center on Positive

Behavioral Interventions and Supports, 2013). Another guiding principle is that schools must intervene early and focus on prevention (Horner, Sugai, Todd, & Lewis-Palmer, 2005; Office of Special Education Programs Technical Assistance Center on Positive Behavioral Interventions and Supports, 2013). This will allow schools to remediate any problematic behaviors as soon as they occur in order to achieve the best possible outcomes for the student, academically and behaviorally, and reduce instances of disruptive behaviors school-wide.

Continuum of Supports. The PBIS framework focuses on a continuum of supports in which students may receive assistance based on the intensity of their needs (Sugai & Horner, 2006). As a three-tiered model, PBIS works on the premise that all students receive Tier 1, or primary services (Sugai & Horner, 2006). At the primary level of services, the school adopts a positive social culture by teaching students a common school-wide language that addresses behavioral expectations and are upheld consistently by all teachers and staff (Horner & Sugai, year unknown). The common language and behavioral expectations are explicitly taught to all students and are highly visible throughout all areas within the school building such as classrooms, hallways, bathrooms, playgrounds, gymnasiums, lunch rooms, and even school busses (Office of Special Education Programs Technical Assistance Center on Positive Behavioral Interventions and Supports, 2013). All students are then routinely observed and praised for demonstrating positive behavior. In addition, the school teachers and staff are trained to consistently apply reinforcement-based strategies when addressing behaviors.

The common language and expectations used throughout the school are shared with parents at home and throughout the community (Sugai & Horner, 2006). Parents are encouraged to utilize the language and expectations with their children to increase and/or maintain positive behaviors outside of school. Community members are encouraged to become involved with the school. By actively engaging local businesses, political personnel, and positive media coverage, the school can gain support to continue the efforts of the PBIS initiative (Office of Special Education Programs Technical Assistance Center on Positive Behavioral Interventions and Supports, 2013).

When implemented with fidelity, approximately 80-90% of students respond well at the primary level and need no further support (Sugai et al., 2000). This greatly reduces the amount of students who are referred for special education services and impedes new cases of problematic behavior. The 10-20% of students who do not respond and/or need more intensive support then receives the support they require with tier-two interventions.

At the secondary level, or Tier 2, of PBIS, students are supported with evidence-based interventions that are often implemented in small groups or through simple individual behavior plans. Often these are students who are at a greater risk for developing more serious behaviors than those students at the primary level (Sugai & Horner, 2006). Yet, they do not need the intense level of individualized support of the services that are implemented at the tertiary (Tier 3) level. The secondary level is aimed at reducing the school's current number of behavioral problems (Sugai et al., 2000).

When a student does not demonstrate improved behavior after receiving supports at both the primary and secondary level, they then require even more intense services at

the tertiary level. At this level, the student receives individualized and intensive behavioral interventions in addition to the support they receive at the primary and secondary level (Sugai et al., 2000; Sugai & Horner, 2006). Individualized interventions are often configured based on recommendations that are derived from a behavior support team. The behavior support team collaborates to systematically and comprehensively gather information about the student via a functional behavioral assessment. The team is often comprised of professionals and individuals such as family members, educators, and other service providers who know the student well and work together in order to promote positive changes (Sugai et al., 2000). These service providers may often originate from outside of the school, and community wraparound services are utilized to benefit the student at the highest level of intensive support (Eber, Sugai, Smith & Scott, 2002).

Fidelity of PBIS Implementation

Schools that have implemented PBIS are also assessed in order to ensure fidelity of implementation throughout their institution. This may be done through the use of multiple measures that can be separated into two different types of evaluations: internal and external (Tobin, 2012). Internal measures are used by the school staff on their own as a self-assessment in order to track their progress and fidelity throughout the school year. These measures may often be found as free resources online, often do not take long to complete, and focus on the core principles of PBIS. Such measures consist of the *Team Implementation Checklist* (TIC; Sugai, Horner, Lewis-Palmer, & Rossetto Dickey, 2011), the *Benchmarks of Advanced Tiers* (BAT; Anderson, Childs, Kincaid, Horner, George, Todd, A. et al., 2009), the *Benchmarks of Quality* (BoQ; Kincaid, Childs, & George,

2010), the *Staff Self-Assessment Survey* (SAS; Sugai, Horner, R. & Todd, 2003; also known as the *Effective Behavior Support Survey* [EBS]; Todd, Sugai & Horner, 2003), and the *Implementation Phases Inventory* (IPI; Bradshaw, Barrett & McKenna, 2008).

Internal Measures. The TIC is a practical tool for school personnel to complete monthly throughout the length of the school year during the initial implementation process in order to self-assess their fidelity of implementing of PBIS at the primary tier (Mass-Galloway, Panyan, Smith, & Wessendorf, 2008). In addition to assessing the fidelity of implementing PBIS at the primary level, the BAT allows school teams to assess the implementation of Tier 2 and Tier 3 levels of support throughout their institution and should be completed by those individuals who are involved with those levels of support (Anderson et al., 2009). The BAT also includes an action plan template that can be utilized for further improvement.

The BoQ is often used by teams within schools who are just starting their PBIS initiative. The teams may utilize the BoQ once a year in the spring and may be completed on an individual team member basis or a SW-PBIS team as a whole (PBISApps, 2013). The BoQ aims to measure Tier 1 fidelity of implementation and may be used as a guide to determine what has been effective and to identify strengths and weaknesses throughout the primary level of support (Kincaid, et al., 2010). The data that is compiled is summarized by the coach and distributed to the team members in order to be used as constructive feedback and used for action planning. The BoQ is one of two measures of fidelity that were utilized in the present study.

The SAS (or EBS; Sugai, et al., 2003; Todd, et al., 2003) is completed by all personnel in a school either twice a year, once in the beginning of the school year and once at the end of the school year; or once a year – only in the spring. It is also used for action planning to determine areas of improvement for the following school year, decision making, assessing change over the course of the school year, and also staff awareness of trends

The IPI is used by PBIS school coaches or team leaders throughout the first year of implementation to assess the degree of fidelity. It need only be filled out twice a year, once in the fall and once in the spring and is designed to take less than 5 minutes to complete when a coach knows the school well (Bradshaw, Barrett, & McKenna, 2008). The data can be used to track the school's progress from fall to spring. The individual scores of each item can also be used to assess strengths and weaknesses of the school. Additionally, the assessment of strengths and weaknesses may then be used for action planning in addition to monitoring the progress of the school's PBIS initiative.

External Measures. External measures are used to assess a school's fidelity of implementation and are often used as research and summative tools to compare outcome measures. They often consist of direct observations, interviews, and reviews of permanent as well as archival products (Tobin, 2012). By virtue of the fact that they are completed by people other than the personnel in the school they are generally considered to be a less biased and more valid measure of implementation than internal measures. Such measures consist of the *Individual Student System Evaluation Tool* (ISSET; Anderson, et al., 2011), the *Monitoring Advanced Tier Tool* (MATT; Horner, Sampson,

Anderson, Todd & Eliason, 2013), the *Walkthrough* (White, Sandomierski, George, Childs, & Iovannone, 2011) and the *School-wide Evaluation Tool* (SET; Sugai, Lewis-Palmer, Todd & Horner, 2001).

The ISSET tool is predominately a research tool utilized by outside evaluators to assess the Tier 2 and Tier 3 levels of support within a PBIS school (Anderson, et al., 2011). The evaluator records next to each item if the information required has been obtained through an interview or through the review of permanent product. The evaluator then summarizes the information and presents the data to the PBIS school team in order to assess strengths and weaknesses in addition to aid the team in action planning.

The MATT is a tool that may be utilized by PBIS team members in order to track their Tier 2 and Tier 3 support levels throughout the school year. Traditionally completed 3-4 times a year, this tool is completed by the team coach as well as its members at a regularly schedule team meeting (PBISApps, 2013). As the team completes the MATT measure, the coach is actively engaged, asking follow-up questions from their guide in order to better assist the team in making their scoring decisions. Once all members have completed the measure, the scores are summarized in each area to track progress throughout the school year. These scores are also used to assess strengths and weaknesses and to aid in action planning.

The *Walkthrough* is a quick primary level implementation assessment that can be accomplished by a school's PBIS coach, peer PBIS coaches, the PBIS team, district coordinators and also trainers and state evaluators (Peshak George, 2012). The *Walkthrough* consists of independent observations by various individuals that focus on

the visibility of the school's behavioral expectations and rules throughout the school (e.g. hallways, office, playground, lunchroom, classrooms). The *Walkthrough* provides quick feedback to the school team and allows them to improve their PBIS initiative if results demonstrate that implementation is lacking.

The SET is one of the most popular tools currently used among schools and was created specifically to measure the primary level of prevention within a PBIS school. A PBIS school is typically evaluated with the SET before they attend training on PBIS; after they have rolled out a PBIS implementation plan; and also annually in the spring of every school year. Data is gathered through a series of observations throughout the school, as well as interviews with students, teacher, staff, and administration and examining permanent products such as handbooks, instructional materials, lesson plans, and other materials. When schools are evaluated with the SET a score of 80% or higher is indicative of a school that has implemented PBIS with high fidelity. Schools that achieve a high level of fidelity have shown to have positive impacts on student academic performance (Muscott, Mann, & LeBrun, 2008; Simonsen, Eber, Black, Sugai, Lewandowski, Sims & Myers, 2012). The SET is used as one of two measures of fidelity in the present study.

Evidence Supporting the Effects of PBIS on Student Behavior

Implementation of PBIS has proven to be effective with students who demonstrate dangerous and aggressive behaviors. Without support, these behaviors may hinder student learning or isolate them from their peers due to their serious nature. PBIS has also been shown to be beneficial by supporting students that display challenging

behaviors related to autism, developmental disabilities, emotional and behavioral disorders and also students that have not received any diagnostic classification. Successful implementation of PBIS has also been shown to improve the perceived safety of a school setting.

As of January 2014, PBIS has been successfully implemented (80% fidelity or higher) and empirically validated in 18, 277 schools (Office of Special Education Programs Technical Assistance Center on Positive Behavioral Interventions and Supports, 2013) across the United States as well as other countries such as Australia, Norway, and Canada (McIntosh, & Bennett, 2011; Mooney, Dobia, Barker, et al., 2008; Sorlie & Ogden, 2007). The successful implementation of PBIS within these institutions has aided the progress of many schools as a whole, and individual students alike. Some of the benefits from implementing PBIS are the increase of positive student behavior and the decrease of problematic behavior.

In 2002, the state of New Hampshire implemented PBIS in 28 different schools. Within 6 years, all of the schools together decreased their office discipline referrals (ODR) by 28% and decreased school suspensions by 31% (Muscott, et al., 2008). Further analysis of the data indicates that the majority of the decreases in behavior occurred in the middle schools and high schools.

A large study was completed in 2012 that sampled 428 schools that had implemented PBIS in Illinois. Results showed that across time most schools demonstrated improved student social outcomes (Simonsen, et al., 2012). As of 2008, Iowa had 103 schools that had implemented PBIS. Research completed by Mass-

Galloway and colleagues (2008) reported results of decreased office discipline referrals, along with an increase in instructional time, and an increase in administrative time that had otherwise been occupied with students displaying disruptive behaviors.

A longitudinal study completed with 37 schools in Maryland indicated that after a span of 5 years, the same schools that implemented PBIS with fidelity experienced reductions in the number of ODRs as well as student suspensions (Bradshaw, Mitchell, Leaf, 2010). Overall student suspensions decreased by approximately 1.5%; the number of major ODRs per 100 students per day decreased from approximately .21 to .16; the percentage of students with a major ODR decreased from 18.8% to 18.1%; and the number of major and minor events per student decreased from .65 instances to .61.

In 2009, a large randomized, wait-list controlled study completed by Horner and colleagues (2009) reported the effectiveness of PBIS implemented in elementary schools across Hawaii and Illinois. The schools in the study were comprised of a treatment group (N = 30; 15 from Hawaii and 15 from Illinois) and a control group (N = 30). These schools received regular training from state personnel over the course of a 3-year period. Results showed that the continued support was related to the increased perception of school safety and a decrease in overall levels of ODRs.

Additional research has shown that the implementation of PBIS in elementary schools and high schools decreased exclusion of individuals, who were of minority ethnicities and students with disabilities, from their peers (Vincent & Tobin, 2011). Elementary students showed decrease in exclusion in the classrooms setting. Results in

high school settings showed a decrease in exclusion of students in non-classroom settings (e.g. hallways, lunchrooms).

PBIS has also proven to be effective in less traditional schools such as alternative settings designed for students with disabilities who display intense emotional and behavioral difficulties. Results demonstrated a dramatic decrease in serious incidents of student behavior (Simonsen, et al., 2010). An additional positive result was the increase in the percentage of students with zero incidents of physical aggression for the school year and a decrease in the use of physical restraints by school staff.

Evidence Supporting the Effects of PBIS on Student Academic Performance

The benefits of PBIS have been documented to go beyond increasing positive behavior and decreasing problematic behavior. Many schools are finding that academic achievement is improving as well. Results from research conducted by Muscott and colleagues (2008) demonstrated that 16 of the 22 schools that implemented PBIS with high fidelity (SET score of 80% or higher) in the study reported an increase in the percentage of students who displayed average or above mathematical abilities. In the same study, 9 of the 22 schools also increased the percentage of students who displayed average or above average reading/language scores. The study completed by Horner and colleagues (2009) which reported the effectiveness of SWPBS implemented in schools with high fidelity, as shown by SET data, across Hawaii and Illinois, also reported that continued support from state personnel was related to the increased number of third grade students who either met or exceeded the state reading assessment standards.

The study completed in Illinois by Simonsen and colleagues (2012) showed that across time, most schools maintained or increased overall student academic performance, and specifically increased student performance in math skills. Further, the increase in math skills positively correlated with the fidelity of implementation of PBIS throughout specific schools as measure by their SET scores.

Additional research conducted by Lassen, Steele, and Sailor (2006) investigated the outcomes of implementing PBIS in an urban middle school over the course of 3 years. Fidelity of implementation was measured with the SET tool in addition to ODRs, suspensions, and standardized test scores. Although fidelity of implementation measured with the SET tool was at 69.64% by year 3, this was a dramatic increase from baseline which was 24.97%. The average number of suspension decreased from .32 per student to .20 per student and an increase in math standardized test scores proved to be significant.

Effects of PBIS on School Staff

The effects of PBIS have also been validated beyond just the students and the classroom. Studies have demonstrated the positive effects of PBIS on organizational health, teacher self-efficacy, and level of teacher burnout. In one study, schools volunteered to implement PBIS in order to research the impact that the prevention model would have, not only with their students, but with their staff as well (Bradshaw, Koth, Bevans, Ialongo, & Leaf, 2008). Results showed that implementing PBIS with fidelity increased school organizational health which is comprised of: “resource influence, staff affiliation, academic emphasis, collegial leadership, and institutional integrity” (Bradshaw et al., 2008, pg. 463).

Research completed by Ross and colleagues (2012) aimed to assess teacher well-being throughout schools that have implemented PBIS and those schools that have not. After surveying 184 teachers across 40 different schools, results demonstrated that PBIS has a significant impact on educators. Teachers who were working within schools that had implemented PBIS reported lower levels of burnout and higher levels of self-efficacy. Further research completed by Mass-Galloway and colleagues (2008) reported an increase in administrator time devoted to activities other than managing the consequences for students displaying disruptive behaviors.

Effects and Potential Effects of PBIS Outside of the School Environment

The positive effects of PBIS on students and staff throughout schools are evident. However, little is known about the effects that PBIS may also have outside of the school. With the emphasis of family-school collaboration and community involvement with wrap-around support services, PBIS has the potential to make significant impacts on student behavior outside of school - within the home and throughout the community. The preventative framework has the potential to deter problematic behavior from a developmental approach when including the school, family, and community as stakeholders in a student's life. When a student is exposed to PBIS early in their academic career, there is a greater opportunity to instill positive behaviors, thoughts, and feelings that can transfer over into other areas of their life when all stakeholders are involved. As the student progresses academically in a school with a PBIS framework, those positive expectations are continuously taught and reiterated.

Although a majority of family-school collaboration occurs when a student is in need of intensive wrap-around tier-three services, proactive family involvement at the universal tier-one level has shown to increase the positive effects that PBIS has on the student even when they are not in school. In a study completed by Beckner (2007), 4 sets of parents of preschool-aged students were trained to use specific behavioral PBIS strategies that were currently being utilized in their child's school. Post-training observations in the home indicated that parents continued to use the behavioral-based parenting strategies. Results showed that the amount of reprimands that the parents used within the home decreased and the amount of precorrections increased. In-home observations reported a slight positive change in three of the students' social skills and a great improvement in one of the student's social skills. All four of the students demonstrated fewer problem behaviors in the home.

Recent research by Klein, Cornell and Konold (2012) has indicated that a positive school climate may also be a protective factor for many students and may be inversely related to substance abuse and aggression. In this study, a survey was administered to 4,265 high school-aged students which inquired of their aggressive attitudes, prevalence of bullying and teasing in their school, their willingness to seek help if they or someone else has been bullied, and also their alcohol and drug consumption and mental health. Results concluded that students who felt comfortable talking to teachers when faced with problems, due to a supportive and positive school climate, were less likely to partake in risk behaviors (partake in alcohol and drugs, carry weapons, or report depressive symptoms/internalizing behaviors). The authors acknowledge that their findings align

with the philosophy of PBIS as a school-wide intervention that fosters positive relationships between teachers and students.

Research has also shown that a positive school climate may have a moderating effect when students are faced with adversity and violence in their communities (O'Donnell, Roberts, & Schwab-Stone, 2011). This study gathered information via survey format from 653 youth (51.2% were male, 48.7% were female) in the 10th and 11th grades. All answers were given on a scale of 1 (never), 2 (somewhat), and 3 (mostly). The survey addressed questions related to: exposure to violence, victimization by violence, school climate, and parental warmth. The school climate domain included 7 items: (1) students spend a lot of class time just talking to each other; (2) teachers often shout at students; (3) teachers spend a lot of time in class trying to get students to behave; (4) there is a lot of fighting between students in or around the school; (5) students don't do what the teacher has told them to do; (6) students are often late for class; and (7) students criticize or joke about the teachers a lot. Results reported that students who went to a school with a positive climate demonstrate lover levels of post-traumatic stress when faced with community violence. A positive school climate helps youth who have witnessed violence and also those students who have be victimized by violence.

Summary and Hypotheses

Although the research in these areas is sparse, there is potential that PBIS, when implemented with high fidelity, may result in positive effects on student perceptions, feelings, and behaviors across school and community settings. With that in mind, the aim of the current study was to address these factors by surveying students in 5th, 8th, 9th and

11th grades regarding their perceptions, feelings and behaviors within the school and community contexts using the Minnesota Student Survey (MSS) (Minnesota Department of Education, Minnesota Department of Health, Minnesota Department of Human Services, & Minnesota Department of Public Safety, 2013). The students who were surveyed came from schools that were trained to implement PBIS and those that were not trained to implement PBIS. The hypotheses were as follows:

1. When all grade levels were combined, students who were enrolled in schools that implemented PBIS with high fidelity would report lower instances of problematic behavior within school and throughout the community in addition to more positive feelings and perceptions of the students' school and community on the MSS compared to students in schools that were not trained to implement PBIS.
2. When broken down by grade levels, students from schools that have implemented PBIS with high fidelity would report lower instances of problematic behavior within school and throughout the community in addition to more positive feelings and perceptions of the students' school and community on the MSS when compared with their same grade-level peers who attended schools that were not trained to implement PBIS.

In addition to these hypotheses, further analyses were completed to answer the following exploratory research questions:

1. Is there a factor structure to the MSS that could simplify interpretations of effects for the present study?

2. Since PBIS schools in Minnesota have been trained in annual cohorts for several years, the following question was addressed: Are student responses to items in the MSS regarding perceptions, feelings, and behaviors affected by the cohort in which their school was trained to implement PBIS? Stated more directly, does the number of years that a school has been implementing PBIS affect student responses on the MSS?

Chapter 3: Methods

Participating Schools and PBIS Training Status

The state of Minnesota began the PBIS initiative in 2005 when they accepted their first cohort of nine schools from three independent school districts and began the training process (Minnesota PBIS, 2013). Since then, there have been nine additional cohorts. The number of schools has grown to currently include 478 schools state-wide which makes up approximately 24% of schools throughout the state of Minnesota; affecting over 199,000 students. These schools are comprised of charter schools, childhood programs, elementary schools, middle schools, and high schools (including alternative learning centers) (Minnesota Department of Education (MDE) School-wide Positive Behavioral Interventions and Supports (SW-PBIS) Management Team, August, 2014)).

The present study included schools from cohorts 1 through 8 in the Minnesota PBIS initiative. Cohort 1 schools began their two-year training sequence in 2005. A new cohort was added each year thereafter, with each cohort assigned the next highest number. Cohort 8 schools began their training sequence in 2012 and were in their second year of PBIS training when data from the Minnesota Student Survey were collected.

Prior to beginning the two-year training cycle, the schools accepted into the initiative prepare for SWPBIS implementation through a variety of tasks. They must first develop a basic understanding of PBIS by reviewing valid and accurate information and by contacting a state PBIS representative (Minnesota PBIS, 2011). The schools must also decide on a useful data-collection system and have the system in place by the time that

they start their training. The data collection system is considered “useful” when it is able to address specific factors that will aid in making data-based decisions. The system must be able to report referrals per day per month, referrals by problem behavior, referrals by location, referrals by time, and referrals by student (Minnesota PBIS, 2011).

