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Factors Sustaining Effect and Implementation of School-Wide Positive Interventions and Supports

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Factors Sustaining Effect and Implementation of Student-Wide

Positive Behavioral Interventions and Supports

by

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Chapter 1: Introduction

Educators have conventionally dealt with student misbehavior by responding to instances of challenging behavior with punishment (Sugai & Horner, 2002). There are still schools that adopt corporal punishment in 19 states, and over 160,000 children in these states are subject to corporal punishment in schools each year in the United States (Gershoff & Font, 2016). According to the Office of Civil Rights ([OCR], 2018), about 5% (2.7 million) of all K-12 students (50.6 million) received one or more out-of-school suspensions during the 2015–16 school year. Out-of-school suspension is an instance in which a child is temporarily removed from his or her regular school for at least half a school day for disciplinary purposes. A teacher survey on disciplinary problems and policies indicates too many students are losing critical opportunities for learning and too many teachers are leaving the profession because of the behavior of a few persistent students with severe behavior issues (Public Agenda Foundation, 2004). The U.S. Department of Education (2014) warned that the widespread overuse of suspensions and expulsions has tremendous costs. Students who are suspended or expelled from school may be unsupervised during daytime hours and cannot benefit from academic achievement, positive peer interactions, and adult mentorship offered in class and in school. Suspending students also often fails to help them develop the skills and strategies they need to improve their behavior and avoid future problems. Suspended students are less likely to graduate on time and more likely to be suspended again, repeat a grade, drop out of school, and become involved in the juvenile justice system.

The use of punishment in America's school has increased over the past 30 years; yet, there is no evidence that exclusionary school discipline has a beneficial effect on student

behavior or school climate (Skiba, Shure, Middelberg, & Baker, 2011). Discipline is one of the most important parts of education. However, it is very diverse and dynamic. The U.S. Department of Education (2014) recommended discipline that is developmentally appropriate, proportional to the misbehavior, and focused on teaching children how to learn from their mistakes. Disciplinary approaches with these characteristics, such as School-Wide Positive Behavioral Interventions and Supports (SWPBIS), have been found to be effective at reducing problem behavior and creating a positive learning environment for students (Bradshaw, Mitchell, & Leaf, 2010).

Positive Behavioral Interventions and Supports (PBIS) is commonly referred to as School-Wide Positive Behavioral Interventions and Supports. When PBIS is applied at the school level, PBIS is a proactive approach to problem behavior, supported by interventions for small groups and individual students with further needs (Center on Positive Behavioral Interventions and Supports, 2004). Positive Behavioral Interventions and Supports emphasizes direct teaching of social behavior skills, rather than assuming students automatically know how they are expected to behave. School staffs focus on modeling and teaching expected behaviors through a positive system that incorporates practice, reinforcement and intrinsic or extrinsic rewards instead of punishing students for not following rules. Positive Behavioral Interventions and Supports promotes a positive and predictable school climate which can foster student attachment to school and provide the optimal foundation for social, emotional and academic learning (Osterman, 2000). There are three states with more than 60% of schools involved in PBIS implementation, nine states with more than 40%, and 16 states with more than 30% within 16,000 school teams that have been trained on the PBIS implementation framework (Sugai &

Simonsen, 2012). Although the success of PBIS has resulted in improvement of school behavior and academic benefits, there has been increasing attention to how SWPBIS systems can be sustained because of widespread adoption and implementation (McIntosh & Turri, 2014). Recent studies reported that a focus on sustainability of SWPBIS is significantly important. The purpose of this paper was to search for sustaining factors of SWPBIS on student behaviors.

Research Question

One research question guided this study: What factors sustain the effects of implementing School-Wide Positive Behavioral Interventions and Supports?

Focus of the Paper

In Chapter 2, the review of literature included 12 studies. The studies include a range of dates from 2009 to 2018 that examined the factors related to sustainability of SWPBIS. This review is delimited by school settings. My focus was to find out factors sustaining the effect of SWPBIS.

The review of the literature on sustainability of SWPBIS produced a large number of conceptual models and recommendations, but a few empirical suggestions (McIntosh et al., 2013). The studies in Chapter 2 include nine quantitative studies and three qualitative studies because I wanted to focus more on data driven empirical studies.

I searched the literature using the following databases: Academic Search Premier, ERIC, PsycINFO, and SAGE journals online. Also, I used several keywords and combinations of keywords to locate studies: *sustainability, PBIS, PBS, IPBS, IPBIS, school wide positive behavioral interventions and supports, positive behavior support, sustained factors, classroom management, school supports, behavior modification, predicting sustained implementation.* To

locate the current information, I found information on the following websites: *Positive Behavioral Interventions and Supports, U.S. Department of Education, Applied Behavior Analysis, and Mental Health.*

Historical Background

Positive Behavioral Interventions and Supports (PBIS) emerged from the controversy surrounding the use of aversive consequences with people with developmental disabilities (Sugai & Horner, 2002). The authors insisted that non-aversive behavior management was developed as an alternative to more extreme use aversive methods. During the 1980s, a need was identified for improved selection, implementation, and documentation of effective behavioral interventions for students with behavior disorders (Sugai, Sprague, Horner, & Walker, 2000).

An amendment of the Individuals with Disabilities Education Act (IDEA) in 1997 included the language: "Positive Behavior Interventions and Supports," which described methods used to identify and support desired behaviors in the school setting. Positive Behavioral Interventions and Supports has been defined, described, and extensively studied since its introduction in the reauthorization of the IDEA (Sugai & Simonsen, 2012). A National Center on Positive Behavioral Interventions and Supports was established when IDEA was reauthorized in 1997 to disseminate and provide technical assistance to schools on evidence-based practices for improving supports for students with Behavior Disorder (Johnston, Foxx, Jacobson, Green, & Mulick, 2006).

Johnston et al. (2006) explained the development of Positive Behavior Support (PBS) was reinforced from 1987 to 1992 by a U.S. Department of Education National Institute on Disability and Rehabilitation Research (NIDRR) grant of $670,000 for a "*Rehabilitation*

Research and Training Center on Community-Referenced Technologies for Non-aversive

Behavior Management."

Dissemination efforts expanded further with publication of the first issue of the *Journal*

of Positive Behavior Interventions, which publishes descriptive and experimental studies in 1999

(Johnston et al., 2006). In the 2000s, the National Technical Assistance (TA) Center on PBIS

has assisted in shaping the PBIS framework and providing direct PBIS. Although initially

established to disseminate evidence-based behavioral interventions for students with behavioral

disorder, the National TA Center on PBIS shifted focus to the school-wide behavior support of all

students, and an emphasis on implementation practices and systems. As a result, PBIS is defined

as a framework for enhancing the adoption and implementation of a continuum of evidence-

based interventions to achieve academically and behaviorally important outcomes for all students

as a "framework," the emphasis is on a process or approach, rather than a curriculum,

intervention, or practice (Sugai et al., 2000). Now more than 16,000 schools have adopted this

system for behavior management in school settings (Sugai & Simonsen, 2012).

Theoretical Background

Positive Behavior Interventions and Supports (PBIS) aims to reduce or eliminate

undesirable behavior school-wide by reinforcing of positive behaviors. Walker et al. (1996)

stated that PBIS is conceptualized as a continuum of intervention levels that range from

proactive, preventive strategies applied throughout a school or facility to comprehensive,

intensive interventions developed and applied for individuals who have significant behavioral

concerns.

Positive Behavioral Interventions and Supports is based on a Multi-Tiered Systems of Support (MTSS). MTSS is a process of systematically documenting the performance of students as evidence of the need for additional services after making changes in general and special education (Center on Positive Behavioral Interventions and Supports, 2004). Walker et al. (1996) suggested a three-tiered model of preventative approaches that reflect a public health model of prevention and intervention. Three-tiered PBIS model which is composed of school-wide, classroom, and individual level suggested that strategies are implemented by schools to reduce behavior that disrupts the learning process.

The primary level prevention is to prevent inappropriate behaviors school-wide, or classroom-wide, involving all students, staff, and settings. Universal interventions should be effective for 80- 90% of the population on any given school (Center on Positive Behavioral Interventions and Supports, 2004).

The secondary level prevention provides more concentrated support for those students who are not responsive and who exhibit at-risk behaviors. At secondary level prevention, target students are considered at risk for chronic or serious problem behavior or academic failure, or who continue to exhibit high levels of inappropriate behavior or academic skill deficits despite exposure to universal interventions. Approximately 5-15% of a school's population will require targeted interventions (Scheuermann & Hall, 2016).

The tertiary level prevention is intended for students who require specialized, highly individualized supports for at-risk behaviors. These supports are the most intensive and resource dependent, and thus are reserved for the approximately 1-5% of a school's population who do not

respond to primary intervention and secondary interventions (Center on Positive Behavioral Interventions and Supports, 2004).