A designated school PBIS Team and Coach must then raise awareness of PBIS in their school building and throughout the community. This is done by speaking with administrators regarding the impact that PBIS will have on the school and receive a two-year commitment from the building principal and superintendent. Additionally the PBIS team must receive support from 80% of the school staff and coordinate activities throughout the community to gain support from school personnel and families (Minnesota PBIS, 2011). This also includes discussing discipline goals and the positive affect that PBIS has on academic achievement with building and district stakeholders (Minnesota PBIS).

Once all of these activities have been successfully executed, the team may move forward with the MN PBIS Application and submission to the Minnesota Department of Education (Minnesota Department of Education, 2013). Minnesota Department of Education accepts schools based on the thoroughness of the preparation activities completed by the school prior to the submission of the application. PBIS teams of four to eight people from each school are required to attend all trainings throughout the next two years; six days the first year and three days the second year (Minnesota Department of Education). In addition, schools are required to participate in the School-Wide Evaluation Tool (SET), complete all PBIS assessments tools (e.g. BoQ, TIC, SAS), and report all

data to Minnesota SWPBIS evaluators. The Minnesota Department of Education supports the schools by providing sufficient training and access to a data collection system if needed.

Measures

Minnesota Student Survey. The outcome data for this study came from the *Minnesota Student Survey* results gathered by the Minnesota Department of Health (MDH), the Minnesota Department of Education (MDE), the Minnesota Department of Human Services (MDHS) and the Minnesota Department of Public Safety (MDPS). The survey is conducted every three years and all public schools in the state of Minnesota are invited to participate. In 2013, 84% of the schools (280 of 334) agreed to participate in the survey (Minnesota Department of Education, Minnesota Department of Health, Minnesota Department of Human Services & Minnesota Department of Public Safety 2013). The survey is administered to all 5^{th}, 8^{th}, 9^{th} and 11^{th} graders throughout the schools either by paper or by web. All answers to questions are voluntary and anonymous. Response rates by grades were as follows: 66% of 5^{th} graders, 71% of 8^{th} graders, 69% of 9^{th} graders, and 62% of 11^{th} graders. Approximately 2% of completed surveys were eliminated by the state due to inconsistent responding (i.e. the gender was missing). Surveys were also eliminated that appeared to have exaggerated responses, such as responses that were consistently low (i.e. all answers were marked as a "1") or answers that were consistently high (i.e. all answers were marked as a "5"). These surveys were eliminated due to significantly skewed results when they were taken into consideration.

The aim of the *Minnesota Student Survey* is to gather data from students for a variety of purposes. From this data, the state is able to target relevant student issues, student needs, areas for improvement, and program planning; track state progress once initiatives and programs are put into place and ultimately analyze trends and outcomes every three years (Minnesota Department of Health, 2010; 2013). Data collected from the *Minnesota Student Survey* also allows the state to examine associations with risk and protective factors across and among different demographic aspects (e.g. geographic location, age, grade, ethnicity). Often particular behaviors, thoughts, feelings, and perceptions may be grouped together. By becoming aware of these trends prevention efforts can be put into place to support the students with particular needs.

The *Minnesota Student Survey* has three different forms; one for 5th grade; one form for 8th grade; and a third form for the 9th and 11th grades. The form given to the 5th graders contains 149 questions pertaining to behaviors related to: (a) School, (b) Activities, (c) Family and Relationships, (d) Risk Factors, (e) Health and Safety, (f) Mental Health, and (g) Substance Use. The form given to the 8th graders has all areas listed in the 5th grade survey and an additional area that assesses Mental Health in more depth, and Protective Factors that make up 221 questions total. The form given to the 9th and 11th graders has all items given to the 5th and 8th graders, as well as additional questions regarding Sexual Health that make up 242 questions total.

Items target not only specific behaviors of students but also perceptions and feelings about one's school, family, and community. Some examples of these questions are as follows: *School* (During the last 30 days, how often have you: Had in-school

suspension? Had out-of-school suspension?); *Activities* (In general, during the last 12 months, how often have you participated in the following activities? Fine arts activities? Private lessons? Club or community sports teams? Hobby and academic clubs?); *Family and Relationships* (How many of your teachers are interested in you as a person? How much do you feel friends care about you?); *Risk Factors* (Do you currently get free or reduced-price lunch at school? Since the beginning of this school year, how many times have you changed schools?); *Health and Safety* (How often do you wear a seat belt when you ride in a car? On how many of the last 7 days were you physically active for a combined total of at least 30 minutes?) *Mental Health* (During the last 30 days, have you felt nervous, worried, or upset? Have you ever hurt yourself on purpose?) *Substance Use* (During the last 30 days, on how many days did you smoke a cigarette? During the last 12 months have you had any alcoholic beverages?); and *Sexual Health and Protective Factors* (Have you ever had sexual intercourse ["had sex"]? If you have sexual intercourse, how often is a condom used?). The processes of selecting particular items for analysis in the present study are detailed in the Procedures section.

Schoolwide Evaluation Tool. The SET is currently one of the most frequently used tools in use among schools implementing PBIS and is one of the tools used by the Minnesota PBIS initiative. The SET was created specifically to measure the primary level of prevention within a PBIS school which includes the most critical characteristics of a school that has successfully implemented PBIS.

The SET evaluates several features of PBIS, including 3-5 positively stated and agreed upon school-wide rules (i.e. expectations), a documented system for teaching the

expectations to students, a documented system for rewarding behavior is in place, a system for responding to behavioral violations is in place, and the school is systematically monitoring student behavior and making decisions based off of data (Sugai, et al., 2001). In addition to evaluating the school on how they manage student behavior, the school is also evaluated on specific factors of administrative management. The SET aims to evaluate whether the school maintains the implementation of PBIS as one of their top goals and whether a variety of staff members are engaged with the school-wide behavior support team. The SET also aims to inform the school of any revisions that need to be made in order to enhance implementation and may be used as a progress monitoring tool to gauge level of implementation from year to year.

Through the Minnesota PBIS initiative, data is gathered twice a year via a series of observations throughout the school, as well as interviews with students, teacher, staff, and administration and examining permanent products such as handbooks, instructional materials, lesson plans, and other materials (MN PBIS, 2013). Trained observers visit the schools once in fall and once in the spring the first year of training and once in the spring during the second year PBIS implementation training. When schools are evaluated with the SET a score of 80% or higher is indicative of a school that has implemented PBIS with high fidelity. After the first two years of initial PBIS implementation training, schools are required to be assessed with the SET annually until a score of 80% is established. Once a score of 80% or above is established, an external SET evaluation may be completed every 3rd year thereafter to establish an objective measure of fidelity of implementation (MN PBIS).

In Minnesota, all SET evaluators complete a three-hour training on the SET. The trained evaluators then complete an evaluation in a school concurrent with an established SET evaluator. Evaluators are eligible to serve as official evaluators after they meet the 80% inter-rater reliability criterion with the established observer. Finally, all SET evaluators in Minnesota are required to complete an on-line refresher training every two years in order to maintain eligibility as an evaluator.

The SET has proven to be both a reliable and valid indicator of PBIS implementation (Horner, et al., 2004; Vincent, et al., 2010). In the initial study completed by Horner and colleagues, SET data was gathered from 45 schools (elementary and middle). Internal consistency of items was found to be high with an average of $r = .96$ across all subscales. Eight elementary schools volunteered to participate for test-retest reliability purposes. The test-retest reliability of the SET total score averaged 97.3%. Interobserver agreement was calculated through the use of item-by-item comparisons and was also found to be high at 99%.

Construct validity was assessed by correlating scores received by schools on the SET with scores received by the same school on another measure, the SAS, that assesses implementation of specific factors found in schools that have implemented PBIS (Horner, Todd, Lewis-Palmer, Irvin, Sugai, & Boland, 2004; Vincent, Spaulding, & Tobin, 2010). Intercorrelations were found to be moderate to moderately high ($r = .44$ to .81). The sensitivity of the SET was also assessed as pre-implementation and post-implementation scores were recorded in 13 of the schools. Twelve of the thirteen schools demonstrated an

increasing trend and a paired *t*-test verified that the SET is sensitive to change over time [t (12) = 7.63, p<.001].

The follow up study completed by Vincent and colleagues confirmed the solid psychometrics of the SET. In this study, data from 1,352 (833 elementary, 264 middle, and 93 high) schools were compiled and analyzed. Internal consistency remained high with an average of r = .85 across all subscales for elementary schools; r = .85 for middle schools; and r = .90 for high schools. Concurrent validity was measured by correlating scores that a school received on the SET with scores obtained by the same school on the TIC. Overall scores ranged from r = .11 to .53 for elementary schools; r = .08 to .57 for middle schools; and r = .32 to .57 for high schools. Overall, the moderate to high correlations between the two measures were found to give the SET adequate validity when measuring specific components of PBIS implementation.

Benchmarks of Quality. The BoQ is utilized by the Minnesota PBIS initiative when a school has finished their initial 2 year PBIS implementation training and has consistently maintained an 80% on their SET (MN PBIS, 2013). The school teams utilize the BoQ once a year in the spring and may be completed on an individual team member basis or a SW-PBIS team as a whole (PBISApps, 2013). The BoQ is completed each year after the completion of training but schools are provided information about how to arrange a SET evaluation instead of a BoQ if that is their preference.

The BoQ is comprised of 53 items that address the specific components to the primary level of PBIS implementation (e.g. school-based team, administrative support, discipline process intact, data system in place, positive expectations, reward system,

faculty and staff are knowledgeable, a system for teaching expectations is in place; Kincaid, et al., 2010). All items are rated as in place, needs improvement, or not in place. The team coach will score all items to the best knowledge as well as collect all of the team member ratings as well. If there are any discrepancies between the coach's ratings and any team member ratings, a discussion is held to examine the difference of ratings.

The BoQ has proven to be both a reliable and valid indicator of PBIS implementation as demonstrated by a study completed by Cohen and colleagues (2007). The study gathered BoQ data from 105 schools (44 elementary; 35 middle; 10 high schools and 16 center schools). Internal consistency was calculated for all BoQ subscales and found to be within the range of α = .40 to .70 indicating moderate correlation, with an overall alpha of the BoQ at 0.96. The test-retest reliability for the overall BoQ score was found to be high with an agreement at 97% from Time 1 to Time 2 with a high correlation of 0.94 (p<.01). Interrater reliability was demonstrated by high correlations between raters (r = .87, p<.01) and a high average agreement between raters (89%). In order to assess concurrent validity, 47 of the schools that used the BoQ were also scored with the SET. The BoQ scores were then correlated with the SET scores which resulted in a moderate correlation of 0.51 (p<.05).

Procedure

A list of all schools in the state that had been trained in PBIS through spring 2013 were gathered and coded to include their cohort number and SET score, as well as the grade level of the school (elementary school, middle school, or high school), its school population, and percentage of students who receive free and reduced-lunch. All schools

were then matched with a school in the state that had not implemented PBIS based on grade level served, enrollment, and SES level (i.e. percentage of students that received free and reduced lunch). A list of all schools and their enrollment population were gathered from the Minnesota State Department of Education website and ranked in order from highest enrollment to lowest enrollment. The schools were then divided into thirds to produce high, medium and low levels of enrollment. This distribution was adopted due to equal proportions of schools for each level (high, medium, and low). Schools that had low enrollment had anywhere from 0-151 students; schools that had medium enrollment had 151-480 students; and schools that had high enrollment had a population over 480 students. If the schools had been chosen based on a statistical distribution, there would not have been adequate schools to choose from in order to make matches. In order to capture an approximation of socioeconomic status throughout the school, both schools (PBIS and non-PBIS) were matched so that the percentage of students receiving free and reduced lunches had to be within 15%. After the matching had been completed, data from 286 schools (143 PBIS and 143 Non-PBIS) were able to be utilized for the study.

Particular questions that were of interest from the *Minnesota Student Survey* were pulled for further analysis and a new categorization scheme was developed. The items from the MSS were originally assigned to the categories of (a) background, (b) school, (c) out of school activities, (d) health, and (e) behavior. However, not all of the items in these scales were relevant to the present study (e.g., diet, medical conditions) and each existing category included many different types of items (e.g., ordinal with four response options, ordinal with seven response options, dichotomous response options). The items

selected for inclusion in the present study were assigned to the following newly-generated categories: (a) School behavior: Commitment; (b) School behavior: Discipline; (c) School behavior: Bullying/harassment; (d) School behavior of others: Adult treatment of students; (e) School behavior of others: Student illegal behavior; (f) School behavior of others: bullying/harassment; (g) Risk behavior: General; and (h) Risk behavior: Drugs and alcohol. These categories were created in such a way as to be not only logically consistent but also to ensure that items within a category contained the same number of response options (e.g., all items in "School behavior: Discipline" are scored on five-point scale; all items in "School behavior of others: Adult treatment of students" are scored on a four-point scale). Each category had at least three items and no more than 12 items. Most items were the same across grades in each category but there were more questions in the upper grades for a few categories (see Table 1). In total, 46 consistent items were selected from the elementary school, middle school, and high school questionnaires. Some questions were reverse scored so that all answers were on a consistent scale. Therefore, a low score is indicative of a less severe behavior and more positive perceptions and feelings. A higher score is indicative of more severe behavior and more negative perceptions and feelings.

Table 1

Minnesota Student Survey Questions analyzed in the Present Study by Category and Grade

Study Code*	Text of Question**	Item # 5th	8th	9th/ 11th	Item Type***
D	Are you male or female?	1	1	1	Nominal/ Dichotomous
	What is your grade right now?	2	2	2	Nominal 7
	How old are you?	3	3	3	Ratio
	Are you a member of any of the following ethnic groups?	4	4	4	Nominal 3
	In addition, what is your race (mark all that apply)	5	5	5	Nominal 5
	Do you have an IEP or get special education services?	9	10	11	Nominal/ Dichotomous
	Do you currently get free or reduced-price lunch at school?	10	11	12	Nominal/ Dichotomous
	TOTAL ITEMS	**7**	**7**	**7**	
SBc	How would you describe your grades this school year?	12	13	14	Ordinal 7(5)
	How often do you care about doing well in school?	14	17	18	Ordinal 4
	How often do you pay attention in class?	15	18	19	Ordinal 4
	How often do you go to class unprepared?	16	19	20	Ordinal 4
	TOTAL ITEMS	**4**	**4**	**4**	
SBd	*During the last 30 days, have you…*				
	been sent to the office for discipline?	13c	16c	17c	Dichotomous
	had in-school suspension (ISS)?	13d	16d	17d	Dichotomous
	been suspended from school (out-of-school suspension/OSS)?	13e	16e	17e	Dichotomous
	During the last 30 days, on how many days did you carry a weapon such as a gun, knife, or club ON SCHOOL PROPERTY?	20	23	24	Dichotomous
	TOTAL ITEMS	**4**	**4**	**4**	
SBb	*During the last 30 days, have YOU…*				
	pushed, shoved, slapped, hit, or kicked someone when they weren't kidding around?	24a	27a	28a	Dichotomous
	threatened to beat someone up?	24b	27b	28b	Dichotomous
	spread mean rumors or lies about someone else?	24c	27c	28c	Dichotomous
	excluded someone from friends, other students, or activities?	24d	27e	28e	Dichotomous
	TOTAL ITEMS	**4**	**4**	**4**	
SBOa	Overall, adults at my school treat students fairly	17d	20d	21d	Ordinal 4
	Adults at my school listen to the students	17e	20e	21e	Ordinal 4
	The school rules are fair	17f	20f	21f	Ordinal 4
	At my school, teachers care about students	17g	20g	21g	Ordinal 4
	Most teachers at my school are interested in me as a person	17h	20h	21h	Ordinal 4

	TOTAL ITEMS	**5**	**5**	**5**	
SBOi	*During the last 30 days, other students at school…*				
	stolen or deliberately damaged your property such as clothing, books, or car?	19a	22a	23a	Dichotomous
	offered, sold, or given you an illegal drug?	19b	22b	23b	Dichotomous
	Threatened or injured you with a weapon (gun, knife, club, etc.)?	19c	22c	23c	Dichotomous
	TOTAL ITEMS	**3**	**3**	**3**	
SBOb	*During the last 30 days, have other students harassed or bullied you for any of the following reasons?*				
	Your race, ethnicity, or national origin	21a	24a	25a	Dichotomous
	Your religion	21b	24b	25b	Dichotomous
	Your gender (being male or female)	21c	24c	25c	Dichotomous
	A physical or mental disability	21d	24e	25e	Dichotomous
	Your weight or physical appearance	21e	24f	25f	Dichotomous
	Have you been bullied through e-mail, chat rooms, instant messaging, websites, or texting?	22	25	26	Dichotomous
	During the last 30 days, have other students at school…				
	pushed, shoved, slapped, hit, or kicked you when they weren't kidding around?	23a	26a	27a	Dichotomous
	threatened to beat you up?	23b	26b	27b	Dichotomous
	spread mean rumors or lies about you?	23c	26c	27c	Dichotomous
	excluded you from friends, other students, or activities?	23d	26e	27e	Dichotomous
	TOTAL ITEMS	**10**	**10**	**10**	
Rg	*During the last 12 months, have you…*				
	run away from home?	58a	76a	77a	Dichotomous
	damaged or destroyed property?	58b	76b	77b	Dichotomous
	hit or beat up another person?	58c	76c	77c	Dichotomous
	taken something from a store without paying for it?	58d	76d	77d	Dichotomous
	TOTAL ITEMS	**4**	**4**	**4**	
Rd	During the last 30 days, have you smoked any cigarettes?	59	77	78	Dichotomous
	During the last 12 months, have you…				
	had alcoholic beverages to drink such as beer, wine, wine coolers, and liquor?	62a	83	85	Dichotomous
	used marijuana (pot, weed) or hashish (hash, oil)?	62b	88	91	Dichotomous
	sniffed glue or huffed or inhaled the contents of aerosol spray cans or other gases to get high?	62c	90	93	Dichotomous
	used prescription drugs that were not prescribed for you by a doctor or that you took to get high?	62d	89	92	Dichotomous
	TOTAL ITEMS	**5**	**5**	**5**	
	TOTAL CUMULATIVE ITEMS	***46***	***46***	***46***	

*D = Demographics; SBc = School behavior: Commitment; SBd = School behavior: Discipline; SBb = School behavior: Bullying/harassment; SBOa = School behavior of others: Adult treatment of students; SBOi = School behavior of others: Student illegal behavior; SBOb = School behavior of others: bullying/harassment; Rg = Risk behavior: General; Rd = Risk behavior: Drugs and alcohol.

**Text wording reflects language from the Level III form for grades 9 and 11

***Number refers to number of response options

Analyses

Analyses were completed using the *Statistical Package for the Social Sciences* (SPSS). Factor analyses are often used in social sciences to measure concepts that otherwise cannot be measured directly (Field, 2009). Therefore, an exploratory factor analysis was also used to determine the validity of the categories of behavior that were proposed for this study. An orthogonal rotation was chosen when executing the exploratory factor analysis due the uncertainty that any of the factors would be related. When deciding how many factors to consider, eigenvalues were kept to 1, per Kaiser's criterion (Field, 2009). A scree plot was also selected in order to verify the number of relevant factors.

MANOVAs were utilized to analyze the multiple differences between students who were attending schools that have been trained to implement PBIS and students who were attending schools that have not been trained to implement PBIS. The large amount of dependent variables that were assessed all at once prompted the use of MANOVAs instead of multiple ANOVAs. MANOVAs were utilized due to their built in ability to take into account inflated Type I error rates as they analyze multiple conditions (Field, 2009). Bonferroni post-hoc tests were also completed in order account for inflated Type I error. It was chosen due to its conservative nature when controlling for familywise error rate.

In addition to MANOVA output, descriptive statistics were viewed in order to make accurate predictions regarding the significance of the independent variables. Frequency output was also viewed in order to determine quantity of missing data when reporting results. In total, there were 49,319 students that were included in the study. However, many of the respondents did not answer all of the items, therefore all available items were included as pairwise comparisons in order to include as much of the data as possible. Depending on the analysis, *N* varied. As reported in the Results section, one of the categories derived by the researchers could not be utilized for the 8^{th}, 9^{th}, and 11^{th} grades due to low responding to items.

The relationship between PBIS implementation and responses to items on the MSS were analyzed separately for each of the four grade levels in the study. Items pertaining to the individual grade levels were selected from the entire data set in order to run appropriate analysis. The researchers also assessed whether there were any significant differences in responding between students who attended schools that have been trained to implement PBIS depending on the cohort level of the PBIS schools and schools that have not been trained to implement PBIS,

Additionally, the researchers analyzed whether there were any differences among student responding when the fidelity of PBIS implementation was taken into consideration based on the school's SET or BoQ score. Current research has supported the notion that the level of fidelity when PBIS is implemented can have significant effects on students, meaning that the greater the level of fidelity the greater the positive effects.

Chapter 4: Results

The researchers began the study by first addressing their exploratory research questions. An exploratory factor analysis was first analyzed to determine if the items chosen from the MSS related to one another in the new categories that the researchers created. The researchers then explored whether or not there were any significant differences between the responses of students in each individual PBIS cohort when compared with students who attended schools not trained to implement PBIS. The results from the formal research hypotheses follow the exploratory results.