Positive Behavioral Interventions and Supports embraced the task of adopting evidence-based practices about the standards and format for determining whether an intervention is supported by data on its effectiveness (Horner, Sugai, & Anderson, 2010). Since the 1980s, a number of experimental studies have documented the effectiveness of the PBIS framework at the school-wide level. This research supports improvements of undesirable behaviors, school climate, reduces student bullying behavior and peer victimization, and increases academic achievement. Positive Behavioral Interventions and Supports is developed from behavioral theory, behavior analysis, positive behavior supports, and prevention and implementation that improve how schools select, organize, implement, and evaluate behavioral practices in meeting the needs of all students (Sugai et al., 2000).

Importance of the Topic

There are numerous behavioral programs in school settings. Some stakeholders assume that PBIS is also a program because this term is easy to understand. However, it is a framework built on behavioral philosophies and processes designed to improve school climate. According to Center on Positive Behavioral Interventions and Supports (2004), PBIS is not an intervention or practice. It is more accurately described as a "framework" or "system" that provides the means of selecting, organizing, and implementing evidence-based practices by giving equal attention to: (a) clearly defined and meaningful student outcomes, (b) data-driven decision making and problem-solving processes, and (c) systems that prepare and support implementers to use these practices with high fidelity and durability.

Yeung et al. (2016) explained positive behavior interventions have resulted in improvement of school behavior and academic gains in a range of school settings worldwide. Despite success and positive results reported in numerous evaluation studies of PBIS, recent studies reported sustainability has drawn the attention of researchers and practitioners as a major concern (Bambara, Nonnemacher, & Kerm, 2009). McIntosh et al. (2013) pointed out that continued support for schools that implement SWPBIS is needed because of the constant threat of practice abandonment. There are many factors that affect sustainability of implementing SWPBIS.

By identifying factors associated with sustainability of SWPBIS, this literature review can help us to find out the enablers and barriers of sustaining the effect of SWPBIS.

Definitions of Terms

Positive Behavioral Interventions and Supports (PBIS) is defined as "a framework for enhancing the adoption and implementation of a continuum of evidence-based interventions to achieve academically and behaviorally important outcomes for all students" (Sugai & Simonsen, 2012, p. 2).

School-Wide Positive Behavioral Interventions and Supports (SWPBIS) is used when PBIS is applied at the school-wide level. According to the Center on Positive Behavioral Interventions and Supports (2004), it is a system to change process for an entire school or district. The underlying theme of SWPBIS is teaching behavioral expectations in the same manner as any core curriculum subject.

Sustainability refers to "durable, long term implementation of a practice at a level of fidelity that continues to produce valued outcomes" (McIntosh, Horner, & Sugai, 2009, p. 328).

Sustained Implementation is defined as "continued use of an intervention or prevention program, with ongoing implementation fidelity to the core program principles, after supplemental resources used to support initial training and implementation are withdrawn" (Han & Weiss, 2005, p. 666).

School-Wide Universal Behavior Sustainability Index: School Teams (SUBSIST) is an instrument designed to assess the critical features that enhance or inhibit sustainability of universal behavior support interventions (McIntosh et al., 2014).

School-Wide Evaluation Tool (SET) is designed to assess and evaluate the critical features of SWPBIS for each academic school year (Sugai, Lewis-Palmer, Todd, & Horner, 2001).

Team Implementation Checklist (TIC) is to monitor implementation and maintenance of SWPBIS systems. When beginning implementation, the school's SWPBIS team completes the checklist and uses the results to create an action plan that describes the most needed resources (Coffey & Horner, 2012).

Self-Assessment Survey (SAS) is used by school staff for initial and annual assessment of effective behavior support systems in their school. The survey examines the status and need for improvement of behavior support systems (Sugai, Horner, & Todd, 2003).

Chapter 2: Review of the Literature

The purpose of this literature was to identify the factors that sustain effect of SWPBIS using on extensive review of the current trend of positive behavior interventions in terms of sustainability. Twelve studies were chosen for review on sustaining factors of SWPBIS. Table 1 summarizes the findings of these studies in the same chronological order in which they appear in Chapter 2.

Review of Related Literature

Bambara et al. (2009) investigated the perceived barriers and enablers to sustaining individualized positive behavior supports by school-based team members across five distinct stakeholder groups (i.e., classroom teachers, school administrators, parents, external facilitators, and internal facilitators). Researchers assumed the use of school-based teams is viewed as an essential feature of Positive Behavior Supports (PBS) at the individual student level. Previous researchers have not yet explored the perceptions of team members who implement PBS in typical school settings. The study explored the perspectives of team members who implement PBS. It is likely to yield important information about the factors that interfere with or support sustainability defined as the continued implementation of a practice with ongoing fidelity of implementation to the core program principles. This study intended that exploring the perspectives of PBS team members can compare their perspectives with sustainability factors previously identified in other research (Bambara et al., 2009).

Bambara et al. (2009) employed semi-structured interviews to describe the perceptions of well-informed and experienced PBS team members who design and implement PBS for individual students with disabilities in public school settings. This study collected 25 participants

from five distinct stakeholder groups to represent diverse perspectives of individuals in school-based PBS teams. These groups included classroom teachers, school administrators, parents, external facilitators (i.e., two training supervisors and two resident teachers) and internal facilitators (i.e., two district-wide behavior support specialists, two special education specialists, and a school psychologist).

In this study, interviewers contacted the participants via e-mail and conducted a screening interview over the phone. Questions were made up of three broad categories. First, participants were asked to describe the general process that was typically used for developing PBS plans for students. Second, participants were asked to explain the primary barriers of successfully implementing the process of developing and carrying out PBS for individual students. Third, the participants were asked to reflect on their perspectives on what enablers must be in place to fully support the PBS process in schools (Bambara et al., 2009).

Researchers used a modified Consensual Qualitative Research method for data analysis. First, research teams developed domain codes through identifying broad topic areas based on participant responses to interview questions. Second, they coded into domains. In the third stage, they abstracted core ideas within domains because abstracting could capture the content of the interview data in preparation for the cross-analysis. Finally, the two primary researchers reviewed all the abstracted data across participants in each domain. Once the cross analysis was completed a simple frequency count of the number of participants contributing to each theme and subcategory was made to assess the relative occurrence of topics discussed by participants (Bambara et al., 2009).

In this study, researchers found multiple factors perceived as barriers and enablers to implementing and sustaining PBS in school settings. School culture, administrator support, structure and use of time, professional development and support for professional practice, family and student involvement were identified as the major factors for sustaining positive behavior interventions for individual students (Bambara et al., 2009). The most pervasive theme was the importance of building a school culture in which all members understanding and appreciation for PBS in this study. Many participants (84%) discussed that conflicting beliefs and school practices held by school personnel interfered with the general acceptance of PBS. The vast majority of participants (92%) expressed that establishing a supportive school culture was an important factor. Most participants (84%) stressed the important role that the building principal plays in promoting the overall acceptance of PBS and making it possible for PBS teams to carry out their work. The vast majority of participants (76%) mentioned the building principal securing and providing resources needed for PBS activities. Those activities included money, opportunities for staff training, and release time, including the provision of substitute teachers so that school personnel could attend trainings and PBS meetings. In structure and the use of time, there were time-related barriers. The vast majority of participants (76%) identified PBS process itself was often viewed as too time consuming or labor intensive. To solve these time barriers, most participants (72%) pointed out the importance of the building principal's role in creating common times for people to meet by adjusting schedules and releasing teachers from classroom instruction. In addition, most participants (92%) identified professional development and support for professional practice was the fourth essential practice needed to successfully sustain PBS. Many school staffs were unfamiliar with the basic procedures of PBS. Most participants (76%)

reported that a major barrier to the PBS process was inadequate training and preparing.

Participants shared collaborative aspects of teaming provided an important source of sustaining

support for team members. Family and student involvement was the fifth important theme

supported by most participants (72%). About 56% of participants agreed that family involvement

could enhance PBS effectiveness and sustainability. However, almost half of the participants

(48%) pointed out that schools did not support parent involvement well (Bambara et al., 2009).

Bambara, Goh, Kern, and Caskie (2012) conducted a further study to identify facilitators

and barriers to the implementing of Individualized Positive Behavior Interventions and Supports

(IPBIS). This study examined professionals' perceived levels of impact on barriers and enablers

to implementing IPBIS practices in school settings by surveying a large number of participants.

Researchers focused on the perceived impact of potential barriers and enablers based on

respondent experiences and beliefs. This article set two goals for this study. First, this study was

to investigate the extent to which specific barriers and enablers were experienced by school-

based professionals and which were perceived as most problematic or helpful to the IPBIS

process. Second, it was to examine whether differing roles on student-centered teams (i.e., team

leader vs. regular team member) influenced perceptions about the impact of barriers and enablers

on implementing IPBIS (Bambara et al., 2012).