Factor Structure of the MSS

A principal component analysis (PCA) was conducted on the 39 relevant items with orthogonal rotation (varimax). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO = .87. However, KMO values for individual items varied from .20 - .79. Bartlett's test of sphericity χ^2 (741) = 66657.89, $p < .001$, indicated that correlations between items were sufficiently large for PCA. An initial analysis was run to obtain eigenvalues for each component in the data. Nine components had eigenvalues over Kaiser's criterion of 1 and in combination explained 47.51% of the variance. Table 2 shows the factor loadings after rotation. However, due to the lack of consistency between the factor loadings and the researcher's original theory of categories based on the items, the factor analysis was not utilized to further analyze the data. Therefore each item was analyzed separately in the following analyses (i.e., no scale

scores were reported or analyzed) but results were summarized using the theoretical categories for simplicity in interpretation.

Table 2

Summary of exploratory factor analysis results (N = 49,319)

	Component								
	1	2	3	4	5	6	7	8	9
During the last 30 days, have other students at school threatened to beat you up?	.540		.282					-.314	
Overall, adults at my school treat students fairly.	.527		-.497	-.245					
During the last 30 days, have other students at school pushed, shoved, slapped, hit or kicked you when they weren't kidding around?	.508		.282					-.312	
Adults at my school listen to the students.	.501		-.486	-.247					
During the last 30 days, have YOU pushed, shoved, slapped, hit or kicked someone when you weren't kidding around?	.480			.295			-.235	-.307	
During the last 30 days, have other students at school spread mean rumors or lies about you?	.478	-.206	.303	-.244					
During the last 30 days, have YOU threatened to beat someone up?	.462			.289			-.245		
How often do you pay attention in class?	.438		-.278		-.256		.324		.200
During the last 12 months, have you hit or beat up another person?	.436			.303		-.298		-.220	-.218
How often do you care about doing well in school?	.424		-.337				.323		
During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your race, ethnicity or national origin?	.406		.260						-.375
During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your weight or physical appearance?	.401		.257	-.232					

During the last 12 months, have you damaged or destroyed property?	.401		.261		-.396	.225		
During the last 30 days, have other students at school stolen or deliberately damaged your property such as clothing, books or car?	.398						-.206	
During the last 30 days, have you been bullied through e-mail, chat rooms, instant messaging, websites or texting?	.389	.232						
During the last 30 days, have other students at school excluded you from friends, other students or activities?	.386	.271	-.313				.201	
During the last 30 days, have other students at school threatened or injured you with a weapon (gun, knife, club, etc.)?	.379			.359			-.268	.304
During the last 30 days, have YOU spread mean rumors or lies about someone else?	.373			-.344		-.285	.223	
During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your gender (being male or female)?	.364	.234	-.204					
During the last 12 months, have you run away from home?	.358				-.231			
During the last 12 months, have you taken something from a store without paying for it?	.350		.254		-.300		.304	
During the last 30 days, have other students harassed or bullied you for any of the following reasons: A physical or mental disability?	.333	.219				.219		
During the last 12 months, have you used marijuana (pot, weed) or hashish (hash, hash oil)?	.242	.787						
During the last 12 months, have you used prescription drugs that were not prescribed for you by a doctor or that you took to get high?		.769	-.263					
During the last 12 months, have you sniffed glue or huffed or inhaled the contents of aerosol spray cans or other gases to get high?	.221	.694	-.242					

During the last 12 months, have you had alcoholic beverages to drink such as beer, wine, wine coolers and liquor?	.284	.588							
At my school, teachers care about students.	.486		-.559	-.229					
Most teachers at my school are interested in me as a person.	.420		-.492						
The school rules are fair.	.468		-.472						
During the last 30 days, have you been suspended from school (out-of-school suspension-OSS)?	.264			.458	.206	.383	-.247		
During the last 30 days, have you had in-school suspension (ISS)?	.310			.455		.452	-.214		
During the last 30 days, have you been sent to the office for discipline?	.402			.436		.314			
During the last 30 days, have other students at school offered, sold, or given you an illegal drug?	.250				.460	-.217			.391
During the last 30 days, have YOU excluded someone from friends, other students or activities?	.349				-.387		-.278	.305	
During the last 30 days, did you carry a weapon such as a gun, knife, or club ON SCHOOL PROPERTY?	.264				.288	-.247			.226
How would you describe your grades this school year?						.220	.413		
How often do you go to class unprepared?	.286				-.236	.235	.341		
During the last 30 days, have you smoked any cigarettes?	.237	.326			.222			.367	
During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your religion?	.326		.249		.230			.200	-.385

MSS Scores by PBIS Cohort

An overall exploration of whether student's self-reported thoughts, perceptions, and behaviors differed between the cohorts of schools that have implemented PBIS and

schools that have not been trained to implement PBIS was addressed on an item-by-item basis and may be viewed in Table 3.

Table 3

Results from MANOVA: Differences between PBIS-trained cohorts of schools and Non-PBIS-trained Schools - All grade levels combined

Items		N	Mean	Std. Deviation	Significance when compared with Non-PBIS schools
How would you describe your grades this school year?	No PBIS	23638	2.08	1.359	
	1st cohort	1002	1.97	1.034	.362
	2nd cohort	251	2.16	1.180	1.000
	3rd cohort	3386	1.89	1.044	.000
	4th cohort	2929	1.92	1.117	.000
	5th cohort	1454	2.19	1.496	.53
	6th cohort	3276	2.20	1.646	.000
	7th cohort	6759	2.22	1.444	.000
	8th cohort	4538	2.10	1.366	1.00
	Total	47233	2.09	1.361	
How often do you care about doing well in school?	No PBIS	24570	1.63	.716	
	1st cohort	1007	1.69	.757	.466
	2nd cohort	262	1.63	.755	1.000
	3rd cohort	3499	1.69	.723	.000
	4th cohort	3009	1.58	.694	.004
	5th cohort	1484	1.61	.723	1.000
	6th cohort	3422	1.59	.700	.172
	7th cohort	7057	1.63	.712	1.000
	8th cohort	4701	1.65	.719	1.000
	Total	49011	1.63	.716	
How often do you pay attention in class?	No PBIS	24543	1.94	.615	
	1st cohort	1006	2.01	.628	.018
	2nd cohort	261	1.90	.709	1.000
	3rd cohort	3497	1.99	.607	.000
	4th cohort	3003	1.90	.607	.081
	5th cohort	1486	1.94	.610	1.000
	6th cohort	3417	1.91	.618	.559
	7th cohort	7045	1.96	.610	1.000
	8th cohort	4702	1.97	.601	.257
	Total	48960	1.94	.613	
How often do you go to class unprepared?	No PBIS	24526	1.5935	.70313	
	1st cohort	1007	1.6683	.77947	.033
	2nd cohort	259	1.5792	.78535	1.000
	3rd cohort	3486	1.5597	.68956	.278

	4th cohort	3002	1.5380	.67718	.002
	5th cohort	1478	1.6597	.71912	.016
	6th cohort	3418	1.6507	.69466	.000
	7th cohort	7037	1.5748	.69819	1.000
	8th cohort	4692	1.6503	.70674	.000
	Total	48905	1.5979	.70298	
During the last 30 days, have you	No PBIS	6347	1.0082	.09015	
smoked any cigarettes?**	1st cohort	68	1.0588	.23704	
	2nd cohort	0	.	.	
	3rd cohort	229	1.0175	.13129	
	4th cohort	557	1.0036	.05987	
	5th cohort	737	1.0095	.09706	
	6th cohort	1980	1.0051	.07091	
	7th cohort	1220	1.0000	.00000	
	8th cohort	1253	1.0144	.11904	
	Total	12391	1.0078	.08813	
During the last 12 months, have	No PBIS	6310	1.0385	.19244	
you had alcoholic beverages to	1st cohort	67	1.1194	.32671	
drink such as beer, wine, wine	2nd cohort	0	.	.	
coolers and liquor?**	3rd cohort	225	1.0444	.20654	
	4th cohort	559	1.0358	.18590	
	5th cohort	738	1.0352	.18449	
	6th cohort	1984	1.0398	.19558	
	7th cohort	1197	1.0317	.17540	
	8th cohort	1239	1.0452	.20782	
	Total	12319	1.0390	.19352	
During the last 12 months, have	No PBIS	6285	1.0129	.11280	
you used marijuana (pot, weed)	1st cohort	67	1.0448	.20837	
or hashish (hash, hash oil)?**	2nd cohort	0	.	.	
	3rd cohort	224	1.0223	.14806	
	4th cohort	555	1.0072	.08467	
	5th cohort	734	1.0150	.12158	
	6th cohort	1977	1.0116	.10726	
	7th cohort	1192	1.0134	.11513	
	8th cohort	1239	1.0129	.11295	
	Total	12273	1.0130	.11309	
During the last 12 months, have	No PBIS	6283	1.0212	.14396	
you sniffed glue or huffed or	1st cohort	67	1.0000	.00000	
inhaled the contents of aerosol	2nd cohort	0	.	.	
spray cans or other gases to get	3rd cohort	224	1.0223	.14806	
high?**	4th cohort	558	1.0108	.10323	
	5th cohort	734	1.0218	.14612	
	6th cohort	1980	1.0202	.14073	
	7th cohort	1194	1.0176	.13150	
	8th cohort	1240	1.0242	.15371	
	Total	12280	1.0204	.14150	
During the last 12 months, have	No PBIS	6282	1.0123	.11004	
you used prescription drugs that	1st cohort	67	1.0000	.00000	
were not prescribed for you by a	2nd cohort	0	.	.	
doctor or that you took to get	3rd cohort	224	1.0134	.11521	
high?**	4th cohort	558	1.0108	.10323	
	5th cohort	736	1.0149	.12142	

	6th cohort	1980	1.0101	.10002	
	7th cohort	1196	1.0125	.11133	
	8th cohort	1240	1.0121	.10936	
	Total	12283	1.0120	.10875	
During the last 30 days, have you	No PBIS	24125	1.1049	.30639	
been sent to the office for	1st cohort	1000	1.1370	.34402	.052
discipline?	2nd cohort	254	1.1575	.36497	.276
	3rd cohort	3446	1.1132	.31685	1.000
	4th cohort	2971	1.1027	.30356	1.000
	5th cohort	1455	1.1017	.30238	1.000
	6th cohort	3336	1.1172	.32171	1.000
	7th cohort	6959	1.1124	.31585	1.000
	8th cohort	4631	1.1242	.32980	.004
	Total	48177	1.1100	.31285	
During the last 30 days, have you	No PBIS	24035	1.0382	.19157	
had in-school suspension (ISS)?	1st cohort	1000	1.0550	.22809	.296
	2nd cohort	253	1.0316	.17533	1.000
	3rd cohort	3438	1.0439	.20495	1.000
	4th cohort	2952	1.0383	.19190	1.000
	5th cohort	1449	1.0518	.22162	.391
	6th cohort	3321	1.0497	.21732	.058
	7th cohort	6929	1.0429	.20256	1.000
	8th cohort	4604	1.0369	.18860	1.000
	Total	47981	1.0407	.19751	
During the last 30 days, have you	No PBIS	24058	1.0197	.13898	
been suspended from school	1st cohort	1000	1.0260	.15921	1.000
(out-of-school suspension-OSS)?	2nd cohort	255	1.0353	.18489	1.000
	3rd cohort	3435	1.0224	.14805	1.000
	4th cohort	2955	1.0156	.12381	1.000
	5th cohort	1451	1.0117	.10764	1.000
	6th cohort	3320	1.0208	.14268	1.000
	7th cohort	6958	1.0279	.16465	.001
	8th cohort	4615	1.0217	.14561	1.000
	Total	48047	1.0211	.14359	
During the last 30 days, did you	No PBIS	24440	1.0304	.17169	
carry a weapon such as a gun,	1st cohort	1007	1.0457	.20889	.179
knife, or club ON SCHOOL	2nd cohort	262	1.0344	.18248	1.000
PROPERTY?	3rd cohort	3488	1.0427	.20225	.002
	4th cohort	2997	1.0244	.15418	1.000
	5th cohort	1484	1.0243	.15390	1.000
	6th cohort	3406	1.0188	.13580	.006
	7th cohort	7012	1.0255	.15773	1.000
	8th cohort	4680	1.0299	.17037	1.000
	Total	48776	1.0295	.16921	
During the last 30 days, have	No PBIS	24227	1.0968	.29568	
YOU pushed, shoved, slapped,	1st cohort	1006	1.1014	.30200	1.000
hit or kicked someone when you	2nd cohort	252	1.1032	.30479	1.000
weren't kidding around?	3rd cohort	3467	1.0969	.29588	1.000
	4th cohort	2979	1.0742	.26212	.003
	5th cohort	1466	1.1085	.31106	1.000
	6th cohort	3375	1.1084	.31099	1.000
	7th cohort	6933	1.0899	.28600	1.000

	8th cohort	4641	1.1159	.32017	.002
	Total	48346	1.0975	.29670	
During the last 30 days, have	No PBIS	24185	1.0801	.27144	
YOU threatened to beat someone	1st cohort	1005	1.0836	.27690	1.000
up?	2nd cohort	255	1.0863	.28132	1.000
	3rd cohort	3457	1.0882	.28367	1.000
	4th cohort	2974	1.0662	.24874	.306
	5th cohort	1459	1.0918	.28890	1.000
	6th cohort	3369	1.0689	.25326	.870
	7th cohort	6917	1.0782	.26853	1.000
	8th cohort	4629	1.0851	.27908	1.000
	Total	48250	1.0797	.27085	
During the last 30 days, have	No PBIS	24145	1.0816	.27381	
YOU spread mean rumors or lies	1st cohort	1005	1.0826	.27539	1.000
about someone else?	2nd cohort	254	1.0748	.26359	1.000
	3rd cohort	3455	1.0851	.27906	1.000
	4th cohort	2969	1.0653	.24717	.075
	5th cohort	1461	1.1034	.30452	.110
	6th cohort	3364	1.0761	.26520	1.000
	7th cohort	6909	1.0750	.26337	1.000
	8th cohort	4620	1.0853	.27933	1.000
	Total	48182	1.0805	.27211	
During the last 30 days, have	No PBIS	24139	1.1225	.32792	
YOU excluded someone from	1st cohort	1004	1.1106	.31374	1.000
friends, other students or	2nd cohort	253	1.0988	.29900	1.000
activities?	3rd cohort	3460	1.1286	.33482	1.000
	4th cohort	2970	1.1027	.30361	.061
	5th cohort	1457	1.1407	.34783	1.000
	6th cohort	3356	1.1150	.31909	1.000
	7th cohort	6903	1.1127	.31625	.959
	8th cohort	4619	1.1243	.32992	1.000
	Total	48161	1.1202	.32515	
During the last 30 days, have	No PBIS	24277	1.1287	.33490	
other students at school stolen or	1st cohort	1007	1.1450	.35226	1.000
deliberately damaged your	2nd cohort	257	1.1401	.34774	1.000
property such as clothing, books	3rd cohort	3472	1.1241	.32978	1.000
or car?	4th cohort	2982	1.1214	.32664	1.000
	5th cohort	1475	1.1559	.36291	.098
	6th cohort	3383	1.1398	.34685	1.000
	7th cohort	6986	1.1315	.33802	1.000
	8th cohort	4659	1.1447	.35180	.116
	Total	48498	1.1319	.33837	
During the last 30 days, have	No PBIS	24227	1.0845	.27813	
other students at school offered,	1st cohort	1006	1.1163	.32075	.013
sold, or given you an illegal	2nd cohort	252	1.1349	.34232	.143
drug?	3rd cohort	3473	1.0959	.29447	.834
	4th cohort	2977	1.0873	.28237	1.000
	5th cohort	1467	1.0498	.21753	.000
	6th cohort	3383	1.0322	.17661	.000
	7th cohort	6973	1.1061	.30802	.000
	8th cohort	4652	1.0735	.26101	.472
	Total	48410	1.0838	.27704	

During the last 30 days, have other students at school threatened or injured you with a weapon (gun, knife, club, etc.)?	No PBIS	24218	1.0520	.22200	
	1st cohort	1005	1.0567	.23142	1.000
	2nd cohort	253	1.0751	.26407	1.000
	3rd cohort	3467	1.0496	.21717	1.000
	4th cohort	2980	1.0399	.19583	.180
	5th cohort	1463	1.0519	.22200	1.000
	6th cohort	3378	1.0533	.22464	1.000
	7th cohort	6970	1.0511	.22017	1.000
	8th cohort	4654	1.0557	.22927	1.000
	Total	48388	1.0516	.22123	
During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your race, ethnicity or national origin?	No PBIS	24185	1.0925	.28973	
	1st cohort	1004	1.1355	.34238	.000
	2nd cohort	256	1.1172	.32227	1.000
	3rd cohort	3463	1.0869	.28176	1.000
	4th cohort	2979	1.0886	.28424	1.000
	5th cohort	1470	1.1184	.32315	.044
	6th cohort	3371	1.1071	.30927	.277
	7th cohort	6944	1.1119	.31526	.000
	8th cohort	4651	1.1032	.30426	.891
	Total	48323	1.0985	.29800	
During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your religion?	No PBIS	24091	1.0734	.26078	
	1st cohort	1005	1.0975	.29680	.146
	2nd cohort	256	1.0625	.24254	1.000
	3rd cohort	3457	1.0654	.24722	1.000
	4th cohort	2979	1.0551	.22812	.011
	5th cohort	1455	1.0838	.27726	1.000
	6th cohort	3364	1.0823	.27493	1.000
	7th cohort	6913	1.0723	.25905	1.000
	8th cohort	4640	1.0782	.26857	1.000
	Total	48160	1.0734	.26076	
During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your gender (being male or female)?	No PBIS	24038	1.0746	.26273	
	1st cohort	1003	1.0768	.26636	1.000
	2nd cohort	253	1.0435	.20434	1.000
	3rd cohort	3451	1.0742	.26210	1.000
	4th cohort	2963	1.0550	.22804	.004
	5th cohort	1453	1.0860	.28050	1.000
	6th cohort	3365	1.0918	.28883	.012
	7th cohort	6896	1.0651	.24674	.278
	8th cohort	4619	1.0732	.26045	1.000
	Total	48041	1.0733	.26062	
During the last 30 days, have other students harassed or bullied you for any of the following reasons: A physical or mental disability?	No PBIS	24076	1.0609	.23913	
	1st cohort	1002	1.0549	.22788	1.000
	2nd cohort	253	1.0237	.15246	.473
	3rd cohort	3451	1.0609	.23909	1.000
	4th cohort	2970	1.0502	.21833	.724
	5th cohort	1464	1.0779	.26806	.282
	6th cohort	3361	1.0690	.25354	1.000
	7th cohort	6910	1.0563	.23051	1.000
	8th cohort	4624	1.0560	.22997	1.000
	Total	48111	1.0599	.23723	
During the last 30 days, have other students harassed or bullied	No PBIS	24125	1.2345	.42371	
	1st cohort	1005	1.2279	.41966	1.000

you for any of the following	2nd cohort	255	1.1725	.37860	.726
reasons: Your weight or physical	3rd cohort	3459	1.2365	.42498	1.000
appearance?	4th cohort	2974	1.2233	.41651	1.000
	5th cohort	1461	1.2786	.44845	.004
	6th cohort	3362	1.2439	.42950	1.000
	7th cohort	6913	1.2200	.41429	.435
	8th cohort	4636	1.2496	.43281	.968
	Total	48190	1.2349	.42392	
During the last 30 days, have you	No PBIS	24388	1.1462	.35333	
been bullied through e-mail, chat	1st cohort	1007	1.1311	.33766	1.000
rooms, instant messaging,	2nd cohort	258	1.1357	.34309	1.000
websites or texting?	3rd cohort	3486	1.1457	.35288	1.000
	4th cohort	2993	1.1173	.32180	.001
	5th cohort	1478	1.1867	.38983	.001
	6th cohort	3409	1.1291	.33533	.258
	7th cohort	6980	1.1307	.33705	.037
	8th cohort	4675	1.1474	.35452	1.000
	Total	48674	1.1419	.34900	
During the last 30 days, have	No PBIS	24243	1.1786	.38303	
other students at school pushed,	1st cohort	1005	1.1701	.37595	1.000
shoved, slapped, hit or kicked	2nd cohort	255	1.1569	.36439	1.000
you when they weren't kidding	3rd cohort	3463	1.1444	.35153	.000
around?	4th cohort	2982	1.1385	.34548	.000
	5th cohort	1474	1.2347	.42398	.000
	6th cohort	3386	1.2395	.42685	.000
	7th cohort	6950	1.1499	.35703	.000
	8th cohort	4648	1.2009	.40075	.009
	Total	48406	1.1774	.38201	
During the last 30 days, have	No PBIS	24186	1.1340	.34062	
other students at school	1st cohort	1006	1.1561	.36310	1.000
threatened to beat you up?	2nd cohort	252	1.1508	.35856	1.000
	3rd cohort	3451	1.1121	.31559	.014
	4th cohort	2971	1.1020	.30268	.000
	5th cohort	1465	1.1713	.37693	.001
	6th cohort	3377	1.1587	.36547	.003
	7th cohort	6941	1.1163	.32057	.005
	8th cohort	4636	1.1480	.35511	.357
	Total	48285	1.1326	.33920	
During the last 30 days, have	No PBIS	24079	1.2887	.45316	
other students at school spread	1st cohort	1004	1.2580	.43773	1.000
mean rumors or lies about you?	2nd cohort	252	1.2262	.41920	1.000
	3rd cohort	3438	1.2542	.43548	.001
	4th cohort	2971	1.2464	.43098	.000
	5th cohort	1462	1.3803	.48563	.000
	6th cohort	3361	1.3118	.46330	.187
	7th cohort	6905	1.2549	.43583	.000
	8th cohort	4613	1.2963	.45669	1.000
	Total	48085	1.2829	.45042	
During the last 30 days, have	No PBIS	24169	1.2684	.44316	
other students at school excluded	1st cohort	1005	1.2070	.40533	.001
you from friends, other students	2nd cohort	254	1.2087	.40715	1.000
or activities?	3rd cohort	3451	1.2509	.43362	1.000