The study included a total of 293 professionals with experience implementing IPBIS.

Participants completed a four-part questionnaire developed by the researchers. The questionnaire

items were based on Bambara et al. (2009). Researchers used one-way multivariate analysis of

variance to examine the differences between IPBS team leaders and regular team members in

their responses to the barrier and enabler domains. Post hoc analyses, using *t* tests, were further

conducted when a significant difference was found at the domain level to examine the source of differences at the item level (Bambara et al., 2012).

In the survey of 293 professionals, respondents reported greater experience with barriers than facilitators in school settings. Overall, barriers were reported as being experienced by respondents. Within the domain of School Practices: Culture and Beliefs, "basic IPBIS principles and practices were not understood by the entire school staff" was most frequently experienced (91.7%), whereas "school philosophy and practices restricts inclusion of students with disabilities in general education classrooms," also in that domain, was the least experienced (46%) barrier. As with the barriers, all enablers were reported as being experienced by respondents. But fewer respondents reported experiencing enablers compared to barriers. There were only four enablers experienced by more than 80% of the respondents. The most experienced enabler was "IPBIS team members (e.g., family, school staff, professionals from outside agencies) have a positive working relationship," experienced by 85.7% of respondents, and the least experienced enabler was "Basic principles and practices of IPBIS are understood by the entire school staff," experienced by only 28.0% of the respondents (Bambara et al., 2012).

Bambara et al. (2012) identified school-based professionals' perspectives about factors that hinder and support their implementation of IPBIS in schools. The study concluded the most problematic ones were also the most frequently experienced. The major barriers were related to beliefs, time, and training. Most professionals reported enablers to have moderate to substantial support on IPBIS practice; but in comparison to barriers, few were frequently experienced by respondents in schools. This study provided important findings on factors perceived by school-

based professionals to be most problematic and helpful to implementing IPBIS (Bambara et al., 2012).

Coffey and Horner (2012) who conducted a study about the sustainability of School-wide Positive Behavior Interventions and Supports (SWPBIS) mentioned that sustained use of an innovation is not guaranteed even when full and effective implementation occurs. They insisted fully implemented evidence-based practices were needed. Researchers conducted this study to identify and validate the components of sustainability that increase the ability of schools to sustain SWPBIS.

A study collected the data from 1998 to 2006 with 429 schools based on the School Evaluation Tool database (SET) which is designed to assess and evaluate the critical feature of SWPBIS for each school year and 932 schools in the Team Implementation Checklist (TIC) which monitors implementation and maintenance of SWPBIS systems. Of the 257 surveys sent to PBIS team leaders, 117 were returned. The sample schools have implemented PBIS for at least three years. The sample schools consisted of two groups: sustainers and non-sustainers. The sample schools took part in a survey containing 40 questions related with the sustainability factors in each school about SWPBIS (Coffey & Horner, 2012).

Coffey and Horner (2012) used logistic regression to test the factors of sustaining SWPBIS. There were five survey categories: (a) administrative support, (b) communication, (c) data-based decision making, (d) regeneration, and (e) technical assistance. The alternative hypothesis pointed that the sustainability model provides a better fit to the data by demonstrating a significant improvement over the intercept-only model.

They found that administrator support, communication, and data-based decision making were the main contributing factors for sustainability. When a school has data-based decision making along with a combination of administrative support and communication, it can have better odds of sustaining PBIS than schools that do not have them. Some of the respondents explained what had helped them sustain PBIS and described obstacles to their school's efforts to sustain them. They mentioned that teaching behavior expectations, establishing a reward system and a system of monitoring and decision-making were critical features of programs sustained for at least 5 years. Other factors influencing sustainability included coaching, training, teacher buy-in, teaming, resources, and turnover. Out of 84 respondents, 22 respondents said that inadequate funding was a barrier in sustaining PBIS. They also mentioned resource allocation and philosophical issues (Coffey & Horner, 2012).

McIntosh et al. (2013) examined factors associated with sustainability of school-based interventions and the relative contributions of those factors to predicting sustained implementation of School-wide Positive Behavior Support (SWPBS). The purpose of this study was to conduct an empirical analysis of influence of variables (e.g., school priority, team use of data, district priority, capacity building, and implementation) as affecting sustainability of school-based practices.

The study included 217 participants from 217 schools in 14 U.S. states. The sample schools have implemented PBIS for an average of 5.4 school years (SD = 3.2, range = 1-15). To test measurement and predictive model, researchers developed and validated a research measure to assess its theoretical factors and better understand the phenomenon. They included the School-wide Universal Behavior Support Sustainability Index: School Teams (SUBSIST) for models to

enhance or inhibit sustainability of a range of school-based interventions. So, authors examined how these sustainability variables explained their influence on sustained implementation of SWPBS. Analyses were conducted using factor analysis and structural equation modeling in M*plus* 6.1. In measurement models, the two school-level factors were labeled School Priority and Team Use of Data. Priority factors included items assessing staff support, school administrator support, and perceptions of the school. Team Use of Data factors included items primarily assessing the school team, including their skill level, regular meeting times, organization, and use of data. For the district-level items, District Priority and Capacity Building were labeled as district-level factors. District Priority included district resources, district and state administrator support, visibility, and integration into district policy. Capacity Building included items assessing school access to coaching and technical assistance, regular professional development, and connection to a community of practice. In the predictive model, two school-level factors (i.e., School Priority and Team Use of Data) and two district-level (i.e., District Priority and Capacity Building) were specified as predictors of the sustained implementation variable to determine which factors were significantly related to implementation (McIntosh et al., 2013).

McIntosh et al. (2013) found that result of the factor analyses indicated adequate model fit for two-factor solutions at the school and district levels, respectively. School Priority, Team Use of Data, District Priority, and Capacity Building were strongly correlated and significantly related to sustained implementation. However, School and District Priority did not make significant independent contributions to the prediction from the predictive structural equation model. With regard to factors associated with sustained implementation, researchers reported

school team functioning, especially the use of data for decision-making, had the strongest association with sustained implementation. Collection of data, use of data, and capacity building were integrally associated with sustainability. Also, schools with both effective teams and supportive administrator were influential to sustain SWPBS. The results indicated that school personnel can increase the likelihood of sustained implementation. School and district administrators can support schools most effectively by offering school level training and support in school-level teaming and building capacity by providing coaching, ongoing professional development, and connection to community of practice (McIntosh et al., 2013).

McIntosh et al. (2014) conducted a study to assess the perceptions of contextual features related to implementation and sustainability of School-Wide Positive Behavior Support (SWPBS) because school personnel are the core implementers of SWPBS. Researchers conducted a large and national survey to identify differences in perceived importance of contextual and practice variables for both initial implementation and sustainability of SWPBS.   They assumed that certain variables may be more important for sustainability than high-quality initial implementation.

The 257 school team members or district personnel with knowledge of their school's SWPBS systems participated in this survey. Schools had begun implementation of SWPBS an average of five years in 14 U.S. states before the study ($SD = 3.3$, range = 1-15). Survey questions included the School-Wide Universal Behavior Sustainability Index: School Teams (SUSBSIST) that is an instrument designed to assess the critical features that enhance or inhibit sustainability of universal behavior support interventions. Researchers used a mixed-methods study, incorporating descriptive and quantitative analyses (i.e., *t* tests, correlations, and ANOVAs)

of the item responses and qualitative analyses of the open-end questions (McIntosh

et al., 2014).

The results indicated that features related to administrator support and school team

functioning and use of data for decision-making were rated as having the strongest impact on

both initial implementation and sustainability. In this study, administrator support was strongly

correlated with sustained implementation. Administrator supports are most effective when they

authorize the school team to implement effectively and use data for decision-making. Adequate

fidelity of implementation was also important for sustainability. The results also highlighted the

importance of the quality of teaming in implementation and sustainability. However, barriers

were rated less important than facilitators in this study. The lack of resources, competing

initiatives, and turnover were noted as barriers. Inadequate resources were most reported as an

important barrier. Researchers found that the perception that concrete strategies could be used to

overcome these barriers. For example, having a committed administrator and skilled school team

was perceived as more important than adequate resources or turnover. These perceptions can be

more valuable for implementing and sustaining SWPBS. Overall, this study indicated that it is

more important that school teams focus more on a number of concrete strategies for

sustainability such as ensuring effective and efficient team functioning, and enhancing

administrator support (McIntosh et al., 2014).

Mathews, McIntosh, Frank, and May (2014) investigated the extent to which a common

measure of perceived implementation of critical features of Positive Behavioral Interventions

and Supports (PBIS) predicted fidelity of implementation 3 years later. Researchers assumed that

existing measures that school teams already use in PBIS implementation are more related to

future fidelity of PBIS implementation. Accordingly, they evaluated the predictive power of a

self-report measure of fidelity of implementation in different PBIS systems (e.g., school-wide,

non-classroom, classroom, and individual) on the levels of overall PBIS implementation and

problem behavior 3 years later.

Participants were 261 school personnel who reported PBIS fidelity data during a 3-year

period in the U.S. States. Respondents completed the PBIS Self-Assessment Survey (SAS) to

self-report fidelity of implementation in different PBIS settings in 2006-2007 (i.e., school-wide,

non-classroom, classroom, and individual). The School-Wide Benchmarks of Quality (BoQ) in

2009-2010 was used to evaluate the fidelity of PBIS implementation and Office Discipline

Referral (ODR) data in 2009-2010 were used to indicate sustained student outcomes of

implementing PBIS. Researchers conducted regression analyses to explore the extent to which

self-reported prior implementation predicted sustained PBIS implementation and student

outcomes (Mathews et al., 2014).

The results indicated that only prior implementation in classroom systems was a

statistically significant predictor, $\beta = .28$, $p < .05$. Similarly, the only statistically significant

predictor of level of ODRs was classroom systems, $\beta = −.43$, $p < .05$. There were also

statistically significant positive correlations between each classroom system and the BoQ score.

The finding revealed that the classroom systems subscale was a stronger predictor of sustained

fidelity of implementation and student outcomes than school-wide and non-classroom systems

subscale. Researchers explained students spend the vast majority of their school day in the

classroom. As core PBIS implementers, classroom teachers have regular and ongoing

opportunities to implement PBIS practices in their classrooms by creating environments that

increase the likelihood of students learning academic and behavioral skills. Thus, focusing on helping classroom teachers to implement PBIS may improve fidelity of implementation and student outcomes for sustainability. Within classroom systems, regular positive reinforcement, matching academic instruction, and access to additional support were the strongest predictors of sustained implementation. Regular positive reinforcement of appropriate behavior may increase the likelihood of desired behavior in the future and foster positive student-teacher interactions. Matching academic instruction to the needs of the students was also an important predictor for sustainability of implementation. This result indicated that matching instructional demands to student skill levels may reduce problem behavior and maximize student outcomes. Findings from this study also revealed that access to additional support had significantly positive correlation with sustained implementation. The access to assistance and recommendations were predictive of sustained PBIS implementation when the additional supports focus on improving salient instructional practices rather than simply providing access to additional support. This study implicated that focusing on improving the understanding of key principles of the practice for classroom teachers may improve teacher acceptability of the practice by increasing expectations, intentions, and motivation to implement the practice (Mathews et al., 2014).

McIntosh, Kim, Horner, Mercer, and Strickland-Cohen (2015) conducted the study to access the extent to which school demographic characteristics and frequencies of school team actions were associated with increased likelihood of sustained implementation of School-Wide Positive Behavioral Interventions and Supports (SWPBIS). Researchers assumed that school demographic characteristics (e.g., racial, school structure, low community, and socioeconomic status) and school team actions were important as potential predictors of sustained

implementation. The authors intended that this study had the potential to notify researchers and practitioners regarding the most important variables to target to enhance implementation and sustainability of school-based interventions.

The study collected data from a total of 860 schools across 14 U.S. states implementing SWPBIS. One individual who was school SWPBIS team member or district coach with knowledge regarding each school's SWPBIS systems participated for each school. Survey questions included the School-Wide Universal Behavior Sustainability Index: School Teams (SUSBSIST) that is a measure of factors predicting sustained implementation of SWPBIS. For school demographic characteristics, data included grade levels (i.e., elementary, middle, and high school), enrollment, urbanicity (using the federal categories of rural, town, suburb, and city), percentage of non-White students, and students receiving free and/or reduced-price lunch. For school team actions, participants were asked to self-assess the frequency of three sets of actions (i.e., frequency of team meetings, frequency of sharing data, and hours of SWPBIS coaching received). Data from this study came from the first year of a 3-year project examining implementation and sustainability of SWPBIS. Researchers used structural equation modeling in M*plus* 7.1 (Muthén & Muthén, 2012) to assess each variable's unique association with four latent factors (i.e., school priority, team use of data, district priority, and district capacity building) of the SUBSIST (McIntosh et al., 2015).

Results indicated that for School Priority, significant predictors were years implementing SWPBIS, grade levels served, and frequency of data sharing with staff. For Team Use of Data, significant predictors included years implementing SWPBIS, grade levels served, frequency of team meetings, and frequency of data sharing with staff. For District Priority, frequency of data

sharing with staff was the significant predictor. For District Capacity Building, significant

predictors were frequency of data sharing with staff and access to coaching (McIntosh et al.,

2015).

The findings revealed that school demographic characteristics were not significantly

related to sustainability such as percentage of students receiving free or reduced lunch and

percentage of non-White students. Grade levels and years implementing were only significant

predictors of school-level factors. School team actions, especially the frequency of sharing data

with the all school staff, were statistically significantly related to all four sustainability factors.

In addition to continuing to document the importance of the use of data and the team's general

use of data, the actual frequency of sharing the data, and the decisions based with whole staff

may improve sustainability. Frequency of team meetings and access to coaching were also

statistically significantly related to sustainability factors. However, researchers explained that

access to coaching was not a predictor of the school-level factors because coaching is only a

strong predictor when it is effective (McIntosh et al., 2015).

Andreou, McIntosh, Kahn, and Ross (2015) examined this study to identify, categorize,

and describe practitioners' perspectives regarding factors that facilitate and hinder sustainability

of Tier I (i.e., universal prevention) systems within School-Wide Positive Behavioral

Interventions and Supports (SWPBIS). Researchers focused on Tier I because it was provided to

all students by all school personnel to promote social responsibility. The authors explained that at

Tier I, the school developed school-wide expectations, which are brief in number, contextually

defined, and positively worded. Expectations were then posted, defined using a matrix that

provides specific examples in each setting, taught explicitly, and reinforced strategically. Explicit

teaching included targeted lessons, demonstrations in settings where problem behaviors often occur, and practice with performance feedback. Systematic reinforcement of positive behaviors involved high rates of descriptive feedback, often accompanied by external rewards.

Researchers used a qualitative design to evaluate factors perceived as helping or hindering the sustainability of Tier I SWPBIS in schools that had been implementing SWPBIS for more than 15 years. This study included "how" or "why" questions that may occur under real-world conditions. In this study, researchers collected data from a school district in rural British Columbia in Canada. The school district included the district office and three elementary schools. Researcher collected 17 participants: four administrators, four district consultants, three special education teachers, and six general education teachers familiar with the SWPBIS. Respondents had an average of 9 years of experience implementing SWPBIS in the district studied (Andreou et al., 2015).

Andreou et al. (2015) used a qualitative approach called the Critical Incident Technique (CIT) in this study. Critical Incident Technique was based on identification and analysis of critical incidents (i.e., continuous teaching, positive reinforcement, SWPBIS team effectiveness) about SWPBIS. A total of 227 critical incidents were used and sorted into emergent unitary clusters based on content analysis. Data were collected from one face-to-face interview. All interviews were conducted over a 2-month period and tape recorded. For credibility and trustworthiness of data, researchers took five steps to assess the trustworthiness of this study (i.e., expert feedback, comparing results, calculating inter-coder agreement, accountability procedure, and setting a minimum participation rate).

Results provided 13 categories including the number of helping and hindering incidents that represent the participants' experience of sustainability: Continuous teaching, positive reinforcement, SWPBIS team effectiveness, staff ownership, school administrator involvement, adaptation, community of practice, use of data, involving new personnel, access to external expertise, maintaining priority, staff turnover, and conflict of personal beliefs/mistaken beliefs. For continuous teaching, 88% of the participants perceived it as a strong facilitator to enhance SWPBIS sustainability. Continuous teaching included consistent re-teaching of expectations and social skills through classroom lessons, incidental teaching, assemblies, and presentations. On the contrary to this, a lack of continuous teaching was also described as a hindering event. For positive reinforcement, 82% of participants cited it as an important factor in sustaining SWPBIS. Continuous teaching referred to a general focus on prosocial behavior, use of school-wide systems for positive reinforcement, and reinforcement of staff. The vast majority of participants reported that using a SWPBIS acknowledgment system occasioned student change, and observing that change, occasioned adult implementation of SWPBIS. Participants explained that receiving positive acknowledgment and could improve both students' desired behavior and adults' implementation of SWPBIS. A total 88% of the participants reported the importance of SWPBIS team effectiveness. Respondents noted that effective teams could maintain the conversations about SWPBIS at the school level and it allowed people share their concerns and insights. For staff ownership, the vast majority of participants (76%) identified SWPBIS as a teacher-generated and owned initiative, as opposed to a top-down mandate imposed by administrators. Participants expressed that this category centered on teacher buy-in and a high level of involvement in planning and implementation. For school administrator Involvement, a total 76%

of participants highlighted the critical role of principals as agents who can either facilitate or hinder sustainability. Participants also reported the principal's ability to listen and respect what has been done was important to sustainability of SWPBIS. Conflict in personal belief/mistaken beliefs cited by 82% of the participants, included two types of conflicts. First, participants reported the different personal philosophies may lead to lack of engagement and poor implementation. For example, the belief that teachers have to focus on academics, not behaviors could also be a barrier. Second, participants discussed the mistaken beliefs about SWPBIS. Some teachers had a lack of understating about SWPBIS. One misconception was, for example, that writing office discipline referrals was punitive itself, not realizing that collecting this type of information could help students in the long term and allow teachers to prevent challenges.