	4th cohort	2973	1.2361	.42477	.006
	5th cohort	1463	1.3486	.47669	.000
	6th cohort	3372	1.2880	.45288	.571
	7th cohort	6921	1.2398	.42702	.000
	8th cohort	4634	1.2723	.44521	1.000
	Total	48242	1.2637	.44063	
During the last 12 months, have you run away from home?	No PBIS	22889	1.0655	.24739	
	1st cohort	993	1.0725	.25946	1.000
	2nd cohort	224	1.0580	.23433	1.000
	3rd cohort	3266	1.0606	.23868	1.000
	4th cohort	2793	1.0677	.25122	1.000
	5th cohort	1415	1.0742	.26220	1.000
	6th cohort	3174	1.0542	.22643	.600
	7th cohort	6468	1.0736	.26113	.754
	8th cohort	4370	1.0709	.25675	1.000
	Total	45592	1.0665	.24924	
During the last 12 months, have you damaged or destroyed property?	No PBIS	22854	1.1282	.33437	
	1st cohort	993	1.1440	.35127	1.000
	2nd cohort	222	1.0946	.29332	1.000
	3rd cohort	3259	1.1418	.34886	1.000
	4th cohort	2788	1.1341	.34087	1.000
	5th cohort	1411	1.1354	.34223	1.000
	6th cohort	3167	1.1178	.32239	1.000
	7th cohort	6450	1.1364	.34328	1.000
	8th cohort	4360	1.1433	.35047	.249
	Total	45504	1.1319	.33834	
During the last 12 months, have you hit or beat up another person?	No PBIS	22778	1.1269	.33289	
	1st cohort	991	1.1211	.32640	1.000
	2nd cohort	222	1.1081	.31122	1.000
	3rd cohort	3251	1.1237	.32924	1.000
	4th cohort	2780	1.0993	.29909	.001
	5th cohort	1407	1.1485	.35576	.631
	6th cohort	3159	1.1342	.34094	1.000
	7th cohort	6422	1.1215	.32668	1.000
	8th cohort	4350	1.1315	.33798	1.000
	Total	45360	1.1256	.33142	
During the last 12 months, have you taken something from a store without paying for it?	No PBIS	22839	1.0866	.28120	
	1st cohort	993	1.1168	.32136	.036
	2nd cohort	222	1.0541	.22664	1.000
	3rd cohort	3263	1.0962	.29495	1.000
	4th cohort	2786	1.0879	.28326	1.000
	5th cohort	1413	1.0594	.23654	.017
	6th cohort	3171	1.0530	.22403	.000
	7th cohort	6443	1.1114	.31470	.000
	8th cohort	4360	1.0883	.28377	1.000
	Total	45490	1.0883	.28381	
Overall, adults at my school treat students fairly.	No PBIS	23980	1.93	.772	
	1st cohort	1002	2.13	.801	.000
	2nd cohort	250	2.14	.785	.001
	3rd cohort	3440	2.04	.792	.000
	4th cohort	2944	1.84	.745	.000
	5th cohort	1444	1.88	.791	.633

	6th cohort	3331	1.87	.793	.002
	7th cohort	6863	1.97	.768	.000
	8th cohort	4592	1.95	.786	1.000
	Total	47846	1.94	.777	
Adults at my school listen to the students.	No PBIS	23691	1.99	.756	
	1st cohort	1002	2.17	.768	.000
	2nd cohort	246	2.21	.780	.000
	3rd cohort	3390	2.14	.774	.000
	4th cohort	2917	1.90	.720	.000
	5th cohort	1434	1.91	.779	.008
	6th cohort	3291	1.91	.782	.000
	7th cohort	6783	2.05	.751	.000
	8th cohort	4527	2.03	.765	.100
	Total	47281	2.00	.761	
The school rules are fair.	No PBIS	23966	2.03	.784	
	1st cohort	1001	2.26	.851	.000
	2nd cohort	246	2.29	.829	.000
	3rd cohort	3439	2.20	.793	.000
	4th cohort	2946	2.00	.761	1.000
	5th cohort	1446	1.99	.791	1.000
	6th cohort	3323	1.98	.824	.027
	7th cohort	6859	2.03	.761	1.000
	8th cohort	4595	2.08	.798	.000
	Total	47821	2.05	.788	
At my school, teachers care about students.	No PBIS	23532	1.76	.704	
	1st cohort	998	2.03	.720	.000
	2nd cohort	240	1.95	.704	.001
	3rd cohort	3361	1.89	.708	.000
	4th cohort	2899	1.70	.662	.000
	5th cohort	1427	1.64	.711	.000
	6th cohort	3236	1.64	.709	.000
	7th cohort	6762	1.82	.703	.000
	8th cohort	4508	1.76	.695	1.000
	Total	46963	1.77	.705	

** Analyses could not be completed because one or more cohorts did not report any data for particular item.

Of the 39 items, 23 yielded significant results when at least one cohort was compared with Non-PBIS schools. When students were asked to describe their grades, cohorts 3, 4, 6, and 7, reported significant effects of PBIS, $F(8, 47{,}224) = 28.16$, $p<.001$. However, student from cohorts 3 and 4 reported that students felt their grades were better, when compared with students from Non-PBIS schools; whereas, students from cohorts 6 and 7 reported that students felt their grades were worse, when compared with students

from Non-PBIS schools. There was a significant effect of PBIS on students reporting how often they care about doing well in school, $F(9, 49{,}002) = 7.50$, $p<.001$. Cohort 3 reports students caring less about doing well in school when compared to students in Non-PBIS schools, in contrast to students in Cohort 4 reporting that they care more about doing well in school when compared to students attending Non-PBIS schools. When asked how often students pay attention in class, there was a significant effect on PBIS between groups, $F(8, 48{,}951) = 8.00$, $p<.001$; cohorts 1 and 3 report that they pay less attention in class when compared with students in Non-PBIS schools. There was a significant effect on PBIS between groups when students were asked how often they go to class unprepared $F(8, 48{,}896) = 13.48$, $p<.001$. Cohorts 1, 5, 6, and 8 report that they go to class less prepared than students from Non-PBIS schools and cohort 4 reports that they go to class more prepared than students who attend Non-PBIS schools.

There was a significant difference on the effect of PBIS when students reported if they had been sent to the office for discipline, $F(8, 48168) = 4.31$, $p<.001$; and also if they have served an out of school suspension within the last 30 days $F(8, 48{,}038) = 4.05$, $p<.001$. Students from cohort 8 reported that they have been sent to the office more frequently for discipline measures than students from Non-PBIS schools and students from Cohort 7 reported that they had served more out of school suspensions than students from Non-PBIS schools.

When students were asked if they carried a weapon to school, there were significant effects of PBIS between groups $F(8, 48{,}767) = 6.65$, $p<.001$. Students from cohort 3 reported more instances of behavior when compared with students from Non-

PBIS schools, whereas students from cohort 6 report less instances of behavior when compared with students from Non-PBIS schools. There was a significant effect of PBIS between cohorts on instances of students pushing, shoving, slapping, hitting or kicking another student, $F(8, 48{,}337) = 5.99$, $p<.001$. Students from cohort 4 reported less instances of engaging in this behavior, whereas students from cohort 8 reported more instances of students engaging in this behavior when compared with students from Non-PBIS schools. Student responses from cohort 4 reported significantly less instances of the student hitting or beating another student up when compared to responses from students who attend Non-PBIS schools, $F(8, 45{,}351) = 3.76$, $p<.001$; and student responses from cohorts 5 and 6 reported significantly less instances of the student stealing something from a store without paying for it, whereas student responses from cohorts 1 and 7 report more instances of these behavior when compared to responses from students who attend Non-PBIS schools, $F(8, 45{,}481) = 15.44$, $p<.001$.

There was a significant effect of PBIS between groups on instances of students being approached to buy illegal drugs $F(8, 48{,}401) = 27.72$, $p<.001$. Cohorts 1 and 7 reported more instances of students being approached to buy drugs on their school campus, whereas students from cohorts 5 and 6 reported less instances of being approached to buy drugs on their school campus when compared to students who attend Non-PBIS schools.

When students were asked if they had been bullied due to their race, ethnicity, and/or national origin, there were significant effects of PBIS on instances of bullying $F(8, 48{,}314) = 7.42$, $p<.001$. Students from cohorts 1, 5, and 7 all reported more instances of

bullying than students who attended Non-PBIS schools. There were also significant effects of PBIS on instances of bullying due to religious reasons $F(8, 48{,}151) = 4.39$, $p<.001$ whereas students from cohort 4 report less instances of this type of bullying occurring in their school when compared with students from Non-PBIS schools. Students from cohort 4 report significantly less instances of bullying related to gender and students from cohort 6 reports significantly more instances of bullying related to gender when compared with students who attend Non-PBIS schools, $F(8, 48{,}032) = 5.75$, $p<.001$. Students from cohort 5 report significantly more instances of bullying due related to their weight and/or physical appearance, $F(8, 48{,}181) = 4.90$, $p<.001$.

There was a significant effect of PBIS between groups on instances of a student being bullied through email, chat rooms, instant messaging, websites, or through texting, $F(8, 48{,}665) = 7.20$, $p<.001$. Students from cohorts 4 and 7 reported less instances of being bullied whereas students from cohort 5 reported more instances of being bullied when compared with students who attended Non-PBIS schools. Students from cohorts 3, 4, and 7 reported significantly less instances of being physically abused (i.e. pushed, shoved, slapped, kicked, hit) on their campus whereas students from cohorts 5, 6, and 8 reported significantly more instances of being physically abused by other students on their campus, when compared to student responses of those that attend Non-PBIS schools, $F(8, 48{,}397) = 29.45$, $p<.001$. Students from cohorts 5 and 6 report significantly more instances of other students threatening to beat them up, whereas students from cohorts 3, 4, and 7 report significantly less instances of other students threatening to beat

them up, when compared with responses from students who attend Non-PBIS schools, $F(8, 48{,}276) = 13.46$, $p<.001$.

There was a significant effect of PBIS on student responses that addressed the spreading of mean rumors or lies about the student, $F(8, 48{,}076) = 19.75$, $p<.001$. Students from cohorts 3, 4, and 7 report less instances of this behavior whereas students from cohort 5 report more instances of this behavior happening at their school when compared with responses of students who attend Non-PBIS schools. Additionally, student responses from cohorts 1, 4, and 7 report less instances of their friends excluding them; students from cohort 5 report more instances of their friends excluding them from their circle of friends and/or activities when compared with the responses from students who attend Non-PBIS schools, $F(8, 48{,}233) = 15.61$, $p<.001$.

There was a significant effect of PBIS between groups on how students feel about adults treating them fairly, $F(8, 47{,}837) = 30.00$, $p<.001$. Overall, students from cohorts 4 and 6 feel that adults treat students in the school fairly; however, students from cohorts 1, 2, 3, and 7 feel that adults do not treat students as fairly, when compared with students who attend Non-PBIS schools. Additionally, students in cohorts 4, 5, and 6 feel that adults listen to students in their schools, whereas students in cohorts 1, 2, 3, and 7 do not feel as if adults listen to students when compared with the responses of students who attend Non-PBIS schools, $F(8, 47{,}272) = 41.04$, $p<.001$. Students in cohorts 1, 2, and 3 report significantly less favorable feedback regarding the fairness of their school rules, whereas cohort 6 reports that their school rules are more fair, when compared with responses from students who attend Non-PBIS schools, $F(8, 47{,}812) = 38.92$, $p<.001$.

There was a significant effect of PBIS between groups on the student perception of whether teachers at their schools care about them, $F(8, 46{,}954) = 61.49$, $p<.001$. Student responses from cohorts 1, 2, 3, and 7 report that their teachers care less about them when compared to responses given by students who attend a Non-PBIS school; however, student responses from cohorts 4, 5, and 6 report that their teachers care more about them when compared to responses given by students who attend a Non-PBIS school.

MSS Scores for All Grade Levels Combined by PBIS Implementation Status

An overall exploration of whether student's self-reported perceptions, feelings, and behaviors differed between schools who implemented PBIS with fidelity, versus schools who implemented PBIS without fidelity, and schools that have not implemented PBIS, was addressed on an item-by-item basis and may be viewed in Table 4.

Table 4

Results of MANOVA: Results for all grade levels combined for students from schools that implemented PBIS w/fidelity vs. schools that implemented PBIS w/o fidelity vs. Non-PBIS-trained Schools

Study Code	Items		N	Mean	Std. Deviation	Significance when compared with Non-PBIS schools
SBc	How would you describe your grades this school year?	NON-PBIS	23640	2.08	1.359	
		SET and/or BOQ with Fidelity	9104	2.22	1.604	.000
		SET and/or BOQ w/o Fidelity	4090	2.08	1.193	1.00
		Total	36834	2.11	1.408	

	How often do you care about doing well in school?	NON-PBIS	24572	1.63	.716	
		SET and/or BOQ with Fidelity	9493	1.60	.698	.01
		SET and/or BOQ w/o Fidelity	4241	1.66	.737	.016
		Total	38306	1.63	.714	
	How often do you pay attention in class?	NON-PBIS	24545	1.94	.615	
		SET and/or BOQ with Fidelity	9489	1.92	.612	.109
		SET and/or BOQ w/o Fidelity	4232	1.97	.621	.007
		Total	38266	1.94	.615	
	How often do you go to class unprepared?	NON-PBIS	24528	1.5935	.70312	
		SET and/or BOQ with Fidelity	9464	1.6011	.68461	1.00
		SET and/or BOQ w/o Fidelity	4219	1.6416	.73459	.000
		Total	38211	1.6007	.70228	
SBd	During the last 30 days, have you been sent to the office for discipline?	NON-PBIS	24127	1.1049	.30638	
		SET and/or BOQ with Fidelity	9322	1.1266	.33252	.000
		SET and/or BOQ w/o Fidelity	4177	1.1075	.30978	1.00
		Total	37626	1.1105	.31356	
	During the last 30 days, have you had in-school suspension (ISS)?	NON-PBIS	24037	1.0381	.19156	
		SET and/or BOQ with Fidelity	9262	1.0329	.17846	.080
		SET and/or BOQ w/o Fidelity	4163	1.0538	.22566	.000
		Total	37462	1.0386	.19264	
	During the last 30 days, have you been suspended from school (out-of-school suspension-OSS)?	NON-PBIS	24060	1.0197	.13897	
		SET and/or BOQ with Fidelity	9278	1.0196	.13869	1.000
		SET and/or BOQ w/o Fidelity	4170	1.0228	.14923	.569
		Total	37508	1.0200	.14008	
	During the last 30 days, did you carry a weapon such as a gun, knife, or club ON SCHOOL PROPERTY?	NON-PBIS	24442	1.0304	.17168	
		SET and/or BOQ with Fidelity	9454	1.0225	.14841	.000
		SET and/or BOQ w/o Fidelity	4211	1.0349	.18357	.320
		Total	38107	1.0289	.16765	
SBb	During the last 30 days, have YOU pushed, shoved, slapped, hit or kicked someone when you weren't kidding around?	NON-PBIS	24229	1.0968	.29573	
		SET and/or BOQ with Fidelity	9392	1.1017	.30225	.534
		SET and/or BOQ w/o Fidelity	4166	1.0912	.28795	.778
		Total	37787	1.0974	.29653	
	During the last 30 days,	NON-PBIS	24187	1.0801	.27149	

	have YOU threatened to beat someone up?	SET and/or BOQ with Fidelity	9370	1.0776	.26754	1.00
		SET and/or BOQ w/o Fidelity	4168	1.0720	.25848	.213
		Total	37725	1.0786	.26911	
	During the last 30 days, have YOU spread mean rumors or lies about someone else?	NON-PBIS	24147	1.0816	.27380	
		SET and/or BOQ with Fidelity	9353	1.0841	.27762	1.00
		SET and/or BOQ w/o Fidelity	4161	1.0702	.25547	.037
		Total	37661	1.0810	.27282	
	During the last 30 days, have YOU excluded someone from friends, other students or activities?	NON-PBIS	24141	1.1225	.32790	
		SET and/or BOQ with Fidelity	9345	1.1222	.32754	1.00
		SET and/or BOQ w/o Fidelity	4156	1.1071	.30924	.014
		Total	37642	1.1207	.32583	
SBOa	Overall, adults at my school treat students fairly.	NON-PBIS	23982	1.93	.772	
		SET and/or BOQ with Fidelity	9255	1.89	.787	.001
		SET and/or BOQ w/o Fidelity	4144	1.98	.781	.000
		Total	37381	1.93	.777	
	Adults at my school listen to the students.	NON-PBIS	23693	1.99	.756	
		SET and/or BOQ with Fidelity	9115	1.94	.773	.000
		SET and/or BOQ w/o Fidelity	4098	2.06	.763	.000
		Total	36906	1.99	.762	
	The school rules are fair.	NON-PBIS	23967	2.03	.784	
		SET and/or BOQ with Fidelity	9243	2.02	.798	1.00
		SET and/or BOQ w/o Fidelity	4139	2.11	.806	.000
		Total	37349	2.03	.790	
	At my school, teachers care about students.	NON-PBIS	23534	1.76	.704	
		SET and/or BOQ with Fidelity	9071	1.69	.695	.000
		SET and/or BOQ w/o Fidelity	4057	1.84	.709	.000
		Total	36662	1.75	.703	
	Most teachers at my school are interested in me as a person.	NON-PBIS	23945	2.10	.802	
		SET and/or BOQ with Fidelity	9243	2.04	.807	.000
		SET and/or BOQ w/o Fidelity	4135	2.16	.808	.000
		Total	37323	2.09	.805	
SBOi	During the last 30 days,	NON-PBIS	24279	1.1288	.33493	

	have other students at school stolen or deliberately damaged your property such as clothing, books or car?	SET and/or BOQ with Fidelity	9415	1.1429	.34995	.002
		SET and/or BOQ w/o Fidelity	4188	1.1232	.32872	.981
		Total	37882	1.1316	.33811	
	During the last 30 days, have other students at school offered, sold, or given you an illegal drug?	NON-PBIS	24229	1.0845	.27812	
		SET and/or BOQ with Fidelity	9394	1.0591	.23579	.000
		SET and/or BOQ w/o Fidelity	4178	1.1012	.30169	.001
		Total	37801	1.0800	.27133	
	During the last 30 days, have other students at school threatened or injured you with a weapon (gun, knife, club, etc.)?	NON-PBIS	24220	1.0520	.22199	
		SET and/or BOQ with Fidelity	9384	1.0541	.22630	1.00
		SET and/or BOQ w/o Fidelity	4181	1.0550	.22803	1.00
		Total	37785	1.0529	.22374	
SBOb	During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your race, ethnicity or national origin?	NON-PBIS	24187	1.0925	.28972	
		SET and/or BOQ with Fidelity	9373	1.1021	.30280	.022
		SET and/or BOQ w/o Fidelity	4178	1.1022	.30295	.147
		Total	37738	1.0960	.29453	
	During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your religion?	NON-PBIS	24093	1.0734	.26084	
		SET and/or BOQ with Fidelity	9353	1.0682	.25213	.296
		SET and/or BOQ w/o Fidelity	4168	1.0756	.26435	1.00
		Total	37614	1.0724	.25910	
	During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your gender (being male or female)?	NON-PBIS	24040	1.0746	.26272	
		SET and/or BOQ with Fidelity	9319	1.0731	.26028	1.00
		SET and/or BOQ w/o Fidelity	4159	1.0702	.25553	.957
		Total	37518	1.0737	.26133	
	During the last 30 days, have other students harassed or bullied you for any of the following reasons: A physical or mental disability?	NON-PBIS	24078	1.0609	.23913	
		SET and/or BOQ with Fidelity	9338	1.0609	.23922	1.00
		SET and/or BOQ w/o Fidelity	4154	1.0556	.22919	.561
		Total	37570	1.0603	.23807	
	During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your weight or physical appearance?	NON-PBIS	24127	1.2346	.42373	
		SET and/or BOQ with Fidelity	9348	1.2470	.43129	.048
		SET and/or BOQ w/o Fidelity	4176	1.2136	.40990	.010
		Total	37651	1.2353	.42420	
	During the last 30 days,	NON-PBIS	24390	1.1462	.35332	