Researchers concluded that the perspectives of school and district personnel regarding events affect Tier I SWPBIS sustainability. Continuous teaching of expectations and prosocial behavior may lead to continuous regeneration of the practice. The authors highlighted that positive reinforcement was important as a key mechanism for sustained implementation. School administrator support was also identified as important by a majority of participants.

Pinkeman, McIntosh, Rasplica, Berg, and Strickland-Cohen (2015) investigated the most important enablers and barriers regarding sustainability of School-Wide Positive Behavioral Interventions and Supports (SWPBIS). The authors found that there were many examples of successful initial implementation that have failed to sustain. Researchers intended to provide empirical based recommendations to school regarding ways school personnel can improve the sustainability by identifying what school personnel perceive as enablers of and barriers to the sustainability of SWPBIS.

Respondents were 860 educators with knowledge of the SWPBIS systems in their particular schools. In this study, the schools had been implementing SWPBIS and were from 14 U.S. states. The majority of schools were elementary schools (82%). Respondents completed open-ended survey of factors regarding sustainability of SWPBIS. Qualitative analyses in this study were used to assess perceptions of the most important factors related to sustainability. This phenomenological approach allowed the respondents to share simply their lived experience regarding systems change and sustainability as it related to SWPBIS. Responses to questions regarding enablers and barriers to sustainability were coded into 13 themes. Two open-ended questions were the focus of this study: (1) "What is the most important factor for sustaining SWPBIS?" and (2) "What is the most significant barrier to sustaining SWPBIS?" The open-ended questions allowed the author to review participant responses and look for patterns in the data (Pinkeman et al., 2015).

Thematic analysis yielded 13 themes regarding enablers and/or barriers. Results indicated the most commonly cited enablers were Staff buy-in, School administrator support, and Consistency. The most commonly identified barriers were Staff buy-in and Resources (i.e., time and money). Researchers found that the most frequent theme representing factors important to the sustainability of SWPBIS was staff buy-in (n = 214). The authors described the staff buy-in as the commitment of teachers and staff in supporting PBIS implementation. They explained this theme did not include buy-in from school administrators or other stakeholders (i.e., families, the community) and represented the notion of grassroots support for the approach. The second most frequent theme was school administrator support (n = 197). School administrator support was cited as active support of building-level administration, specifically support from school (not

district) administrators. The third most frequent theme was consistency (n=118). Consistency

refers to a common approach among staff, school personnel, or school teams regarding PBIS

implementation, common language, or working toward a common goal. Participants identified

consistency as needed for sustainability. The most commonly frequent barrier theme was also

staff buy-in (n=163). Respondents explained that teacher buy-in has been a challenge and being a

turn-around school has placed a lot of pressures on teachers. Many teachers thought that PBIS

was just another thing they had to do that would not have a significant enough positive outcome

to be worth their time.

Researchers reported that the second most frequent barrier theme was resources: time

(n = 160).   Resources: time refers to the resources needed to initiate activities related to

SWPBIS in terms of individuals' time for planning or implementation. Participants described the

significant time commitment needed to conduct multiple activities related to SWPBIS (e.g.,

planning, meeting, data review, completing fidelity measures). Another barrier theme was

Resources: Money. Respondent highlighted monetary resources needed to implement SWPBIS

(Pinkeman et al., 2015).

In discussion, researchers explained school staffs are more likely to support a practice

once they have experienced naturally occurring reinforcement for its use (e.g., decrease in

student problem behavior and increase in appropriate behavior). Also, staff buy-in was identified

as a facilitator and barrier for schools. Therefore, the school staff may need to experience the

positive outcomes. Researchers highlighted the staff training might be an important variable to

consider for the sustained implementation of SWPBIS because research indicates that effective

staff training included critical instruction regarding the theoretical foundations of the practice,

modeling, practice, performance feedback, coaching, and follow-up support. The authors suggested that further study could examine the effects of varying activities to improve staff buy-in and examine whether improvement contributes to the sustained implementation of SWPBIS (Pinkeman et al., 2015).

McIntosh, Mercer, Nese, Strickland-Cohen, and Hoselton (2016) investigated the critical features that may predict adoption and sustained implementation of School-Wide Positive Behavioral Interventions and Supports (SWPBIS). The authors assessed the predictive power of various school characteristics and speed of initial implementation on sustained fidelity of implementation of SWPBIS at 1, 3, and 5 years.

Researchers used a national extant data set to examine all elementary, middle, and high schools in the United States meeting the following criteria were eligible for inclusion in the study: (a) at least one year of SWPBIS data reported to the Office of Special Education Programs (OSEP) National Technical Assistance Center on PBIS between the 2005–2006 and 2012–2013 school years, (b) a Team Implementation Checklist (TIC) fidelity score reported during their first year of implementation, and (c) complete National Center for Educational Statistics (NCES) school demographic data. In this study, a sequential cohort design was used, with the first year of SWPBIS fidelity data reported to the OSEP serving as the initial year of SWPBIS implementation. For the Year 3 analyses, the authors included 3,011 schools. For the Year 5 analyses, they included the 1,242 schools with 5 years of potential SWPBIS implementation. To measure fidelity of implementation, the authors measured School-Wide Evaluation Tool (SET), Self-Assessment Survey (SAS), and Benchmarks of Quality (BoQ). Team Implementation Checklist (TIC) was used to monitor SWPBIS team's process in implementing

key start-up and ongoing implementation activities (McIntosh et al., 2016).

Results revealed the most variance in fidelity was at the state level and highlighted the importance of state-level systems of support for sustaining SWPBIS at the school level. The authors indicated that states play an important role in initial and sustained implementation more than school or district, at least within the first 5 years of implementation. Among school-level predictors, elementary schools had higher odds of implementing at criterion than both middle and high schools. In other words, middle and high schools were at greater risk of low implementation or abandonment. The authors mentioned school characteristics may play a detectable role in sustained implementation, but other variables such as features of the practice, specific district or state support may mitigate the risks. In addition, schools that met adequate criterion for implementation in Year 1 were more likely to sustain. Researchers explained that SWPBIS teams may have put enough components in place to see a rapid change in student outcomes that put them at a small advantage in relation to other schools. The authors addressed the need for future quantitative research that could identify the most effective supports at the district and state levels for sustaining effective school practices (McIntosh et al., 2016).

McIntosh et al. (2018) also conducted a study to assess the extent to which school-level, practice-level, and district-level variables predict sustained implementation of School-Wide Positive Behavioral Interventions and Supports (SWPBIS) Tier 1 (i.e., universal supports) systems after 3 years. The researchers noted a need to examine how practices can be sustained by addressing both malleable and nonmalleable barriers.

Researchers collected data from 860 schools across 14 U.S. states implementing SWPBIS. The variables were divided into three levels: school-level, practice-level, and district-

level.   For school-level variables, the authors used schools' characteristics to assess each

school's relation with sustainability of implementation. For practice-level variables, they

included measures of fidelity of implementation of SWPBIS and a validated measure of factors

predicting sustained implementation of universal behavior support interventions. For district-

level variables, Critical Mass and Initiative Health were calculated to represent the

implementation context of the school district. In this study, Critical Mass was the proportion of

schools in the district implementing SWPBIS. Initiative Health was the extent to which the

initiative was increasing or decreasing in use across the district (McIntosh et al., 2018).

Multi-group structural equation modeling was used to assess the extent to which

school-level, practice-level, and district-level variables predicted adequate implementing

SWPBIS. Results indicated that only one school-level variable, school level (i.e., elementary

school), was a statistically significant predictor of Year 3 fidelity and in only the

Institutionalization stage ($p < .001$, OR =2.22). Two practice-level variables were predictors of

Year 3 fidelity across implementation stages: fidelity in Year 1 (Initial Implementation:

$p < .001$, OR = 3.64; Institutionalization: $p < .001$, OR = 3.77; Ongoing Evolution: $p = .004$, OR

= 4.41) and greater SWPBIS Team Use of Data (Initial Implementation: $p = .004$, OR = 1.73;

Institutionalization: $p = .018$, OR = 1.36; Ongoing Evolution: $p < .001$, OR = 1.82).   No other

practice-level variables had statistically significant associations with Year 3 fidelity after

accounting for the other predictors. Both district-level variables (i.e., Critical Mass and Initiative

Health) were statistically significant predictors of Year 3 fidelity but with some differences

across SWPBIS implementation stages.

The findings revealed that the practice-level variables of fidelity of implementation in

Study Year 1 and Team Use of Data were the strongest predictors of sustained implementation for schools in all three stages of implementation: Initial implementation, Institutionalization, and Ongoing Evolution. Nonmalleable school characteristics (e.g., poverty, enrollment, and urbanicity) were not strong predictors of sustained implementation. However, elementary school grade level was the only a significant predictor. The next strongest predictors were at the district level.   Both Critical Mass and Initiative Health were consistently significant predictors of sustained implementation. Regarding differences across stage of implementation, district-level predictors were strongly influential for schools early in implementation (McIntosh et al., 2018).

Researchers explained district-level variables may be the strongest predictors of sustained implementation of Tier 1 SWPBIS. They addressed that focusing on establishing district capacity may be more promising than taking a school-by school approach, particularly during installation and initial implementation. In addition, the authors suggested that districts could support initial and sustained implementation of behavior support practices by providing training and ongoing coaching in critical features of Tier 1 practices. They recommended that further studies should extend these results by including more direct measures of various factors related to both fidelity of implementation and district support (McIntosh et al., 2018).

Chitiyo and May (2018) conducted a study to examine school personnels' perceptions of the attributes of School-Wide Positive Behavioral Interventions and Supports (SWPBIS) that predict its sustainability. In this study, researchers used Rogers's diffusion theory. They noted the inherent variables of the innovation or practice may influence the sustainability of SWPBIS: (a) relative advantage, (b) observability, (c) compatibility, (d) complexity, and (e) trialability. The authors explained these inherent attributes by Rogers's diffusion theory.

According to Rogers's diffusion theory, *Relative Advantage* defined as the extent to which an innovation was perceived as superior to the one it is replacing in terms of outcomes produced.   If users see a new innovation producing better outcomes over older approaches they are likely to implement and sustain that innovation. *Observability* is the extent to which the outcomes of an innovation are visible to the users. Innovations with directly observable outcomes are more likely to be implemented and sustained. *Compatibility* is related to the degree to which an innovation is perceived as being congruent with current values, past experiences, responsibilities, and needs of users. The term of *complexity* refers to the degree to which an innovation is seen as difficult to understand and use. *Trialability* is the extent to which an innovation may be experimented with on a limited basis. New innovations that can be pilot-tested are more likely to be implemented and sustained because experimenting with an innovation allows users to determine whether it leads to more positive outcomes before it is implemented on a large scale (Rogers, 2003).

The study consisted of 111 school personnel employed in 24 schools implementing SWPBIS in southern region of Illinois. Participants consisted of 19 (17%) special education teachers, 57 (52%) general education teachers, seven (6%) school administrators, and 28 (25%) related service providers. Researchers collected data from a questionnaire developed based on the diffusion of innovation theory. The resulting questionnaire for this study had four sections. The first section collected demographic information. The second section included how participants had learned about SWPBIS. The third section focused on measuring the sustainability of SEPBIS. The last section consisted of the attributes of SWPBIS. An expert panel consisted of researchers with knowledge about SWPBIS and diffusion of innovation theory

checked the questionnaire for face, content, and validity (Chitiyo & May, 2018).

Researchers conducted a hierarchical regression analysis to examine the specific attributes of SWPBIS. The results in descriptive statistics revealed that most participants (n = 83, 75%) indicated that they learned about the SWPBIS model through a school-wide training program offered at their respective schools, 34 (31%) communication with colleagues, 34 (31%) from presentations at professional workshops or conferences, nine (8%) by reading a published journal article, and 18 (16%) of the participants indicated they learned through university coursework. In hierarchical regression analysis, a total of nine predictors were entered into the regression model to identify the attributes of SWPBIS: (a) relative advantage, (b) observability, (c) compatibility, (d) complexity, (e) trialability, (f) job position, (g) years of experience with SWPBIS, (h) work experience, and (i) education level. The results indicated observability and relative advantage were the significant predictors of sustained implementation of SWPBIS (Chitiyo & May, 2018).

The authors found that a majority of participants learned about SWPBIS through university training and only 16% of the participants learned about SWPBIS through university coursework. It indicated there was a lack of academic training of school personnel and also a growing need to ensure that teacher education programs design and develop professional development opportunities on SWPBIS implementation. In this study, researchers indicated that there were two attributes of SWPBIS to predict its sustainability (i.e., relative advantage and observability). The authors explained that the relative advantage of SWPBIS may be conceptualized in terms of its ability to reduce the occurrence of problem behavior, enhance academic outcomes of students, create a positive school climate, and improve schools'

organization. For observability, the sustainability of SWPBIS was associated with clearly observable outcomes (Chitiyo & May, 2018).

In summary, researchers concluded that promoting the relative advantage and observability of SWPBIS was to enhance its sustainability. Therefore, the authors suggested a couple of actions. First, school administrators need to ensure that they have reliable data collection and monitoring systems in their schools. Having reliable data systems in place will provide school personnel with accurate data that may clearly show the outcomes and relative advantage of SWPBIS. Second, school personnel should monitor the procedural fidelity of SWPBIS to enhance the chances of producing desired outcomes. The authors also recommended that future research could explore whether strengthening the relative advantage and observability of SWPBIS (Chitiyo & May, 2018).

Table 1

Summary of Chapter 2 Findings

AUTHORS	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
Bambara, Nonnemacher, & Kern (2009)	Qualitative	25 participants from five distinct stakeholder groups. These groups included classroom teachers, school administrators, parents, external facilitators and internal facilitators.	Interviewers contacted the participants via e-mail and conducted a screening interview over the phone.	The findings reflect the multidimensional and interrelated nature of the factors perceived to either impede or enhance the implementation of IPBS.
Bambara, Goh, Kern, & Caskie (2012)	Quantitative	A total of 293 professionals with experience implementing IPBIS participated.	Participants were asked to complete a four-part questionnaire developed by the researchers. Responses were analyzed using the Predictive Software (PASW) Statistics.	Most all enablers were perceived to have a moderate to substantial impact on supporting IPBS practices.

Table 1 (continued)

AUTHORS	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
Coffey & Horner (2012)	Quantitative	257 schools were categorized as 147 sustainers and 111 non-sustainers by subsequent mailings.	Data were collected for two methods of assessment: the SET and TIC. The sample schools were asked to take part in a survey containing 40 questions about the sustainability components.	The three variables found to be most significant in the logistic regression models: administrative support, communication, and data-based decision making.
McIntosh, Mercer, Hume, Frank, Turri, & Mathews (2013)	Quantitative	The sample was composed 217 participants from 217 schools in 14 U.S. states.	The SUBSIST is a survey that includes items representing critical features that enhance sustainability of school-based behavior support interventions.	School Priority, Team Use of Data, District Priority, and Capacity Building were strongly correlated and significantly related to sustained implementation.
McIntosh, Predy, Upreti, Hume, Turri, & Mathews (2014)	Quantitative	The participants were 257 school team members or district personnel with knowledge of their school's SWPBS systems.	The *School-Wide Universal Behavior Sustainability Index: School Teams* is an instrument designed to assess the critical features that enhance sustainability.	Features related to administrator support and school team functioning were rated as having the strongest impact on both implementation and sustainability.
Mathews, McIntosh, Frank, & May (2014)	Quantitative	The respondents included school personnel from 261 schools across the United States who reported PBIS fidelity data during a 3-year period.	Data extracted for this study included SAS scores in 2006–2007, BoQ scores in 2009–2010, and ODR data in 2009–2010 from an extant database from Educational and Community Supports at the University of Oregon.	Regular acknowledgment of expected behaviors, matching instruction to student ability, and access to additional support were the strongest predictors of sustained implementation.
McIntosh, Kim, Horner, Mercer, & Strickland-Cohen (2015)	Quantitative	The study assessed a total of 860 schools across 14 states implementing SWPBIS.	Data came from the first year of a 3-year project examining implementation and sustainability of SWPBIS. School team participated through SUBSIST online.	Results regarding school demographics were consistent with existing SWPBIS research indicating little to no effects of these variables on implementation.