	have you been bullied through e-mail, chat rooms, instant messaging, websites or texting?	SET and/or BOQ with Fidelity	9451	1.1471	.35420	1.00
		SET and/or BOQ w/o Fidelity	4199	1.1384	.34533	.549
		Total	38040	1.1456	.35267	
	During the last 30 days, have other students at school pushed, shoved, slapped, hit or kicked you when they weren't kidding around?	NON-PBIS	24245	1.1786	.38305	
		SET and/or BOQ with Fidelity	9398	1.2052	.40383	.000
		SET and/or BOQ w/o Fidelity	4177	1.1611	.36769	.021
		Total	37820	1.1833	.38691	
	During the last 30 days, have other students at school threatened to beat you up?	NON-PBIS	24188	1.1340	.34065	
		SET and/or BOQ with Fidelity	9372	1.1456	.35277	.016
		SET and/or BOQ w/o Fidelity	4175	1.1322	.33877	1.00
		Total	37735	1.1367	.34352	
	During the last 30 days, have other students at school spread mean rumors or lies about you?	NON-PBIS	24081	1.2887	.45316	
		SET and/or BOQ with Fidelity	9343	1.3084	.46184	.001
		SET and/or BOQ w/o Fidelity	4154	1.2528	.43465	.000
		Total	37578	1.2896	.45359	
	During the last 30 days, have other students at school excluded you from friends, other students or activities?	NON-PBIS	24171	1.2684	.44315	
		SET and/or BOQ with Fidelity	9364	1.2812	.44960	.054
		SET and/or BOQ w/o Fidelity	4169	1.2437	.42937	.003
		Total	37704	1.2689	.44337	
Rg	During the last 12 months, have you run away from home?	NON-PBIS	22891	1.0655	.24738	
		SET and/or BOQ with Fidelity	8821	1.0626	.24222	1.00
		SET and/or BOQ w/o Fidelity	3944	1.0659	.24818	1.00
		Total	35656	1.0648	.24620	
	During the last 12 months, have you damaged or destroyed property?	NON-PBIS	22856	1.1283	.33441	
		SET and/or BOQ with Fidelity	8803	1.1359	.34266	.216
		SET and/or BOQ w/o Fidelity	3934	1.1233	.32880	1.00
		Total	35593	1.1296	.33587	
	During the last 12 months, have you hit or beat up another person?	NON-PBIS	22780	1.1270	.33293	
		SET and/or BOQ with Fidelity	8768	1.1312	.33759	.942
		SET and/or BOQ w/o Fidelity	3925	1.1124	.31585	.033
		Total	35473	1.1264	.33228	
	During the last 12 months,	NON-PBIS	22841	1.0866	.28119	

	have you taken something from a store without paying for it?	SET and/or BOQ with Fidelity	8797	1.0770	.26654	.019
		SET and/or BOQ w/o Fidelity	3933	1.0984	.29789	.042
		Total	35571	1.0855	.27961	
Rd	During the last 30 days, have you smoked any cigarettes?	NON-PBIS	6349	1.0082	.09014	
		SET and/or BOQ with Fidelity	3539	1.0048	.06915	.213
		SET and/or BOQ w/o Fidelity	776	1.0219	.14648	.000
		Total	10664	1.0081	.08944	
	During the last 12 months, have you had alcoholic beverages to drink such as beer, wine, wine coolers and liquor?	NON-PBIS	6311	1.0385	.19243	
		SET and/or BOQ with Fidelity	3506	1.0385	.19244	1.00
		SET and/or BOQ w/o Fidelity	769	1.0403	.19682	1.00
		Total	10586	1.0386	.19273	
	During the last 12 months, have you used marijuana (pot, weed) or hashish (hash, hash oil)?	NON-PBIS	6286	1.0129	.11279	
		SET and/or BOQ with Fidelity	3490	1.0126	.11159	1.00
		SET and/or BOQ w/o Fidelity	770	1.0130	.11329	1.00
		Total	10546	1.0128	.11242	
	During the last 12 months, have you sniffed glue or huffed or inhaled the contents of aerosol spray cans or other gases to get high?	NON-PBIS	6284	1.0212	.14395	
		SET and/or BOQ with Fidelity	3495	1.0240	.15318	1.00
		SET and/or BOQ w/o Fidelity	772	1.0155	.12378	.936
		Total	10551	1.0217	.14572	
	During the last 12 months, have you used prescription drugs that were not prescribed for you by a doctor or that you took to get high?	NON-PBIS	6283	1.0123	.11003	
		SET and/or BOQ with Fidelity	3499	1.0129	.11269	1.00
		SET and/or BOQ w/o Fidelity	771	1.0078	.08793	.853
		Total	10553	1.0121	.10947	

MANOVA results indicate that, out of 39 items, there was a significant effect of PBIS on 25 of the individual items. In the category of *Student Behavior: Commitment*, students who attended schools that implemented PBIS with fidelity reported lower grades, $F(2, 36{,}831) = 33.23$, $p<.001$, than students who attended Non-PPBIS schools. Student who attended schools that implemented PBIS without fidelity reported that they

pay less attention in class, $F(2, 38{,}263) = 8.43$, $p<.001$, and go to class less prepared $F(2, 38{,}208) = 8.45$, $p<.001$, when compared with responses from students who attended Non-PBIS schools. However, students from schools that implemented PBIS with fidelity reported that they care *more* about doing well in school and students from schools that implemented PBIS without fidelity care *less* about doing well in school when compared with students who attended Non-PBIS schools, $F(2, 38{,}303) = 12.94$, $p<.001$.

In the category of *School Behavior: Discipline*, students from schools that implemented PBIS with fidelity report higher instances of being sent to the office for discipline, $F(2, 37{,}623) = 16.37$, $p<.001$, however lower instances of bringing a weapon to school, $F(2, 38{,}104) = 10.51$, $p<.001$, when compared to responses from students who attended Non-PBIS schools. Students that attended schools in which PBIS was not implemented with fidelity, reported more instances of serving in-school suspension, $F(2, 37{,}459) = 17.06$, $p<.001$, when compared with students who attended Non-PBIS schools.

Students from schools that have implemented PBIS without fidelity report significantly less instances of spreading mean rumors or lies about someone else, $F(2, 37{,}658) = 3.96$, $p<.05$, and less instances of the student excluding someone from friends, other students or activities, $F(2, 37{,}639) = 4.12$, $p<.05$ when compared with students who attended Non-PBIS schools.

There was a significant effect of PBIS in the category of *School Behavior of Others: Adult Treatment of Students.* Students who attended schools that have implemented PBIS with fidelity report that they feel that adults at their school treat students more fairly, $F(2, 37{,}378) = 18.74$, $p<.001$; adults at their school listen to the

students, $F(2, 36{,}903) = 30.92$, $p<.001$; teachers care about students, $F(2, 36{,}659) = 67.49$, $p<.001$; and that teachers at their school are more interested in them as a person, $F(2, 37{,}320) = 38.99$, $p<.001$, when compared with student responses from students who attended Non-PBIS schools. However, in all of those instances, responses from students who attended schools that implemented PBIS without fidelity, reported significantly more negative responses. Therefore, they felt that adults did not treat them as fairly; cared less about listening to students; teachers did not care as much about the students; and teachers are not as interested in them as a person, when compared with student responses from students who attended Non-PBIS schools. Additionally, students who attended schools that implemented PBIS without fidelity, feel that the schools rules are not as fair, $F(2, 37{,}346) = 21.34$, $p<.001$ when compared with students who attended Non-PBIS schools.

In the category of *Student Behaviors of Others: Student Illegal Behavior*, students who attended schools that have implemented PBIS with fidelity report higher levels of vandalism (i.e. students at school stolen or deliberately damaged your property such as clothing, books, or car), $F(2, 37{,}879) = 7.37$, $p<.01$; however they reported significantly less instances of other students at school offering, selling, or giving them illegal drugs, $F(2, 37{,}798) = 44.14$, $p<.001$, when compared with responses from students who attended Non-PBIS schools. However, students who attended schools that implemented PBIS without fidelity reported significantly higher number of instances of individuals offering, selling, or giving them illegal drugs when compared with responses from students who attended Non-PBIS schools.

There was a significant effect of PBIS in the category of *Student Behavior of Others: Bullying/Harassment.* Students who attended schools that have implemented PBIS with fidelity report higher number of instances of students harassing or bullying them for their race, ethnicity or national origin, $F(2, 37{,}735) = 4.66$, $p<.01$; higher number of instances of other students harassing or bullying them for their weight or physical appearance, $F(2, 37{,}648) = 9.06$, $p<.001$; higher number of instances of students pushing, shoving, slapping, hitting or kicking them, $F(2, 37{,}817) = 23.64$, $p<.001$; higher number of instances of students at school threatening to beat them up, $F(2, 37{,}732) = 4.29$, $p<.05$; and higher number of instances of students spreading mean rumors or lies about them, $F(2, 37{,}575) = 21.76$, $p<.001$ when compared with students responses from Non-PBIS schools. However, students who attended schools that have implemented PBIS without fidelity report significantly less instances of being harassed or bullied for their weight or physical appearance; other students at school pushing, shoving, slapping, hitting or kicking them; other students spreading mean rumors or lies about them; and other students excluding them from friends, other students or activities, $F(2, 37{,}701) = 10.35$, $p<.001$, when compared with responses from students who attended Non-PBIS schools.

There was a significant effect of PBIS in the category of *Risk Behavior: General*. Students who attended schools that have implemented PBIS without fidelity report significantly less instances of them hitting or beating up other people, $F(2, 35{,}470) = 4.44$, $p<.05$, when compared with responses from students who attended Non-PBIS schools. However, students who attended schools that implemented PBIS with fidelity

reported lower instances of taking something from a store without paying for it and students that attended schools that have implemented PBIS without fidelity, report higher instances of taking something from a store without paying for it, when compared with student responses from Non-PBIS schools, $F(2, 35{,}568) = 8.46$, $p<.001$.

In the category of *Risk Behavior: Drugs and Alcohol*, students who attended schools that have not implemented PBIS with fidelity report higher instances of smoking cigarettes or using tobacco in the last 30 days, $F(2, 10{,}661) = 11.68$, $p<.001$, when compared with responses from students who attended Non-PBIS schools.

MSS Scores for Separate Grade Levels by PBIS Implementation Status

An overall exploration of whether student's self-reported perceptions, feelings, and behaviors differed between the grades of schools that have implemented PBIS with fidelity, schools that have implemented PBIS without fidelity and schools that have not implemented PBIS was addressed on an item-by-item basis. Of the 39 items, 5 items yielded significant results when looking specifically at 5th grade students; 12 items yielded significant results when looking at the 8th grades students; 8 items yielded significant results when comparing 9th grade students; and 15 items yielded significant results when comparing 11th grade students. An item by item analysis can be viewed for 5th grade in Table 5; 8th grade in Table 6; 9th grade in Table 7; and 11th grade in Table 8.

Table 5

Results of MANOVA: Responses of 5th Grade Students from schools that implemented PBIS w/fidelity vs. schools that implemented PBIS w/o fidelity vs. Non-PBIS-trained Schools

Study Code	Items		N	Mean	Std. Deviation	Significance when compared with Non-PBIS Schools
SBc	How would you describe your grades this school year?	NON-PBIS	6328	2.48	1.960	
		SET and/or BOQ with Fidelity	3559	2.66	2.149	.000
		SET and/or BOQ w/o Fidelity	806	2.02	1.547	.000
		Total	10693	2.51	2.004	
	How often do you care about doing well in school?	NON-PBIS	6706	1.53	.685	
		SET and/or BOQ with Fidelity	3786	1.52	.674	1.00
		SET and/or BOQ w/o Fidelity	847	1.49	.713	.385
		Total	11339	1.52	.683	
	How often do you pay attention in class?	NON-PBIS	6672	1.81	.628	
		SET and/or BOQ with Fidelity	3785	1.82	.617	.749
		SET and/or BOQ w/o Fidelity	843	1.82	.641	1.00
		Total	11300	1.82	.625	
	How often do you go to class unprepared?	NON-PBIS	6682	1.6815	.72671	
		SET and/or BOQ with Fidelity	3753	1.6605	.69982	.460
		SET and/or BOQ w/o Fidelity	840	1.7250	.76068	.057
		Total	11275	1.6778	.72061	
SBd	During the last 30 days, have you been sent to the office for discipline?	NON-PBIS	6474	1.1015	.30199	
		SET and/or BOQ with Fidelity	3673	1.1045	.30601	1.00
		SET and/or BOQ w/o Fidelity	823	1.1154	.31974	.648
		Total	10970	1.1036	.30470	
	During the last 30 days, have you had in-school suspension (ISS)?	NON-PBIS	6418	1.0299	.17037	
		SET and/or BOQ with Fidelity	3635	1.0270	.16199	1.00
		SET and/or BOQ w/o Fidelity	818	1.0330	.17876	1.00
		Total	10871	1.0292	.16826	

	During the last 30 days, have you been suspended from school (out-of-school suspension-OSS)?	NON-PBIS	6438	1.0169	.12902	
		SET and/or BOQ with Fidelity	3642	1.0132	.11406	.447
		SET and/or BOQ w/o Fidelity	819	1.0208	.14266	1.00
		Total	10899	1.0160	.12534	
	During the last 30 days, did you carry a weapon such as a gun, knife, or club ON SCHOOL PROPERTY?	NON-PBIS	6655	1.0123	.11032	
		SET and/or BOQ with Fidelity	3764	1.0101	.09998	.953
		SET and/or BOQ w/o Fidelity	839	1.0191	.13685	.275
		Total	11258	1.0121	.10925	
SBb	During the last 30 days, have YOU pushed, shoved, slapped, hit or kicked someone when you weren't kidding around?	NON-PBIS	6575	1.1048	.30631	
		SET and/or BOQ with Fidelity	3740	1.0930	.29054	.173
		SET and/or BOQ w/o Fidelity	829	1.1134	.31726	1.00
		Total	11144	1.1015	.30199	
	During the last 30 days, have YOU threatened to beat someone up?	NON-PBIS	6564	1.0542	.22650	
		SET and/or BOQ with Fidelity	3731	1.0448	.20680	.108
		SET and/or BOQ w/o Fidelity	830	1.0554	.22894	1.00
		Total	11125	1.0511	.22031	
	During the last 30 days, have YOU spread mean rumors or lies about someone else?	NON-PBIS	6550	1.0913	.28805	
		SET and/or BOQ with Fidelity	3725	1.0738	.26152	.007
		SET and/or BOQ w/o Fidelity	828	1.0797	.27101	.776
		Total	11103	1.0846	.27826	
	During the last 30 days, have YOU excluded someone from friends, other students or activities?	NON-PBIS	6535	1.1314	.33791	
		SET and/or BOQ with Fidelity	3716	1.1216	.32691	.453
		SET and/or BOQ w/o Fidelity	827	1.1100	.31312	.243
		Total	11078	1.1266	.33249	
SBOa	Overall, adults at my school treat students fairly.	NON-PBIS	6482	1.72	.763	
		SET and/or BOQ with Fidelity	3658	1.69	.754	.297
		SET and/or BOQ w/o Fidelity	815	1.71	.800	1.00
		Total	10955	1.71	.763	
	Adults at my school listen to the students.	NON-PBIS	6390	1.72	.731	
		SET and/or BOQ with Fidelity	3604	1.68	.730	.078
		SET and/or BOQ w/o Fidelity	814	1.73	.749	1.00
		Total	10808	1.71	.732	
	The school rules are fair.	NON-PBIS	6475	1.82	.795	

		SET and/or BOQ with Fidelity	3639	1.80	.775	.564
		SET and/or BOQ w/o Fidelity	825	1.83	.837	1.00
		Total	10939	1.81	.792	
	At my school, teachers care about students.	NON-PBIS	6336	1.43	.617	
		SET and/or BOQ with Fidelity	3560	1.39	.586	.017
		SET and/or BOQ w/o Fidelity	815	1.44	.649	1.00
		Total	10711	1.42	.610	
	Most teachers at my school are interested in me as a person.	NON-PBIS	6441	1.83	.757	
		SET and/or BOQ with Fidelity	3623	1.78	.739	.003
		SET and/or BOQ w/o Fidelity	818	1.83	.755	1.00
		Total	10882	1.81	.751	
SBOi	During the last 30 days, have other students at school stolen or deliberately damaged your property such as clothing, books or car?	NON-PBIS	6570	1.1279	.33395	
		SET and/or BOQ with Fidelity	3738	1.1190	.32389	.579
		SET and/or BOQ w/o Fidelity	833	1.1224	.32800	1.00
		Total	11141	1.1245	.33016	
	During the last 30 days, have other students at school offered, sold, or given you an illegal drug?	NON-PBIS	6547	1.0124	.11055	
		SET and/or BOQ with Fidelity	3727	1.0075	.08636	.063
		SET and/or BOQ w/o Fidelity	830	1.0108	.10363	1.00
		Total	11104	1.0106	.10254	
	During the last 30 days, have other students at school threatened or injured you with a weapon (gun, knife, club, etc.)?	NON-PBIS	6547	1.0533	.22466	
		SET and/or BOQ with Fidelity	3719	1.0508	.21966	1.00
		SET and/or BOQ w/o Fidelity	830	1.0699	.25510	.138
		Total	11096	1.0537	.22546	
SBOb	During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your race, ethnicity or national origin?	NON-PBIS	6514	1.0861	.28057	
		SET and/or BOQ with Fidelity	3705	1.0821	.27448	1.00
		SET and/or BOQ w/o Fidelity	826	1.0908	.28750	1.00
		Total	11045	1.0851	.27905	
	During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your religion?	NON-PBIS	6471	1.0756	.26433	
		SET and/or BOQ with Fidelity	3693	1.0623	.24170	.037
		SET and/or BOQ w/o Fidelity	826	1.0787	.26942	1.00
		Total	10990	1.0713	.25740	
	During the last 30 days,	NON-PBIS	6477	1.0993	.29905	

	have other students harassed or bullied you for any of the following reasons: Your gender (being male or female)?	SET and/or BOQ with Fidelity	3691	1.0886	.28420	.234
		SET and/or BOQ w/o Fidelity	827	1.0967	.29578	1.00
		Total	10995	1.0955	.29391	
	During the last 30 days, have other students harassed or bullied you for any of the following reasons: A physical or mental disability?	NON-PBIS	6488	1.0714	.25745	
		SET and/or BOQ with Fidelity	3699	1.0633	.24346	.367
		SET and/or BOQ w/o Fidelity	820	1.0854	.27960	.413
		Total	11007	1.0697	.25462	
	During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your weight or physical appearance?	NON-PBIS	6508	1.2288	.42009	
		SET and/or BOQ with Fidelity	3699	1.2155	.41120	.360
		SET and/or BOQ w/o Fidelity	827	1.2152	.41123	1.00
		Total	11034	1.2233	.41648	
	During the last 30 days, have you been bullied through e-mail, chat rooms, instant messaging, websites or texting?	NON-PBIS	6655	1.1513	.35838	
		SET and/or BOQ with Fidelity	3765	1.1413	.34838	.503
		SET and/or BOQ w/o Fidelity	837	1.1613	.36802	1.00
		Total	11257	1.1487	.35582	
	During the last 30 days, have other students at school pushed, shoved, slapped, hit or kicked you when they weren't kidding around?	NON-PBIS	6596	1.2788	.44845	
		SET and/or BOQ with Fidelity	3737	1.2655	.44163	.432
		SET and/or BOQ w/o Fidelity	829	1.2811	.44979	1.00
		Total	11162	1.2745	.44628	
	During the last 30 days, have other students at school threatened to beat you up?	NON-PBIS	6574	1.1752	.38020	
		SET and/or BOQ with Fidelity	3727	1.1655	.37172	.639
		SET and/or BOQ w/o Fidelity	832	1.2067	.40520	.072
		Total	11133	1.1743	.37942	
	During the last 30 days, have other students at school spread mean rumors or lies about you?	NON-PBIS	6544	1.3535	.47808	
		SET and/or BOQ with Fidelity	3712	1.3467	.47599	1.00
		SET and/or BOQ w/o Fidelity	826	1.3366	.47282	1.00
		Total	11082	1.3499	.47697	
	During the last 30 days, have other students at school excluded you from friends, other students or activities?	NON-PBIS	6561	1.3368	.47267	
		SET and/or BOQ with Fidelity	3716	1.3216	.46715	.343
		SET and/or BOQ w/o Fidelity	829	1.3305	.47068	1.00
		Total	11106	1.3313	.47069	
Rg	During the last 12	NON-PBIS	6337	1.0555	.22906	

	months, have you run away from home?	SET and/or BOQ with Fidelity	3531	1.0450	.20740	.071
		SET and/or BOQ w/o Fidelity	774	1.0504	.21888	1.00
		Total	10642	1.0517	.22139	
	During the last 12 months, have you damaged or destroyed property?	NON-PBIS	6327	1.1016	.30218	
		SET and/or BOQ with Fidelity	3521	1.1079	.31033	.977
		SET and/or BOQ w/o Fidelity	771	1.0986	.29828	1.00
		Total	10619	1.1035	.30462	
	During the last 12 months, have you hit or beat up another person?	NON-PBIS	6296	1.1609	.36746	
		SET and/or BOQ with Fidelity	3511	1.1455	.35270	.132
		SET and/or BOQ w/o Fidelity	773	1.1501	.35737	1.00
		Total	10580	1.1550	.36193	
	During the last 12 months, have you taken something from a store without paying for it?	NON-PBIS	6321	1.0364	.18727	
		SET and/or BOQ with Fidelity	3523	1.0290	.16770	.160
		SET and/or BOQ w/o Fidelity	773	1.0466	.21086	.432
		Total	10617	1.0347	.18293	
	During the last 30 days, have you smoked any cigarettes?	NON-PBIS	6349	1.0082	.09014	
		SET and/or BOQ with Fidelity	3539	1.0048	.06915	.213
		SET and/or BOQ w/o Fidelity	776	1.0219	.14648	.000
		Total	10664	1.0081	.08944	
	During the last 12 months, have you had alcoholic beverages to drink such as beer, wine, wine coolers and liquor?	NON-PBIS	6311	1.0385	.19243	
		SET and/or BOQ with Fidelity	3506	1.0385	.19244	1.00
		SET and/or BOQ w/o Fidelity	769	1.0403	.19682	1.00
		Total	10586	1.0386	.19273	
Rd	During the last 12 months, have you used marijuana (pot, weed) or hashish (hash, hash oil)?	NON-PBIS	6286	1.0129	.11279	
		SET and/or BOQ with Fidelity	3490	1.0126	.11159	1.00
		SET and/or BOQ w/o Fidelity	770	1.0130	.11329	1.00
		Total	10546	1.0128	.11242	
	During the last 12 months, have you sniffed glue or huffed or inhaled the contents of aerosol spray cans or other gases to get high?	NON-PBIS	6284	1.0212	.14395	
		SET and/or BOQ with Fidelity	3495	1.0240	.15318	1.00
		SET and/or BOQ w/o Fidelity	772	1.0155	.12378	.936
		Total	10551	1.0217	.14572	
	During the last 12	NON-PBIS	6283	1.0123	.11003	

	months, have you used prescription drugs that were not prescribed for you by a doctor or that you took to get high?	SET and/or BOQ with Fidelity	3499	1.0129	.11269	1.00
		SET and/or BOQ w/o Fidelity	771	1.0078	.08793	.853
		Total	10553	1.0121	.10947	

Results from 5th Grade Responses. When analyzing data obtained from 5th graders, there was a significant effect of PBIS regarding student responses concerning their overall grades, $F(2, 10{,}690) = 35.48$, $p<.001$. Students in schools that implemented PBIS responded that their grades were significantly lower than those students who attended schools that have not implemented PBIS. However, students in schools that have implemented PBIS without fidelity responded that their grades are significantly better than those students who attended schools that have not implemented PBIS.