Table 1 (continued)

AUTHORS	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
Andreou, McIntosh, Kahn, & Ross (2015)	Qualitative	17 participants involved in sustaining Tier I SWPBIS over several years within a school district were interviewed and asked what events affected its long-term implementation.	Schools and participants were recruited by the district SWPBIS coordinator. Data were collected through one face-to-face interview conducted by the first author with each individual participant.	Examination of these data were generated from detailed interviews with 17 participants revealed 13 categories of critical incidents, including confirmation of previous findings and some unique contributions.
Pinkleman, McIntosh, Rasplica, Berg, & Strickland-Cohen (2015)	Qualitative	Participants were 860 educators with knowledge of the SWPBIS systems in their particular schools.	Participants completed the SUBSIST during the first year of a longitudinal study of implementation and sustainability of school- based interventions. The authors recruited participants through state SWPBIS coordinators in states with strong state networks	Thematic analysis produced 13 themes regarding enablers and/or barriers. The most commonly cited enablers were staff buy-in, school administrator support, and consistency. The most commonly cited barriers were staff buy-in, resources: time, and resources: money.
McIntosh, Mercer, Nese, Strickland-Cohen, & Hoselton (2016)	Quantitative	3,011 schools with 3 years of SWPBIS implementation and 1,242 schools with 5 years of SWPBIS implementation	All data for this study were extracted from an extant database maintained by the University of Oregon. Schools entered SWPBIS fidelity data through a free online application	Results highlight the importance of state level systems of support for sustaining SWPBIS and indicate that states play a significant role in initial and sustained implementation
McIntosh, Nese, Kittelman, Hoselton, Horner, Mercer, & Strickland-Cohen (2018)	Quantitative	Staff from 860 schools in 14 U.S. states completed a research-validated measure of factors associated with sustained implementation of school interventions during Year 1 of this study.	Data for the current study came from a 3-year, federally funded project examining implementation and sustainability of SWPBIS.	Results indicated that adequate implementation fidelity and better Team Use of Data for decision making in Study Year 1 were the strongest predictors of sustained implementation in Year 3.

Table 1 (continued)

AUTHORS	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
Chitiyo & May (2018)	Quantitative	Participants were 111 school personnel employed in schools implementing SWPBIS in a southern region of Illinois.	Data were collected through an online platform, *Qualtrics*. A total of 111 questionnaires were finally retained, yielding a response rate of 12.3%	The results suggest that observability and relative advantage are significant predictors of SWPBIS sustainability.

Chapter 3: Conclusions and Recommendations

The purpose of this research paper was to search the factors that sustain effective implementation of School-Wide Positive Behavioral Interventions and Supports (SWPBIS). This study focused on reviewing 12 studies to address the research question. Chapter 1 provided background information on the topic, and Chapter 2 presented a review of the research literature. In this Chapter 3, I discuss findings, recommendations, and implications from research findings.

Conclusions

I reviewed studies ranging of dates from 2009 to 2018 that investigated the factors related to sustainability of SWPBIS. Nine of the studies conducted quantitative research (Bambara et al., 2012; Chitiyo & May, 2018; Coffey & Horner., 2012; Mathews et al., 2014; McIntosh et al., 2013; McIntosh et al., 2014; McIntosh et al., 2015; McIntosh et al., 2018), and three of the studies focused on qualitative research (Andreou et al., 2015; Bambara et al., 2009; Pinkelman et al., 2015). Overall, many factors impacted the sustainability of SWPBIS: administrator supports, team work, school culture, use of data, staff buy-in, resources, data-based decision-making, professional development, family and student involvement, district priority, and training. After analyzing and reviewing the existing literature, I identified four crucial dimensions for sustainability of SWPBIS: (a) administrator support, (b) professional development and ongoing practice, (c) teacher/staff buy-in and commitment, and (d) use of data and effective team. Because these factors were as the most frequently cited and directly related to sustainability of SWPBIS, the synthesizing the findings from the literature may provide better understanding of sustainability of SWPBIS.

Administrator Support

Administrator support has been explicitly listed as an important factor related to a facilitator of sustainability in six studies (Andreou et al., 2015; Bambara et al., 2009; Bambara et al., 2012; Coffey & Horner, 2012; McIntosh et al., 2013; McIntosh et al., 2014; Pinkelman et al., 2015). Bambara et al. (2009) stressed school principal support plays in promoting the overall acceptance of SWPBIS. The absence of building principal support, acceptance, or even understanding of SWPBIS was viewed as a major barrier; not only because of their lack of leadership to promote new practices, but also because principals' own conflicting views about behavior management or inclusion can actively set up impediment that prevent SWPBIS from occurring in their school.

According to McIntosh et al. (2013), supportive administrators were most likely to sustain SWPBIS. The authors cited that many articles emphasized the important role in administrator support, but administrator support were most effective when they empowered the school team to implement effectively and use of data for decision making. McIntosh et al. (2013) suggested school administrators should provide leadership by communicating team decisions regularly with all staff members and feedback to staff regarding implementation efforts. Coffey and Horner (2012) identified that together the sustainability features of administrative support combined with communication and data-based decision- making create the best-fitting model of sustainability for SWPBIS. Andreou et al. (2015) found the principal's ability to listen and respect what has been done was critical to durability of practice. Pinkeman et al. (2015) also indicated improving administrator support appears to be a worthwhile focus to improving the sustainability of SWPBIS. In the study, one respondent wrote, "Administrative support is the

most crucial part if PBIS will be effective. Without it, no matter how hard the team will try to change things, it will not work" (Pinkeman et al., 2015, p. 175).

Professional Development and Ongoing Practice

Professional development, ongoing practice, training, and coaching are critical like administrator support. Several studies cited the professional development and practice as a prerequisite for sustained implementation of SWPBIS (Andreou et al., 2015; Bambara et al., 2009; Bambara et al., 2012; Coffey & Horner, 2012; Mathews et al., 2014). Bambara et al. (2009) stressed ongoing support for professional development was important because PBIS requires a specific skill and mindset that differ radically from those involved in traditional management or classroom practice. Coffey and Horner (2012) found that technical assistance (i.e., training, practice, and coaching) has been identified as a critical factor in achieving high fidelity and sustainability. However, the authors also found that professional development may not be successful when there is a lack of ongoing practice and technical assistance.

The Bambara et al. (2012) study, which examined the factors supporting the implementation of PBIS, reported that the most experienced enabler fell within the domain of Professional Development and Practice. Mathews et al. (2014) suggested that building teacher acceptance of PBIS is important and school personnel need to know how to translate the core PBIS components into their daily routines. The authors cited access to additional support to address PBIS implementation in the classroom may also promote full classroom implementation when associated with improved teaching practices. These results may be effective in preventing problem behavior, ensuring academic success, and creating a positive context in SWPBIS. Furthermore, Andreou et al. (2015) found the importance of access to external expertise and

contact with a recognized researcher, consultant, or trained coach with outside information and tools. In the study, researchers cited the importance of involvement from coaches who were specially trained to provide SWPBIS implementation support. External coaches (i.e., district staff who assist school teams in implementing SWPBIS) helped staff evaluate and troubleshoot daily practices (Andreou et al., 2015).

Teacher/Staff Buy-In and Commitment

Teacher/staff buy-in and commitment to the practice is an essential feature contributing to sustainability of SWPBIS. Many studies demonstrated teacher/staff buy-in and commitment is necessary before SWPBIS can be implemented (Andreou et al., 2015; Bambara et al., 2009; Coffey & Horner, 2012; McIntosh et al., 2014; Pinkelman et al., 2015). Coffey and Horner (2012) found teacher buy-in and commitment was the second most frequently reported factor leading to sustainability. The respondent stated that teacher's accountability in the first year SWPBIS led to increased teacher commitment. McIntosh et al. (2013) stated staff commitment facilitates integration of the practice into the staff culture of the school and the belief. McIntosh et al. (2014) conducted a study to assess the perceived importance of specific contextual variables for sustainability of SWPBIS from a large, national sample of 257 school team members. The results showed staff buy-in or continued commitment to SWPBIS was the second most frequently identified factor for both implementing and sustaining SWPBIS in the SUBSIST survey. The Andreou et al. (2015) study yielded 13 critical incidents that represent the practitioners' perspectives regarding factors that help sustainability of SWPBIS. Staff ownership was one of the 13 critical incidents that facilitate sustained implementation of SWPBIS. The authors cited staff ownership centered on teacher buy-in and a high level of involvement in planning and

implementation and the grassroots nature of SWPBIS may allow it to continue.   The qualitative

research of Pinkelman et al. (2015) was to identify the most important perceived enablers and

barriers regarding sustainability of SWPBIS from school personnel representing 860 schools.

The authors found staff buy-in was the most frequent representing important factor as well as the

most frequent representing barrier to the sustainability of SWPBIS. However, when staff buy-in

was lacking, its absence was a significant barrier (Pinkelman et al., 2015).

Use of Data and Effective Team

Use of data and effective team functioning were highlighted the importance of the

quality of SWPBIS in both implementation and sustainability (Andreou et al., 2015; Coffey &

Horner, 2012; McIntosh et al., 2013; McIntosh et al., 2014; McIntosh et al., 2015).