In the category of *School Behavior: Bullying/Harassment*, students who attended PBIS schools with fidelity reported significantly lower instances of them spreading mean rumors or lies about someone else, $F(2, 11{,}100) = 4.82$, $p<.01$. In the category of *School Behavior of Others: Adult Treatment of Students*, there was a significant effect of PBIS regarding students thoughts, and perceptions of teachers caring about students, $F(2, 10{,}708) = 4.38$, $p<.05$; and teachers taking a genuine interest in students as a person, $F(2, 10{,}879) = 5.50$, $p<.01$. Students who attended schools that implemented PBIS with fidelity responded that their teachers care more about them as a student and are more interested in them as a person when compared with responses from students who attended Non-PBIS schools. Additionally, students who attended fidelity driven PBIS schools reported lower instances of bullying/harassment due to their religion when compared with PBIS schools, $F(2, 10{,}987) = 3.50$, $p<.05$; and students who attended PBIS schools

that have not implemented it with fidelity report higher instances of students smoking cigarettes when compared to Non-PBIS schools, $F(2, 10{,}661) = 11.68$, $p<.001$.

Table 6

Results of MANOVA: Responses of 8th Grade Students from schools that implemented PBIS w/fidelity vs. schools that implemented PBIS w/o fidelity vs. Non-PBIS-trained Schools

Study Code	Items		N	Mean	Std. Deviation	Significance when compared with Non-PBIS Schools
SBc	How would you describe your grades this school year?	NON-PBIS	7456	1.89	1.028	
		SET and/or BOQ with Fidelity	3424	1.91	1.054	1.00
		SET and/or BOQ w/o Fidelity	833	1.99	1.101	.031
		Total	11713	1.90	1.041	
	How often do you care about doing well in school?	NON-PBIS	7740	1.67	.723	
		SET and/or BOQ with Fidelity	3544	1.63	.699	.016
		SET and/or BOQ w/o Fidelity	867	1.68	.726	1.00
		Total	12151	1.66	.716	
	How often do you pay attention in class?	NON-PBIS	7747	1.97	.606	
		SET and/or BOQ with Fidelity	3543	1.95	.602	.113
		SET and/or BOQ w/o Fidelity	863	1.96	.636	1.00
		Total	12153	1.96	.607	
	How often do you go to class unprepared?	NON-PBIS	7739	1.5567	.68961	
		SET and/or BOQ with Fidelity	3546	1.5745	.66694	.598
		SET and/or BOQ w/o Fidelity	860	1.5721	.69300	1.00
		Total	12145	1.5629	.68331	
SBd	During the last 30 days, have you been sent to the office for discipline?	NON-PBIS	7623	1.1349	.34159	
		SET and/or BOQ with Fidelity	3497	1.1547	.36167	.015

		SET and/or BOQ w/o Fidelity	849	1.1272	.33340	1.00
		Total	11969	1.1401	.34712	
	During the last 30 days, have you had in-school suspension (ISS)?	NON-PBIS	7602	1.0514	.22090	
		SET and/or BOQ with Fidelity	3480	1.0420	.20051	.090
		SET and/or BOQ w/o Fidelity	846	1.0390	.19373	.324
		Total	11928	1.0478	.21332	
	During the last 30 days, have you been suspended from school (out-of-school suspension-OSS)?	NON-PBIS	7608	1.0226	.14866	
		SET and/or BOQ with Fidelity	3489	1.0261	.15940	.789
		SET and/or BOQ w/o Fidelity	850	1.0224	.14792	1.00
		Total	11947	1.0236	.15182	
	During the last 30 days, did you carry a weapon such as a gun, knife, or club ON SCHOOL PROPERTY?	NON-PBIS	7715	1.0283	.16572	
		SET and/or BOQ with Fidelity	3534	1.0241	.15323	.599
		SET and/or BOQ w/o Fidelity	862	1.0244	.15426	1.00
		Total	12111	1.0268	.16137	
SBb	During the last 30 days, have YOU pushed, shoved, slapped, hit or kicked someone when you weren't kidding around?	NON-PBIS	7657	1.1109	.31400	
		SET and/or BOQ with Fidelity	3509	1.1186	.32331	.702
		SET and/or BOQ w/o Fidelity	849	1.1048	.30651	1.00
		Total	12015	1.1127	.31623	
	During the last 30 days, have YOU threatened to beat someone up?	NON-PBIS	7647	1.0965	.29531	
		SET and/or BOQ with Fidelity	3504	1.0965	.29526	1.00
		SET and/or BOQ w/o Fidelity	851	1.0705	.25615	.042
		Total	12002	1.0947	.29274	
	During the last 30 days, have YOU spread mean rumors or lies about someone else?	NON-PBIS	7634	1.0876	.28278	
		SET and/or BOQ with Fidelity	3494	1.0930	.29050	1.00
		SET and/or BOQ w/o Fidelity	848	1.0660	.24849	.105
		Total	11976	1.0877	.28283	
	During the last 30 days, have YOU excluded someone from friends, other students or activities?	NON-PBIS	7634	1.1386	.34554	
		SET and/or BOQ with Fidelity	3496	1.1267	.33270	.265
		SET and/or BOQ w/o Fidelity	847	1.1311	.33766	1.00
		Total	11977	1.1346	.34130	
SBOa	Overall, adults at my school treat students fairly.	NON-PBIS	7563	2.05	.794	
		SET and/or BOQ with Fidelity	3462	2.02	.806	.564

		SET and/or BOQ w/o Fidelity	834	2.02	.761	1.00
		Total	11859	2.04	.795	
	Adults at my school listen to the students.	NON-PBIS	7460	2.11	.765	
		SET and/or BOQ with Fidelity	3395	2.10	.777	1.00
		SET and/or BOQ w/o Fidelity	830	2.10	.749	1.00
		Total	11685	2.11	.768	
	The school rules are fair.	NON-PBIS	7557	2.12	.779	
		SET and/or BOQ with Fidelity	3465	2.17	.808	.011
		SET and/or BOQ w/o Fidelity	832	2.16	.786	.561
		Total	11854	2.14	.789	
	At my school, teachers care about students.	NON-PBIS	7395	1.89	.712	
		SET and/or BOQ with Fidelity	3391	1.85	.709	.068
		SET and/or BOQ w/o Fidelity	793	1.82	.664	.036
		Total	11579	1.87	.708	
	Most teachers at my school are interested in me as a person.	NON-PBIS	7591	2.22	.813	
		SET and/or BOQ with Fidelity	3477	2.17	.818	.029
		SET and/or BOQ w/o Fidelity	835	2.17	.796	.317
		Total	11903	2.20	.813	
SBOi	During the last 30 days, have other students at school stolen or deliberately damaged your property such as clothing, books or car?	NON-PBIS	7676	1.1572	.36405	
		SET and/or BOQ with Fidelity	3524	1.1808	.38487	.005
		SET and/or BOQ w/o Fidelity	855	1.1333	.34013	.216
		Total	12055	1.1624	.36885	
	During the last 30 days, have other students at school offered, sold, or given you an illegal drug?	NON-PBIS	7668	1.0703	.25566	
		SET and/or BOQ with Fidelity	3516	1.0748	.26311	1.00
		SET and/or BOQ w/o Fidelity	848	1.0684	.25257	1.00
		Total	12032	1.0715	.25763	
	During the last 30 days, have other students at school threatened or injured you with a weapon (gun, knife, club, etc.)?	NON-PBIS	7662	1.0596	.23684	
		SET and/or BOQ with Fidelity	3515	1.0643	.24531	1.00
		SET and/or BOQ w/o Fidelity	849	1.0518	.22181	1.00
		Total	12026	1.0605	.23833	
SBOb	During the last 30 days, have other students harassed or bullied you for any of the	NON-PBIS	7659	1.1033	.30434	
		SET and/or BOQ with Fidelity	3511	1.1225	.32788	.007

following reasons: Your race, ethnicity or national origin?	SET and/or BOQ w/o Fidelity	851	1.0940	.29201	1.00
	Total	12021	1.1082	.31068	
During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your religion?	NON-PBIS	7634	1.0773	.26706	
	SET and/or BOQ with Fidelity	3508	1.0735	.26107	1.00
	SET and/or BOQ w/o Fidelity	848	1.0637	.24432	.462
	Total	11990	1.0752	.26377	
During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your gender (being male or female)?	NON-PBIS	7612	1.0726	.25958	
	SET and/or BOQ with Fidelity	3487	1.0637	.24419	.246
	SET and/or BOQ w/o Fidelity	843	1.0510	.22015	.055
	Total	11942	1.0685	.25261	
During the last 30 days, have other students harassed or bullied you for any of the following reasons: A physical or mental disability?	NON-PBIS	7627	1.0644	.24544	
	SET and/or BOQ with Fidelity	3496	1.0609	.23923	1.00
	SET and/or BOQ w/o Fidelity	842	1.0451	.20771	.084
	Total	11965	1.0620	.24119	
During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your weight or physical appearance?	NON-PBIS	7646	1.2726	.44531	
	SET and/or BOQ with Fidelity	3501	1.2879	.45286	.274
	SET and/or BOQ w/o Fidelity	850	1.2294	.42070	.002
	Total	11997	1.2740	.44602	
During the last 30 days, have you been bullied through e-mail, chat rooms, instant messaging, websites or texting?	NON-PBIS	7686	1.1643	.37059	
	SET and/or BOQ with Fidelity	3530	1.1518	.35892	.281
	SET and/or BOQ w/o Fidelity	860	1.1500	.35728	.830
	Total	12076	1.1597	.36630	
During the last 30 days, have other students at school pushed, shoved, slapped, hit or kicked you when they weren't kidding around?	NON-PBIS	7645	1.1859	.38903	
	SET and/or BOQ with Fidelity	3510	1.1886	.39125	1.00
	SET and/or BOQ w/o Fidelity	849	1.1578	.36480	.137
	Total	12004	1.1847	.38806	
During the last 30 days, have other students at school threatened to beat you up?	NON-PBIS	7630	1.1480	.35509	
	SET and/or BOQ with Fidelity	3495	1.1514	.35845	1.00
	SET and/or BOQ w/o Fidelity	850	1.1329	.33971	.725
	Total	11975	1.1479	.35501	
During the last 30 days, have other students at school spread mean rumors or lies	NON-PBIS	7597	1.3010	.45874	
	SET and/or BOQ with Fidelity	3488	1.2896	.45363	.655

	about you?	SET and/or BOQ w/o Fidelity	841	1.2592	.43846	.035
		Total	11926	1.2947	.45594	
	During the last 30 days, have other students at school excluded you from friends, other students or activities?	NON-PBIS	7642	1.2821	.45006	
		SET and/or BOQ with Fidelity	3506	1.2698	.44393	.533
		SET and/or BOQ w/o Fidelity	851	1.2597	.43872	.496
		Total	11999	1.2769	.44751	
Rg	During the last 12 months, have you run away from home?	NON-PBIS	6979	1.0673	.25064	
		SET and/or BOQ with Fidelity	3230	1.0724	.25926	1.00
		SET and/or BOQ w/o Fidelity	790	1.0532	.22450	.399
		Total	10999	1.0678	.25146	
	During the last 12 months, have you damaged or destroyed property?	NON-PBIS	6971	1.1389	.34583	
		SET and/or BOQ with Fidelity	3219	1.1600	.36665	.013
		SET and/or BOQ w/o Fidelity	787	1.0940	.29205	.002
		Total	10977	1.1418	.34890	
	During the last 12 months, have you hit or beat up another person?	NON-PBIS	6946	1.1257	.33152	
		SET and/or BOQ with Fidelity	3203	1.1283	.33449	1.00
		SET and/or BOQ w/o Fidelity	785	1.1045	.30605	.265
		Total	10934	1.1249	.33066	
	During the last 12 months, have you taken something from a store without paying for it?	NON-PBIS	6968	1.0861	.28054	
		SET and/or BOQ with Fidelity	3216	1.0933	.29087	.690
		SET and/or BOQ w/o Fidelity	788	1.0558	.22975	.012
		Total	10972	1.0860	.28043	

**** The items for the category of *Risk Behavior: Drugs and Alcohol* were unable to be analyzed due to lack of respondents.

Results from 8th Grade Responses. When analyzing data obtained from 8th graders, there was a significant effect of PBIS on students responses when describing their current grades, $F(2, 11{,}710) = 3.29$, $p < .05$; and when asked to disclose how often they care about doing well in school, $F(2, 12{,}148) = 4.26$, $p < .05$. Students who attended schools that implemented PBIS without fidelity reported worse grades when compared to students who attended Non-PBIS schools. Students who attended schools that

implemented PBIS with fidelity reported that they cared more about doing well in school than those students who attended Non-PBIS schools.

There was a significant effect of PBIS on students reporting the number of instances that they have been sent to the office for discipline, $F(2, 11{,}966) = 4.55$, $p<.05$. Students who attended schools that implemented PBIS with fidelity reported more instances of being sent to the office related to discipline measures when compared to students who attended Non-PBIS schools. Students who attended schools that implemented PBIS without fidelity reported less instances of them threatening to beat up another student, $F(2, 11{,}999) = 3.12$, $p<.05$ when compared to student responses from Non-PBIS schools. In the category of *School Behavior of Others: Adult Treatment of Students* there was a significant effect of PBIS on students' thoughts, and perceptions of whether the school rules are fair, $F(2, 11{,}851) = 4.59$, $p=.01$; and if teachers are interested in them as people, $F(2, 11{,}900) = 4.05$, $p<.05$. Students from schools that have implemented PBIS with fidelity report that school rules are not as fair, but that teachers are more interested in them as people, when compared with Non-PBIS schools. Students who attend schools that have implemented PBIS without fidelity report that they feel as if teachers care more about them than students who attend Non-PBIS schools, $F(2, 11{,}576) = 4.89$, $p<.01$.

In the category of *School Behavior of Others: Student Illegal Behavior* and *School Behavior of Others: Bullying/Harassment*, there was a significant effect of PBIS on students reporting frequency of other students deliberately stealing or damaging their property, $F(2, 12{,}052) = 7.78$, $p<.001$; and being bullied/harassed because of their

race/ethnicity/national origin, $F(2, 12{,}018) = 5.56$, $p<.01$. On both items, students attending PBIS schools with fidelity report more instances of vandalism and bullying/harassment. Additionally, students from schools that have *not* implemented PBIS with fidelity, report less instances of being bullied due to their weight/physical appearance, $F(2, 11{,}994) = 6.0$, $p<.01$; less instances of other students spreading rumors and/or lies about them, $F(2, 11{,}923) = 3.50$, $p<.05$; and less instances of the student stealing from a store, $F(2, 10{,}969) = 5.65$, $p<.01$, when compared with student responses from Non-PBIS schools. In the category of *Risk Behavior: General*, there was a significant effect of PBIS on reporting the frequency of the student destruction of property, $F(2, 10{,}974) = 12.02$, $p<.001$. Mixed results show that students who attended PBIS schools that have implemented PBIS with fidelity reported more instances of destruction of property and students who attended PBIS schools without fidelity reported less instances of destruction of property when compared with responses of students who were enrolled in Non-PBIS schools.

Table 7

Results of MANOVA: Responses of 9th Grade Students from schools that implemented PBIS w/fidelity vs. schools that implemented PBIS w/o fidelity vs. Non-PBIS-trained Schools

Study Code			N	Mean	Std. Deviation	Significance when compared with Non-PBIS schools
SBc	How would you describe	NON-PBIS	5009	1.97	1.045	

	your grades this school year?	SET and/or BOQ with Fidelity	1332	1.94	1.007	1.00
		SET and/or BOQ w/o Fidelity	1325	2.14	1.138	.000
		Total	7666	1.99	1.057	
	How often do you care about doing well in school?	NON-PBIS	5160	1.66	.725	
		SET and/or BOQ with Fidelity	1375	1.65	.722	1.00
		SET and/or BOQ w/o Fidelity	1369	1.67	.727	1.00
		Total	7904	1.66	.725	
	How often do you pay attention in class?	NON-PBIS	5157	2.01	.612	
		SET and/or BOQ with Fidelity	1373	2.04	.582	.168
		SET and/or BOQ w/o Fidelity	1368	2.00	.601	1.00
		Total	7898	2.01	.605	
	How often do you go to class unprepared?	NON-PBIS	5147	1.5537	.69476	
		SET and/or BOQ with Fidelity	1377	1.5323	.68243	.943
		SET and/or BOQ w/o Fidelity	1363	1.6082	.74245	.032
		Total	7887	1.5594	.70143	
SBd	During the last 30 days, have you been sent to the office for discipline?	NON-PBIS	5104	1.0978	.29703	
		SET and/or BOQ with Fidelity	1365	1.1289	.33525	.003
		SET and/or BOQ w/o Fidelity	1355	1.1077	.31018	.859
		Total	7824	1.1049	.30649	
	During the last 30 days, have you had in-school suspension (ISS)?	NON-PBIS	5096	1.0377	.19043	
		SET and/or BOQ with Fidelity	1361	1.0323	.17694	1.00
		SET and/or BOQ w/o Fidelity	1350	1.0659	.24824	.000
		Total	7807	1.0416	.19975	
	During the last 30 days, have you been suspended from school (out-of-school suspension-OSS)?	NON-PBIS	5093	1.0200	.14011	
		SET and/or BOQ with Fidelity	1362	1.0228	.14919	1.00
		SET and/or BOQ w/o Fidelity	1355	1.0280	.16516	.219
		Total	7810	1.0219	.14635	
	During the last 30 days, did you carry a weapon such as a gun, knife, or club ON SCHOOL PROPERTY?	NON-PBIS	5122	1.0426	.20189	
		SET and/or BOQ with Fidelity	1370	1.0285	.16636	.054
		SET and/or BOQ w/o Fidelity	1360	1.0419	.20046	1.00
		Total	7852	1.0400	.19595	
SBb	During the last 30 days,	NON-PBIS	5088	1.0987	.29824	

	have YOU pushed, shoved, slapped, hit or kicked someone when you weren't kidding around?	SET and/or BOQ with Fidelity	1361	1.1029	.30389	1.00
		SET and/or BOQ w/o Fidelity	1345	1.0989	.29862	1.00
		Total	7794	1.0994	.29927	
	During the last 30 days, have YOU threatened to beat someone up?	NON-PBIS	5078	1.0994	.29929	
		SET and/or BOQ with Fidelity	1356	1.1173	.32184	.158
		SET and/or BOQ w/o Fidelity	1344	1.0878	.28311	.620
		Total	7778	1.1005	.30074	
	During the last 30 days, have YOU spread mean rumors or lies about someone else?	NON-PBIS	5068	1.0775	.26748	
		SET and/or BOQ with Fidelity	1355	1.0856	.27989	.974
		SET and/or BOQ w/o Fidelity	1343	1.0700	.25523	1.00
		Total	7766	1.0776	.26763	
	During the last 30 days, have YOU excluded someone from friends, other students or activities?	NON-PBIS	5074	1.1141	.31798	
		SET and/or BOQ with Fidelity	1353	1.1138	.31771	1.00
		SET and/or BOQ w/o Fidelity	1340	1.1007	.30110	.502
		Total	7767	1.1118	.31508	
SBOa	Overall, adults at my school treat students fairly.	NON-PBIS	5058	1.99	.740	
		SET and/or BOQ with Fidelity	1353	2.02	.751	.429
		SET and/or BOQ w/o Fidelity	1349	2.06	.787	.008
		Total	7760	2.01	.751	
	Adults at my school listen to the students.	NON-PBIS	4997	2.10	.734	
		SET and/or BOQ with Fidelity	1338	2.13	.725	.709
		SET and/or BOQ w/o Fidelity	1326	2.15	.759	.101
		Total	7661	2.11	.737	
	The school rules are fair.	NON-PBIS	5057	2.07	.747	
		SET and/or BOQ with Fidelity	1358	2.14	.738	.005
		SET and/or BOQ w/o Fidelity	1337	2.10	.760	.490
		Total	7752	2.09	.748	
	At my school, teachers care about students.	NON-PBIS	4966	1.91	.695	
		SET and/or BOQ with Fidelity	1338	1.93	.678	1.00
		SET and/or BOQ w/o Fidelity	1320	1.97	.719	.014
		Total	7624	1.92	.696	
	Most teachers at my school	NON-PBIS	5031	2.24	.784	