Coffey and Horner (2012) found that use of data was one of the most critical predictors

of practice sustainability of PBIS. In addition, both use of data and effective team are closely

connected to each other. Use of data helps PBIS teams make decisions about programming and

modification of instructional practices and aspects of the learning and social environment.

McIntosh et al. (2013) found school team functioning, especially the use of data for decision-

making, was strongly correlated and significantly related to sustained implementation of

SWPBIS. McIntosh et al. (2014) found SWPBIS team functioning, including regular meetings

(i.e., at least monthly), knowledge and skills of the team, and meeting organization and efficiency,

were identified as the most important features.

McIntosh et al. (2015) assessed specific school team actions (i.e., team meetings, data

sharing with staff, and access to coaching) to measure factors predicting sustained

implementation of SWPBIS. The authors found school team actions, especially the frequency of

sharing data with all school staff, was significantly related to sustainability of SWPBIS. In addition, the actual frequency of sharing the data and the decisions based on them with the entire staff on a regular basis may enhance sustainability. In qualitative research of the Andreou et al. (2015) study, SWPBIS team effectiveness and use of data were perceived as strong factors to enhance sustainability of SWPBIS. The authors found effective teams were able to maintain the conversations about SWPBIS at the school level and allowed people the space to voice concerns and share insights. Use of data also showed data collection as supporting high levels of implementation fidelity and the importance of self-sustaining feedback loops (Andreou et al., 2015).

Other Factors

As was stated above, administrator supports, professional development and ongoing practice, teacher/staff buy-in and commitment, and use of data and effective team were as the most frequently cited factors influencing sustainability of SWPBIS. There were also other factors to sustain implementation of SWPBIS. These factors were also closely related to each other. Bambara et al. (2009) found parent and student involvement in the SWPBIS process as an important enabler. It is not only to help PBIS team gain insight into the students' misbehaviors, but also to foster student self-determination and responsibility for her or his own behavior change. Resources were also highlighted in current studies. Several studies indicated a lack of resources has been identified as a significant barrier to implementation of SWPBIS (Bambara et al., 2009; Bambara et al., 2012; Coffey & Horner, 2012; Mathews et al., 2014; Pinkelman et al., 2015). Pinkelman et al. (2015) found time and money were the most frequently identified

barriers. Bambara et al. (2012) stressed insufficient time for the school team to meet, plan, and implement together is often a problem for sustaining implementation of SWPBIS.

Mathews et al. (2014) stressed although PBIS is a school wide approach, individual teachers may improve the quality and durability of implementation through PBIS classroom practices. The authors found developing a common underlying framework of expectations, values, and systems of support was critical and it is also important to focus on helping school personnel translate these core values into their everyday classroom teaching practices. McIntosh et al. (2018) emphasized the importance of adequate implementation fidelity. Sustainability is not merely the continued implementation of programs, but a continued implementation with high fidelity. The authors suggested that measures for high fidelity may include more direct measures of various factors related to both fidelity of implementation and district support (McIntosh et al., 2018).

Table 2

Factors Impacting Sustainability of SWPBIS

STUDY	FACTORS SUSTAINING EFFECT AND IMPLEMENTATION OF SWPBIS
Bambara et al. (2009)	- School culture - Administrative leadership and support - Structure and use of time - Ongoing professional development - Family and student involvement
Bambara et al. (2012)	- Professional development and practice - School culture - Belief, Time - Training
Coffey and Horner (2012)	- Administrator support - Data-based decision - Resource (Funding) - Staff buy-in - Teaming, Training

Table 2 (continued)

STUDY	FACTORS SUSTAINING EFFECT AND IMPLEMENTATION OF SWPBIS
McIntosh et al. (2013)	• School priority • (Supportive administrators and Effective team) • Use of data for decision making • Capacity building
McIntosh et al. (2014)	• Administrator support • School team functioning • Staff support, Parent involvement • Integration into typical practice
Mathews et al. (2014)	• Regular acknowledgement of expected behaviors • Matching instruction to student ability • Access to additional support
McIntosh et al. (2015)	• School team action (especially the frequency of sharing data with whole school staff)
Andreou et al. (2015)	• Continuous teaching, Positive reinforcement • Team effectiveness, Staff ownership • School administrator involvement • Adaptation, Community of practice • Use of data, Involving new personnel • Access to external expertise • Maintaining priority, Staff turnover
Pinkelman et al. (2015)	• Staff buy-in • School administrator support • Resources (Time and Money) • Consistency
McIntosh et al. (2016)	• State level support
McIntosh et al. (2018)	• Adequate implementation fidelity • Team use of data for decision making • District level (Critical mass and Initiative health)
Chitiyo and May (2018)	• Relative advantage over the traditional disciplinary • Observability of SWPBIS

Recommendations for Future Research

The current studies provided important advice for both educators and researchers by identifying factors sustaining implementation of SWPBIS. However, there were also many

limitations in the twelve studies. Several limitations should be noted when interpreting the findings.

First, all the studies were conducted in the USA or Canada to identify factors to sustain SWPBIS. Although these studies were designed to include the diverse perspectives of different stakeholders across various states, research should not assume universality outside of the scope of findings. Future research should explore the factors related to sustainability at an international level.

Second, there was a lack of extensive assessment on classroom implementation. Students spend the vast majority of their school day in the classroom. Classroom teachers have regular and ongoing opportunities to implement PBIS practices in their classrooms by creating environments that increase the likelihood of students learning academic and behavioral skills. The classroom teachers are the core of success in SWPBIS. Although SWPBIS is a school-wide approach, the quality and durability of implementation may be contingent on the extent to which individual teachers implement PBIS classroom practices with high fidelity. The programs with high implementation fidelity will have a more positive impact on student outcomes. Thus, future research should focus on classroom-level implementation of SWPBIS.

Third, the majority of samples in the studies were elementary schools and Tier 1 interventions. There remain uncertainties between school grade level and sustainability of SWPBIS. Future research should explore middle or high school levels related to the sustainability of school-based positive interventions and also investigate for the full multi-level approach by developing tools that measure the sustainability of all three tiers of intervention in PBIS.

Finally, in terms of future research, it is necessary to conduct the quantitative analysis of longitudinal implementation of practice. Researchers also need to understand about how schools overcome failures or barriers to sustainability by conducting more in-depth qualitative research. Both quantitative and qualitative research could help us better advance knowledge for the sustainability of SWPBIS.

Implications for Current Practice

PBIS emerged from the controversy surrounding the use of aversive consequences with people with developmental disabilities. Instead of punishing students for not following rules, teachers focus on modeling and teaching expected behaviors through multi-tiered system. That perspective could change our philosophies on managing student behavioral problems. There were numerous effective and efficient practices that had been abandoned within a few years. PBIS is often referred to as a "program" because those terms are easy to understand. However, that is one of the myths in PBIS. PBIS is described as a framework and approach that provides the means of selecting, organizing and implementing these evidence-based practices.

Although the PBIS framework provides the systems and tools for establishing a continuum of evidence-based practices, many educators still cite student discipline and classroom management as primary areas of concern. It is also true that a lot of teachers/staffs are not sufficiently prepared to sustain positive behavior interventions and supports for misbehaviors. The most important line of current research is the systematic sustained implementation of the PBIS framework. For sustaining PBIS, it is also important to be aware of barriers throughout implementation of SWPBIS. With systems of continuous regeneration, SWPBIS can be more effective, efficient, and sustainable.

Summary

Many factors were identified to influence sustainability of SWPBIS from numerous researches for decades. The findings of these studies showed sustainable implementation of SWPBIS are possible through the use of data for decisions, teacher/staff commitment, professional development/ongoing practice, effective school PBIS team, administrative supports and other factors.

In South Korea where I am working as a teacher, we had the corporal punishment in a school for decades. Many researches revealed the aggressive and aversive punishment was not effective and ethical. Now it is prohibited from a law and we need better systems. Positive Behavior Interventions and Supports could be an alternative system in South Korea.

I believe a school needs a good disciplinary behavior system in order to make better education. However, sustaining the system is more difficult. Many teachers also have seen numerous behavioral programs come and go. Maybe teachers can assume the same expectations of PBIS. That is the major reason that I focused on the sustainability of SWPBIS.

As an educator, it is my job to accept responsibility for handling behavior problems in my own classroom. We should know how the discipline system is operating and sustaining. Because teachers are rooted in education, I believe that it is important for educators to study how to manage student discipline and sustain positive behavior interventions for desirable behavior as primarily a teacher's job.

The studies I reviewed have given me additional information on strategies to sustain implementation of SWPBIS. The purpose of the paper was to help educators that still have problems with sustaining implementation of PBIS in school settings as a main concern.

I strongly believe PBIS help teachers to build on positive behavioral philosophies and processes designed to improve school climate. In PBIS, we can prevent inappropriate behavior in our schools through evidence-based tools, not punishing students.

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