	are interested in me as a person.	SET and/or BOQ with Fidelity	1360	2.25	.784	1.00
		SET and/or BOQ w/o Fidelity	1341	2.28	.825	.303
		Total	7732	2.25	.791	
SBOi	During the last 30 days, have other students at school stolen or deliberately damaged your property such as clothing, books or car?	NON-PBIS	5103	1.1203	.32537	
		SET and/or BOQ with Fidelity	1367	1.1295	.33585	1.00
		SET and/or BOQ w/o Fidelity	1351	1.1355	.34234	.403
		Total	7821	1.1245	.33021	
	During the last 30 days, have other students at school offered, sold, or given you an illegal drug?	NON-PBIS	5093	1.1298	.33610	
		SET and/or BOQ with Fidelity	1365	1.1106	.31378	.179
		SET and/or BOQ w/o Fidelity	1351	1.1377	.34469	1.00
		Total	7809	1.1278	.33389	
	During the last 30 days, have other students at school threatened or injured you with a weapon (gun, knife, club, etc.)?	NON-PBIS	5086	1.0564	.23077	
		SET and/or BOQ with Fidelity	1366	1.0512	.22058	1.00
		SET and/or BOQ w/o Fidelity	1352	1.0614	.24013	1.00
		Total	7804	1.0564	.23067	
SBOb	During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your race, ethnicity or national origin?	NON-PBIS	5100	1.0943	.29229	
		SET and/or BOQ with Fidelity	1372	1.1166	.32108	.047
		SET and/or BOQ w/o Fidelity	1356	1.1217	.32704	.010
		Total	7828	1.1030	.30393	
	During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your religion?	NON-PBIS	5083	1.0755	.26430	
		SET and/or BOQ with Fidelity	1367	1.0761	.26522	1.00
		SET and/or BOQ w/o Fidelity	1351	1.0896	.28566	.264
		Total	7801	1.0781	.26829	
	During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your gender (being male or female)?	NON-PBIS	5063	1.0640	.24477	
		SET and/or BOQ with Fidelity	1360	1.0632	.24348	1.00
		SET and/or BOQ w/o Fidelity	1349	1.0801	.27149	.107
		Total	7772	1.0666	.24943	
	During the last 30 days, have other students harassed or bullied you for any of the following reasons: A physical or mental disability?	NON-PBIS	5067	1.0604	.23823	
		SET and/or BOQ with Fidelity	1363	1.0572	.23236	1.00
		SET and/or BOQ w/o Fidelity	1350	1.0563	.23058	1.00
		Total	7780	1.0591	.23588	
	During the last 30 days,	NON-PBIS	5072	1.2407	.42757	

	have other students harassed or bullied you for any of the following reasons: Your weight or physical appearance?	SET and/or BOQ with Fidelity	1368	1.2588	.43812	.502
		SET and/or BOQ w/o Fidelity	1354	1.2326	.42267	1.00
		Total	7794	1.2425	.42862	
	During the last 30 days, have you been bullied through e-mail, chat rooms, instant messaging, websites or texting?	NON-PBIS	5116	1.1441	.35118	
		SET and/or BOQ with Fidelity	1372	1.1458	.35301	1.00
		SET and/or BOQ w/o Fidelity	1357	1.1400	.34713	1.00
		Total	7845	1.1437	.35077	
	During the last 30 days, have other students at school pushed, shoved, slapped, hit or kicked you when they weren't kidding around?	NON-PBIS	5094	1.1327	.33929	
		SET and/or BOQ with Fidelity	1368	1.1535	.36061	.144
		SET and/or BOQ w/o Fidelity	1355	1.1454	.35262	.689
		Total	7817	1.1385	.34549	
	During the last 30 days, have other students at school threatened to beat you up?	NON-PBIS	5087	1.1248	.33056	
		SET and/or BOQ with Fidelity	1367	1.1156	.31984	1.00
		SET and/or BOQ w/o Fidelity	1349	1.1253	.33116	1.00
		Total	7803	1.1233	.32879	
	During the last 30 days, have other students at school spread mean rumors or lies about you?	NON-PBIS	5056	1.2575	.43731	
		SET and/or BOQ with Fidelity	1362	1.2775	.44795	.402
		SET and/or BOQ w/o Fidelity	1344	1.2403	.42744	.602
		Total	7762	1.2581	.43759	
	During the last 30 days, have other students at school excluded you from friends, other students or activities?	NON-PBIS	5070	1.2286	.41997	
		SET and/or BOQ with Fidelity	1360	1.2221	.41578	1.00
		SET and/or BOQ w/o Fidelity	1348	1.2226	.41611	1.00
		Total	7778	1.2264	.41853	
	During the last 12 months, have you run away from home?	NON-PBIS	4816	1.0760	.26502	
		SET and/or BOQ with Fidelity	1298	1.0778	.26798	1.00
		SET and/or BOQ w/o Fidelity	1278	1.0853	.27942	.812
		Total	7392	1.0779	.26807	
Rg	During the last 12 months, have you damaged or destroyed property?	NON-PBIS	4809	1.1408	.34783	
		SET and/or BOQ with Fidelity	1301	1.1407	.34781	1.00
		SET and/or BOQ w/o Fidelity	1274	1.1397	.34683	1.00
		Total	7384	1.1406	.34761	
	During the last 12 months,	NON-PBIS	4800	1.1196	.32451	

	have you hit or beat up another person?	SET and/or BOQ with Fidelity	1294	1.1190	.32393	1.00
		SET and/or BOQ w/o Fidelity	1267	1.1200	.32505	1.00
		Total	7361	1.1195	.32446	
	During the last 12 months, have you taken something from a store without paying for it?	NON-PBIS	4804	1.1082	.31072	
		SET and/or BOQ with Fidelity	1297	1.1280	.33420	144
		SET and/or BOQ w/o Fidelity	1271	1.1267	.33274	.201
		Total	7372	1.1149	.31892	

**** The items for the category of *Risk Behavior: Drugs and Alcohol* were unable to be analyzed due to lack of respondents.

Results from 9th Grade Responses. When analyzing data obtained from 9th graders, there was a significant effect of PBIS on student report of their grades, $F(2, 7{,}663) = 16.02$, $p<.001$; and how often they do go class unprepared, $F(2, 7{,}884) = 4.50$, $p<.05$. For both of these items, students who attended schools that implemented PBIS without fidelity, reported lower grades and higher number of instances when they go to class unprepared when compared with responses given by students who attended Non-PBIS schools. There was a significant effect of PBIS in the category of *School Behavior: Discipline.* Students who attended schools that have implemented PBIS with fidelity reported more instances of being sent to the office for discipline, $F(2, 7{,}821) = 5.65$, $p< .01$, when compared with students who attended Non-PBIS schools. Students who attended school that have implemented without fidelity report higher number of instances of serving in school suspensions, $F(2, 7{,}804) = 12.50$, $p<.001$, when compared with students attending Non-PBIS schools.

Students who attend schools that have implemented PBIS with fidelity report that they feel school rules are less fair, $F(2, 7{,}749) = 5.21$, $p<.01$, when compared with

student responses from Non-PBIS schools. Students who attended schools that have implemented PBIS without fidelity report that they feel that teachers do not treat students as fairly, $F(2, 7{,}757) = 4.90$, $p<.01$; and that teachers care less about them as students, $F(2, 7{,}621) = 4.04$, $p<.05$, when compared with student responses from Non-PBIS schools.

Students who attended schools that have implemented PBIS both with and without fidelity report higher instances of being bullied/harassed due to their race, ethnicity or national origin, $F(2, 7825) = 6.03$, $p<.01$, when compared with student responses from Non-PBIS schools.

Table 8

Results of MANOVA: Responses of 11th Grade Students from schools that implemented PBIS w/fidelity vs. schools that implemented PBIS w/o fidelity vs. Non-PBIS-trained Schools

Study Code	Items		N	Mean	Std. Deviation	Significance when compared with Non-PBIS schools
SBc	How would you describe your grades this school year?	NON-PBIS	4847	1.95	.977	
		SET and/or BOQ with Fidelity	789	2.02	.923	.219
		SET and/or BOQ w/o Fidelity	1126	2.13	1.011	.000
		Total	6762	1.99	.979	
	How often do you care about doing well in school?	NON-PBIS	4966	1.68	.724	
		SET and/or BOQ with Fidelity	788	1.77	.721	.004
		SET and/or BOQ w/o Fidelity	1158	1.77	.754	.001
		Total	6912	1.71	.730	

	How often do you pay attention in class?	NON-PBIS	4969	1.99	.591	
		SET and/or BOQ with Fidelity	788	2.09	.603	.000
		SET and/or BOQ w/o Fidelity	1158	2.06	.597	.003
		Total	6915	2.01	.594	
	How often do you go to class unprepared?	NON-PBIS	4960	1.5738	.69000	
		SET and/or BOQ with Fidelity	788	1.5584	.67287	1.00
		SET and/or BOQ w/o Fidelity	1156	1.6721	.72955	.000
		Total	6904	1.5885	.69579	
SBd	During the last 30 days, have you been sent to the office for discipline?	NON-PBIS	4926	1.0702	.25558	
		SET and/or BOQ with Fidelity	787	1.1004	.30070	.009
		SET and/or BOQ w/o Fidelity	1150	1.0870	.28189	.164
		Total	6863	1.0765	.26581	
	During the last 30 days, have you had in-school suspension (ISS)?	NON-PBIS	4921	1.0289	.16742	
		SET and/or BOQ with Fidelity	786	1.0216	.14556	.896
		SET and/or BOQ w/o Fidelity	1149	1.0653	.24712	.000
		Total	6856	1.0341	.18158	
	During the last 30 days, have you been suspended from school (out-of-school suspension-OSS)?	NON-PBIS	4921	1.0185	.13474	
		SET and/or BOQ with Fidelity	785	1.0153	.12277	1.00
		SET and/or BOQ w/o Fidelity	1146	1.0183	.13418	1.00
		Total	6852	1.0181	.13331	
	During the last 30 days, did you carry a weapon such as a gun, knife, or club ON SCHOOL PROPERTY?	NON-PBIS	4950	1.0455	.20832	
		SET and/or BOQ with Fidelity	786	1.0649	.24648	.053
		SET and/or BOQ w/o Fidelity	1150	1.0461	.20976	1.00
		Total	6886	1.0478	.21331	
SBb	During the last 30 days, have YOU pushed, shoved, slapped, hit or kicked someone when you weren't kidding around?	NON-PBIS	4909	1.0623	.24179	
		SET and/or BOQ with Fidelity	782	1.0652	.24707	1.00
		SET and/or BOQ w/o Fidelity	1143	1.0560	.23001	1.00
		Total	6834	1.0616	.24045	
	During the last 30 days, have YOU threatened to beat someone up?	NON-PBIS	4898	1.0692	.25384	
		SET and/or BOQ with Fidelity	779	1.0809	.27282	.709
		SET and/or BOQ w/o Fidelity	1143	1.0665	.24925	1.00
		Total	6820	1.0701	.25531	
	During the last 30 days, have	NON-PBIS	4895	1.0635	.24395	

	YOU spread mean rumors or lies about someone else?	SET and/or BOQ with Fidelity	779	1.0911	.28800	.013
		SET and/or BOQ w/o Fidelity	1142	1.0665	.24935	1.00
		Total	6816	1.0672	.25038	
	During the last 30 days, have YOU excluded someone from friends, other students or activities?	NON-PBIS	4898	1.0943	.29231	
		SET and/or BOQ with Fidelity	780	1.1192	.32427	.088
		SET and/or BOQ w/o Fidelity	1142	1.0946	.29275	1.00
		Total	6820	1.0972	.29627	
SBOa	Overall, adults at my school treat students fairly.	NON-PBIS	4879	1.96	.727	
		SET and/or BOQ with Fidelity	782	2.04	.701	.008
		SET and/or BOQ w/o Fidelity	1146	2.05	.733	.000
		Total	6807	1.99	.726	
	Adults at my school listen to the students.	NON-PBIS	4846	2.04	.707	
		SET and/or BOQ with Fidelity	778	2.15	.684	.000
		SET and/or BOQ w/o Fidelity	1128	2.15	.726	.000
		Total	6752	2.07	.709	
	The school rules are fair.	NON-PBIS	4878	2.10	.762	
		SET and/or BOQ with Fidelity	781	2.19	.709	.006
		SET and/or BOQ w/o Fidelity	1145	2.28	.797	.000
		Total	6804	2.14	.765	
	At my school, teachers care about students.	NON-PBIS	4837	1.86	.665	
		SET and/or BOQ with Fidelity	782	1.93	.639	.018
		SET and/or BOQ w/o Fidelity	1129	1.98	.660	.000
		Total	6748	1.89	.662	
	Most teachers at my school are interested in me as a person.	NON-PBIS	4882	2.15	.775	
		SET and/or BOQ with Fidelity	783	2.29	.763	.000
		SET and/or BOQ w/o Fidelity	1141	2.27	.769	.000
		Total	6806	2.19	.775	
SBOi	During the last 30 days, have other students at school stolen or deliberately damaged your property such as clothing, books or car?	NON-PBIS	4930	1.0943	.29230	
		SET and/or BOQ with Fidelity	786	1.1094	.31236	.555
		SET and/or BOQ w/o Fidelity	1149	1.1018	.30255	1.00
		Total	6865	1.0973	.29639	
	During the last 30 days,	NON-PBIS	4921	1.1557	.36257	

	have other students at school offered, sold, or given you an illegal drug?	SET and/or BOQ with Fidelity	786	1.1438	.35108	1.00
		SET and/or BOQ w/o Fidelity	1149	1.1480	.35521	1.00
		Total	6856	1.1530	.36002	
	During the last 30 days, have other students at school threatened or injured you with a weapon (gun, knife, club, etc.)?	NON-PBIS	4925	1.0337	.18049	
		SET and/or BOQ with Fidelity	784	1.0293	.16886	1.00
		SET and/or BOQ w/o Fidelity	1150	1.0391	.19399	1.00
		Total	6859	1.0341	.18154	
	During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your race, ethnicity or national origin?	NON-PBIS	4914	1.0822	.27472	
		SET and/or BOQ with Fidelity	785	1.0803	.27186	1.00
		SET and/or BOQ w/o Fidelity	1145	1.0934	.29119	.651
		Total	6844	1.0839	.27721	
	During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your religion?	NON-PBIS	4905	1.0624	.24188	
		SET and/or BOQ with Fidelity	785	1.0586	.23502	1.00
		SET and/or BOQ w/o Fidelity	1143	1.0656	.24772	1.00
		Total	6833	1.0625	.24206	
	During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your gender (being male or female)?	NON-PBIS	4888	1.0559	.22966	
		SET and/or BOQ with Fidelity	781	1.0589	.23559	1.00
		SET and/or BOQ w/o Fidelity	1140	1.0535	.22514	1.00
		Total	6809	1.0558	.22957	
SBOb	During the last 30 days, have other students harassed or bullied you for any of the following reasons: A physical or mental disability?	NON-PBIS	4896	1.0421	.20078	
		SET and/or BOQ with Fidelity	780	1.0564	.23086	.206
		SET and/or BOQ w/o Fidelity	1142	1.0412	.19874	1.00
		Total	6818	1.0436	.20413	
	During the last 30 days, have other students harassed or bullied you for any of the following reasons: Your weight or physical appearance?	NON-PBIS	4901	1.1765	.38128	
		SET and/or BOQ with Fidelity	780	1.1923	.39437	.853
		SET and/or BOQ w/o Fidelity	1145	1.1782	.38282	1.00
		Total	6826	1.1786	.38303	
	During the last 30 days, have you been bullied through e-mail, chat rooms, instant messaging, websites or texting?	NON-PBIS	4933	1.1133	.31701	
		SET and/or BOQ with Fidelity	784	1.1556	.36272	.002
		SET and/or BOQ w/o Fidelity	1145	1.1109	.31417	1.00
		Total	6862	1.1177	.32234	
	During the last 30 days,	NON-PBIS	4910	1.0804	.27201	

	have other students at school pushed, shoved, slapped, hit or kicked you when they weren't kidding around?	SET and/or BOQ with Fidelity	783	1.0817	.27414	1.00
		SET and/or BOQ w/o Fidelity	1144	1.0953	.29373	.305
		Total	6837	1.0831	.27602	
	During the last 30 days, have other students at school threatened to beat you up?	NON-PBIS	4897	1.0664	.24895	
		SET and/or BOQ with Fidelity	783	1.0779	.26819	.728
		SET and/or BOQ w/o Fidelity	1144	1.0857	.27999	.066
		Total	6824	1.0709	.25672	
	During the last 30 days, have other students at school spread mean rumors or lies about you?	NON-PBIS	4884	1.2150	.41086	
		SET and/or BOQ with Fidelity	781	1.2638	.44096	.007
		SET and/or BOQ w/o Fidelity	1143	1.2021	.40174	1.00
		Total	6808	1.2184	.41320	
	During the last 30 days, have other students at school excluded you from friends, other students or activities?	NON-PBIS	4898	1.1966	.39748	
		SET and/or BOQ with Fidelity	782	1.2430	.42915	.008
		SET and/or BOQ w/o Fidelity	1141	1.1937	.39536	1.00
		Total	6821	1.2014	.40110	
Rg	During the last 12 months, have you run away from home?	NON-PBIS	4759	1.0653	.24717	
		SET and/or BOQ with Fidelity	762	1.0761	.26536	.803
		SET and/or BOQ w/o Fidelity	1102	1.0635	.24401	1.00
		Total	6623	1.0663	.24880	
	During the last 12 months, have you damaged or destroyed property?	NON-PBIS	4749	1.1356	.34241	
		SET and/or BOQ with Fidelity	762	1.1549	.36200	.462
		SET and/or BOQ w/o Fidelity	1102	1.1425	.34969	1.00
		Total	6613	1.1390	.34594	
	During the last 12 months, have you hit or beat up another person?	NON-PBIS	4738	1.0912	.28789	
		SET and/or BOQ with Fidelity	760	1.0974	.29665	1.00
		SET and/or BOQ w/o Fidelity	1100	1.0827	.27559	1.00
		Total	6598	1.0905	.28689	
	During the last 12 months, have you taken something from a store without paying for it?	NON-PBIS	4748	1.1321	.33859	
		SET and/or BOQ with Fidelity	761	1.1432	.35054	1.00
		SET and/or BOQ w/o Fidelity	1101	1.1326	.33930	1.00
		Total	6610	1.1334	.34007	

**** The items for the category of *Risk Behavior: Drugs and Alcohol* were unable to be analyzed due to lack of respondents.

Results from 11th Grade Responses. When analyzing data obtained from 11th graders, significant results were found for every item in the category of *School Behavior: Commitment.* Students who attended both schools that have implemented PBIS with fidelity and without fidelity report that they care less about doing well in school, $F(2, 6909) = 9.74$, $p<.001$; and pay less attention in class, $F(2, 6{,}912) = 13.26$, $p<.001$, when compared with students who attend Non-PBIS schools. Students who attended schools that have not implemented PBIS with fidelity report that their grades are lower, $F(2, 6{,}759) = 15.61$, $p<.001$ and also that they go to class unprepared more often, $F(2, 6{,}901) = 10.23$, $p<.001$, than students who attend Non-PBIS schools.

In the category of *School Behavior: Discipline* students that attended schools that have implemented PBIS with fidelity report that they have been sent to the office for discipline more frequently in the last 30 days, $F(2, 6{,}860) = 5.44$, $p<.01$ than students who attend Non-PBIS schools. Responses from students who attend schools that have implemented PBIS without fidelity report that they have had more in-school suspension in the last 30 days, $F(2, 6{,}853) = 20.96$, $p<.001$ than students who attend Non-PBIS schools.

There was a significant effect of PBIS in the category of *School Behavior of Others: Adult Treatment of Students.* Students who attended school that implemented PBIS with and without fidelity reported that they felt that adults do not treat them as fairly, $F(2, 6{,}804) = 10.61$, $p<.001$; that adults at their school do not listen to the students,

F(2, 6,749) = 14.98, *p*<.001; the school rules are not as fair, *F*(2, 6,801) = 28.94, *p*<.001; that teachers do not care as much about their students, F(2, 6,745) = 17.72, p<.001; and that teachers are not as interested in them as a person, *F*(2, 6,803) = 17.96, *p*<.001, when compared with students responses who attended Non-PBIS schools.

There was also a significant effect of PBIS in the category of *School Behavior of Others: Bullying/Harassment.* Students who attended schools that implemented PBIS with fidelity reported higher number of instances of them being bullied through e-mail, chat rooms, instant messaging, websites or texting, *F*(2, 6,859) = 6.14, *p*<.01; higher number of instances of other students spreading mean rumors or lies about them, *F*(2, 6,805) = 5.77, *p*<.01; and higher number of instances of being excluded from friends, other students or activities, *F*(2, 6,818) = 4.76, *p*<.01, when compared with students who attended Non-PBIS schools. Additionally, students from schools that implemented PBIS with fidelity reported more instances of them spreading mean rumors or lies about another individual, *F*(2, 6,813) = 4.09, *p*<.05, when compared with student responses from Non-PBIS schools.

Chapter 5: Discussion

The overall purpose of this study was to investigate the self-reported perceptions, feelings, and behaviors of students in schools that have implemented PBIS with fidelity and compare those responses with students who attended schools that have not been trained to implement PBIS. More specifically, it was hypothesized that students who attended schools implementing PBIS with high fidelity would report more positive perceptions and feelings and fewer instances of problem behaviors. This hypothesis was partially supported and results were mixed, depending on individual items. The study revealed some promising results and also some areas in which results did not support the positive impacts of PBIS within the cross-sectional design utilized for comparisons.

Overall, when comparing schools that have implemented PBIS with fidelity and schools that have not implemented PBIS for all grade levels combined, some items remained consistent with the researcher's hypothesis. The study reported that students who attend schools that have implemented PBIS with fidelity responded that they care more about doing well in school. Although these students reported lower grades, previous research has only pointed towards increased achievement by looking at overall state-wide and standardized assessments (Horner et al., 2009; Lassen, et al., 2006, Muscott et al, 2008, Simonsen et al., 2012) and not individual grades which may be less sensitive to change from year to year. Further, grades in the present study were self-reported and may not perfectly reflect actual academic performance.

Students at schools implementing PBIS with fidelity reported significantly lower instances of bringing a weapon to school, significantly fewer instances of other students at school offering, selling, or giving them illegal drugs in schools, and significantly lower instances of students reporting that they have taken something from a store without paying for it. This remains consistent with previous research by Klein, Cornell and Konold (2012) which showed that students who felt comfortable talking to teachers when faced with problems due to a supportive and positive school climate were less likely to partake in risk behaviors (partake in alcohol and drugs and carry weapons). One of the most promising results from the study was the finding that, across all combined grades, students who attended schools that have implemented PBIS with fidelity felt that they were treated more fairly, that they were listened to more, that they were more cared about, and that adults showed more interest in them as students and people than did students in schools that were not trained to implement PBIS.

Although some findings supportive of PBIS have been summarized, the findings across all items and grade levels would be best characterized as "mixed." Some items were most positive for schools implementing PBIS with fidelity, some items were most positive for non-PBIS-trained schools, and, for some items, schools trained in PBIS but not implementing with fidelity were found to have the most positive results.

Results became notably muddled when responses were broken down by grade level. We found that positive thoughts, feelings, and perceptions in PBIS schools were more indicative of the responses by younger grade levels (5^{th} and 8^{th} grade) and were not consistent with older grade levels (9^{th} and 11^{th}). Based on the school's SET and BoQ

scores, the researchers were able to determine that the pillars of PBIS (i.e. data collection system, PBIS team, positively stated expectations, system of positive reinforcement) were adequately in place throughout schools that were categorized as having implemented PBIS with fidelity. However, it is possible that the day-to-day PBIS practices that teachers are expected to implement may not be as consistent in high schools implementing PBIS as it is in elementary schools implementing PBIS. It is possible that larger enrollment populations in high schools mean that teachers are unable to spend large amounts of time with individual students in order to form positive bonds (Isakson & Jarvis, 1999). Additionally, the size of the school and campus at the high school level may hinder the ability for teachers and students to interact to a degree that would likely lead students to feel connected to their school and teachers (Renihan & Renihan, 1995). These factors may ultimately seem too burdensome for teachers and staff to maintain the core principles of PBIS, with fidelity, on a daily basis despite school-wide implementation fidelity scores.

In general, students reported that they are sent to the office more often for discipline related issues in schools that implement PBIS with fidelity than in schools not trained to implement PBIS. However, this does not give any insight to the seriousness of the infraction performed by the student. The higher level of instances may be due to the school's attempt to provide preventative measures taken by teachers and administrators in order to dispel future major infractions, such as bringing weapons onto school property and selling/using illegal substances, which were significantly *less* in schools that implemented PBIS with fidelity. Students who attended schools that implemented PBIS

with fidelity reported higher levels of vandalism than Non-PBIS schools. When broken down by grade level, it appears that these behaviors are concentrated within 8th grade.

The most concerning results of the study report that overall, students who attend schools that have implemented PBIS with fidelity report higher instances of being harassed or bullied for their race, ethnicity or national origin; higher number of instances of being threatened to be beaten up; and higher number of instances of students spreading mean rumors or lies about them. When looking across grade level data, it appears as if a majority of these behaviors are happening in the older grades (i.e. 8th, 9th and 11th) and are not reported to a significant degree in elementary schools. Schools have begun to take a stance against bullying and have begun numerous anti-bullying campaigns and interventions, (Leff, 2007). A recent study conducted by Nese and colleagues (2014) aimed to assess the effects of an anti-bullying intervention within 3 different PBIS middle schools. Students were asked to give feedback concerning their school climate before the intervention began and also after the intervention had been implemented with fidelity. Although results indicated that observable instances of bullying decreased across all three schools, pre- and post-measures of student feedback regarding their school's climate had not changed significantly. This may be due to bullying behavior being more covert and difficult for teachers to observe and address. In schools that have implemented PBIS, teachers may be more focused on giving students positive reinforcement for expected overt behaviors. Therefore more covert behaviors may go unnoticed or they may not be handled efficiently or effectively. In the present study, there also was no data collected in order to determine if Non-PBIS schools have put bullying issues as a top priority in their

school. Non-PBIS schools may have implemented aggressive anti-bullying campaigns that specifically target such significant behaviors.

The higher number of negative perceptions, feelings, and behaviors that are reported in the older grades in schools implementing PBIS may also be explained by the amount of buy-in that occurs when implementing PBIS throughout schools. Current research has found that teachers are more apt to buy into the idea of implementing PBIS at the younger grade levels (Filter, McIntosh, Youngblom, & Mathews, 2013). At the older grade levels, schools and teachers may feel pressured to implement systems-level supports in order to decrease behaviors but may not have as high of buy-in than the younger grades. A study completed by Flannery and colleagues (2009) surveyed members of high school PBIS teams in order to further understand the strategies that aided implementation and factors that challenged implementation. Results showed that staff buy-in at the high school level is often challenging. Team members reported often staff buy-in is approximately 50% compared with the 80% level of buy-in that is typically required for successful implementation of PBIS. It was further reported that staff participation is often even lower. Therefore, in the current study, although buy-in may be adequate and fidelity may appear high, the individual teacher mindset may differ and participation may be insufficient.

Overall, the survey was administered towards the end of the year and student and teacher fatigue may also be one of the causes of higher incidents of being sent to the office for discipline. There has been research documenting teacher stress and burnout in relation to student behaviors. A study by Egyed and Short (2006) describes how teachers

with high levels of stress and burnout may feel inadequate to deal with problem behaviors in their classroom. This may result in the higher levels of disciplinary actions being fulfilled by an administrator. Often, students may lose motivation towards the end of the school year and increase in behaviors is typical. The discrepancy between schools that have implemented PBIS with fidelity and Non-PBIS schools may be that PBIS schools chose to become trained due to a demonstrated need for a behavior management system in their school. Anecdotal information received from the Minnesota PBIS leadership team has expressed that behaviors in their schools may have been more significant, or occurred at a higher rate to begin with, when compared to Non-PBIS schools; thus, the need for PBIS to be implemented in their particular school (Eric Kloos, personal communication). However, this study did not have access to behavioral data before PBIS was implemented.

Although the cohorts were not categorized into schools that have implemented PBIS with fidelity and schools that have not implemented PBIS with fidelity, it is interesting to note that there are particular patterns in the results. The study yielded consistent significant results from cohorts 3, 4, 5, 6 and 7 in particular. This may be due to the nature of the training schedule for these cohorts whereas, cohorts 1 and 2 may require "refresher" training in order to maintain consistent results and cohort 8 may still be too "young" to have a fully implemented system in place to start seeing significant results. Previous literature written by Castillo & Batsche (2012) introduces the concept of "scaling up" (i.e. the process of expanding the implementation of multi-tiered systems level supports with fidelity across classrooms, grade levels and schools; Castillo &

Batsche, 2012). In his study he details how it takes schools at least five years in order to introduce systems level change and allow it to become universal throughout the school in order for it to be most effective. It is logical, then, that cohort 3 and 4 would be most "universal" since it would be four to five years since those schools had received their inaugural PBIS training.

Limitations

One of the limitations of this study is the shortage of fidelity data from schools that have implemented PBIS. Overall there were a high number of participants (N = 49,319), but much of the data from schools that have implemented PBIS was filtered out due to the fact that SET or BoQ data was unavailable. This resulted in losing 10,765 pieces of data; over half of which these participants were from high school-aged individuals (N = 5,808). The rest of the filtered data came from middle and elementary school-aged students (N = 3,101 and N = 1,856= respectively). Additionally, many schools that the researcher had originally paired together (PBIS and Non-PBIS) were unable to be used, due to the fact that one of the schools in the pair did not complete the survey. This resulted in a loss of 398 schools (199 PBIS and 199 Non-PBIS schools). Had this been available, it could have impacted the results of the study.

Schools were only categorized as implementing PBIS with fidelity and without fidelity. However, a categorization scheme that included high fidelity, medium fidelity, and low fidelity could have delineated more differences in the MSS data. Further, if non-reduced fidelity data (i.e., actual SET and BoQ scores) had been available, then regression analyses could have been conducted rather than the MANOVAs. The choice to

dichotomize the fidelity data was a practical one. The agencies that managed the MSS data were unwilling to share the MSS data when the scores from the schools could be used to identify specific schools. They determined that the anonymity of the schools could be preserved if reduced SET and BoQ scores were used rather than actual scores and were only willing to provide the data under these conditions.

An additional factor that was unaccounted for is the possibility that the Non-PBIS schools included in the study may have a behavior management system currently in place. Even though the Non-PBIS school may not have been trained by the state PBIS initiative, they may still integrate pieces of PBIS throughout their school or have their own systems-level behavior support program in place that aims to be proactive in nature (e.g. Character Counts; Josephson Institute, 2014). This may have impacted the overall results of the study as well. Horner and colleagues (2009) found this issue to be significant in their randomized, wait-list control study of PBIS effects. They found that schools that were on the wait-list sought supports from outside the study to implement PBIS components.

The current study was unable to compare longitudinal data from PBIS schools before PBIS was implemented and then again after they had implemented PBIS with fidelity. Pre-existing differences in the two groups of schools were not accounted for. Results may not provide an accurate picture of the impact that PBIS has had for on schools because the reported perceptions, feelings, and behaviors from students may have been much more severe to begin with in schools that chose to be trained in PBIS. It is

possible that the outcomes measured in this study may have represented improvements over time for PBIS schools.

In previous research studies, the ODRs have been utilized in order to determine instances of student behavior and to track if behaviors school-wide are decreasing (Bradshaw, et al., 2010; Galloway et al., 2008; Horner et al., 2009, Muscott, et al., 2008). However ODRs were not used in this study. They may have been a valuable objective measure and used to gained insight to the decrease of overall behaviors at PBIS schools.

The subjective nature of the study is also a limitation to the study. The *Minnesota Student Survey* has not been validated with any other objective measures to determine if it adequately captures students true perceptions, feelings, and behaviors. It also has not been proven to be a reliable measure when measuring these outcomes. If the tool is to be used in future research studies, it requires more psychometric validation. It is also notable that the survey does not have any items built into it to detect student truthfulness in responding, therefore, students may inflate or deflate their actual responses (i.e. may report less instances of severe behavior, more instances of positive behavior). Furtherer, in the school setting, the survey is most likely administered in a large group format. Therefore, students may choose to gauge their responding in fear that their identity may be revealed or that other students may see their responses.

The inability of the researchers to collect the data themselves is also a limitation. All of the MSS data were retrieved from a research scientist working at the Minnesota Department of Education and was emailed to the researchers in an SPSS file format with the data coding scheme intact. All of the SET and BoQ data were retrieved from an

evaluation contractor working for the Minnesota PBIS Initiative. Therefore, there was no way for the researchers to check the fidelity of the data utilized in the study.

Implications for Future Research

In general, the MSS lacks psychometric properties. If continued for research purposes, the measure requires more psychometric validation with other measures that aim to assess student behavior. The MSS was not designed to be sensitive to intervention effects. Rather, the descriptive data from the MSS has been used to inform the state of Minnesota of overall student well-being based on demographics and geographic location and to assess changes in student well-being over time. However, on a smaller scale, the MSS could be used by individual schools to gauge student well-being and make school-wide programmatic decisions.

One of the key limitations to the study implies that longitudinal data would be ideal. In order to accurately determine if PBIS has a positive impact on student's perceptions, thoughts, and behaviors, the researcher would need to first assess those same students before PBIS is implemented throughout the school. This is extremely difficult due to changes in student maturity over time (i.e. student perceptions, thoughts, and behaviors may change on their own) and also the amount of time that it requires for a school to implement PBIS, scale up, and be considered a school that has implemented PBIS with fidelity.

Additionally, it was unknown to the researchers if Non-PBIS-trained schools had some sort of school-wide behavior management program or intervention already in place.

In the future, these efforts should be noted in order to better control for those extraneous factors that could have ultimately impacted the study.

Future studies could also include more objective measures, such as ODR data for PBIS schools and/or any other discipline referral data for Non-PBIS schools. This would allow the researchers to validate student responses and determine if instances of behavior are more significant and/or prevalent throughout PBIS or Non-PBIS schools.

Conclusion

It was hypothesized that students who attended schools implementing PBIS with high fidelity would report more positive social, emotional, and behavioral well-being. This would be demonstrated by more positive perceptions and feelings and fewer instances of problem behaviors. From the study, we have determined that, when PBIS is implemented with fidelity, students, specifically in younger grades, feel that adults at their school treat students more fairly, adults at their school listen to the students, teachers care more about students, and teachers at their school are more interested in them as a person. The study also confirms that, in general, when a school implements PBIS with fidelity, students report less instances of other students at school offering, selling, or giving them illegal drugs and also lower instances of students bringing weapons to school. This may allow students to feel safer at school – thus positively increasing their sense of well-being. The study also confirms that, over time, schools that have implemented PBIS with fidelity demonstrate more positive effects than schools that are just beginning to implement PBIS. Student responses from PBIS school cohorts who

have begun to "scale up" report *more* positive thoughts, perceptions and a decrease in problematic behaviors.

The current study also found results that were unfavorable for schools implementing PBIS with fidelity. In the older grades, for example, there were more instances of bullying/harassment which may negatively impact a student's social and emotional well-being. Therefore, it is possible that PBIS does not have a positive impact on many areas of student well-being. It is also possible, though, that schools that chose to be trained to implement PBIS had more student problems before implementing PBIS than schools that did not choose to be trained to implement PBIS, in which case student well-being may have improved over time within schools implementing PBIS even though the current cross-sectional design did not capture these effects. In general, it would appear that more research on PBIS effects on student well-being is warranted.

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Appendix

Letter from Minnesota State University, Mankato Institutional Review Board

MINNESOTA STATE UNIVERSITY
MANKATO

DATE:	October 25, 2012
TO:	Kevin Filter
FROM:	Minnesota State University
PROJECT TITLE:	[372858-1] School-Wide Behavior Differences Between Students Attending Schools Implementing Positive Behavior Intervention Supports vs. Non-Implementing Schools
REFERENCE #:	
SUBMISSION TYPE:	New Project
ACTION:	DETERMINATION OF NOT RESEARCH
DECISION DATE:	October 23, 2012

Thank you for your submission of New Project materials for this project. The Minnesota State University has determined this project does not meet the definition of human subject research under the purview of the IRB. Therefore, no action will be taken on this submission by the IRB and you do not need to take any further action in order to pursue the study.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact Mary Hadley at 507-389-5102 or irb@mnsu.edu. Please include your project title and reference number in all correspondence with the IRB.

Cordially,

Mary Hadley, Ph.D.
IRB Coordinator

Sarah Sifers, Ph.D.
IRB Co-Chair

Questions from Minnesota Student Survey prior to re-wording and dichotomization of variables; items categorized by grade

Study Code*	Text of Question**	Item #			Item Type***
		5th	8th	9th/ 11th	
D	Are you male or female?	1	1	1	Nominal/ Dichotomous
	What is your grade right now?	2	2	2	Nominal 7
	How old are you?	3	3	3	Ratio
	Are you a member of any of the following ethnic groups?	4	4	4	Nominal 3
	In addition, what is your race (mark all that apply)	5	5	5	Nominal 5
	Do you have an IEP or get special education services?	9	10	11	Nominal/ Dichotomous
	Do you currently get free or reduced-price lunch at school?	10	11	12	Nominal/ Dichotomous
	TOTAL ITEMS	**7**	**7**	**7**	
O	How would you describe your grades this school year?	12	13	14	Ordinal 7(5)
	TOTAL ITEMS	**1**	**1**	**1**	
SBc	How often do you care about doing well in school?	14	17	18	Ordinal 4
	How often do you pay attention in class?	15	18	19	Ordinal 4
	How often do you go to class unprepared?	16	19	20	Ordinal 4
	TOTAL ITEMS	**3**	**3**	**3**	
SBd	*During the last 30 days, how many times have you…*				
	been sent to the office for discipline?	13c	16c	17c	Ordinal 5
	had in-school suspension (ISS)?	13d	16d	17d	Ordinal 5
	been suspended from school (out-of-school suspension/OSS)?	13e	16e	17e	Ordinal 5
	During the last 30 days, on how many days did you carry a weapon such as a gun, knife, or club ON SCHOOL PROPERTY?	20	23	24	Ordinal 5
	TOTAL ITEMS	**4**	**4**	**4**	
SBb	*During the last 30 days, how many times at school have YOU…*				
	pushed, shoved, slapped, hit, or kicked someone when they weren't kidding around?	24a	27a	28a	Ordinal 5
	threatened to beat someone up?	24b	27b	28b	Ordinal 5
	spread mean rumors or lies about someone else?	24c	27c	28c	Ordinal 5
	excluded someone from friends, other students, or activities?	24d	27e	28e	Ordinal 5
	TOTAL ITEMS	**4**	**4**	**4**	
SBOa	Overall, adults at my school treat students fairly	17d	20d	21d	Ordinal 4
	Adults at my school listen to the students	17e	20e	21e	Ordinal 4
	The school rules are fair	17f	20f	21f	Ordinal 4
	At my school, teachers care about students	17g	20g	21g	Ordinal 4
	Most teachers at my school are interested in me as a person	17h	20h	21h	Ordinal 4

	TOTAL ITEMS	**5**	**5**	**5**	
SBOi	*During the last 30 days, on how many days have other students at school…*				
	stolen or deliberately damaged your property such as clothing, books, or car?	19a	22a	23a	Ordinal 5
	offered, sold, or given you an illegal drug?	19b	22b	23b	Ordinal 5
	Threatened or injured you with a weapon (gun, knife, club, etc.)?	19c	22c	23c	Ordinal 5
	TOTAL ITEMS	**3**	**3**	**3**	
SBOb	*During the last 30 days, how often have other students harassed or bullied you for any of the following reasons?*				
	Your race, ethnicity, or national origin	21a	24a	25a	Ordinal 5
	Your religion	21b	24b	25b	Ordinal 5
	Your gender (being male or female)	21c	24c	25c	Ordinal 5
	A physical or mental disability	21d	24e	25e	Ordinal 5
	Your weight or physical appearance	21e	24f	25f	Ordinal 5
	During the last 30 days, how often have you been bullied through e-mail, chat rooms, instant messaging, websites, or texting?	22	25	26	Ordinal 5
	During the last 30 days, how often have other students at school…				
	pushed, shoved, slapped, hit, or kicked you when they weren't kidding around?	23a	26a	27a	Ordinal 5
	threatened to beat you up?	23b	26b	27b	Ordinal 5
	spread mean rumors or lies about you?	23c	26c	27c	Ordinal 5
	excluded you from friends, other students, or activities?	23d	26e	27e	Ordinal 5
	TOTAL ITEMS	**10**	**10**	**10**	
Rg	*During the last 12 months, how often have you…*				
	run away from home?	58a	76a	77a	Ordinal 5
	damaged or destroyed property?	58b	76b	77b	Ordinal 5
	hit or beat up another person?	58c	76c	77c	Ordinal 5
	taken something from a store without paying for it?	58d	76d	77d	Ordinal 5
	TOTAL ITEMS	**4**	**4**	**4**	
Rd	During the last 30 days, have you smoked any cigarettes?	59			Dichotomous
	During the last 12 months, have you…				
	had alcoholic beverages to drink such as beer, wine, wine coolers, and liquor?	62a			Dichotomous
	used marijuana (pot, weed) or hashish (hash, oil)?	62b			Dichotomous
	sniffed glue or huffed or inhaled the contents of aerosol spray cans or other gases to get high?	62c			Dichotomous
	used prescription drugs that were not prescribed for you by a doctor or that you took to get high?	62d			Dichotomous
	During the last 30 days, on how many days did you smoke cigarettes?		77	78	Ordinal 7
	During the last 30 days, on how many days did you some cigars, cigarillos, or little cigars?		78	79	Ordinal 7
	During the last 30 days, on how many days did you use chewing tobacco, snuff, or dip?		79	80	Ordinal 7

	During the last 30 days, on how many days did you drink one or more drinks of an alcoholic beverage?		82	84	Ordinal 7
	During the last 12 months, on how many occasions (if any) have you had alcoholic beverages to drink?		83	85	Ordinal 7
	During the last 30 days, on how many days did you use marijuana or hashish?		87	90	Ordinal 7
	During the last 12 months, on how many occasions (if any) have you used marijuana or hashish?		88	91	Ordinal 7
	During the last 30 days, on how many days did you use prescription drugs not prescribed for you?		89	92	Ordinal 7
	During the last 12 months, have you used any "other drugs"?		90	93	Ordinal 7
	TOTAL ITEMS	**5**	**9**	**9**	
	TOTAL CUMULATIVE ITEMS	***46***	***50***	***50***	