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Research Article

Schoolwide Positive Behavioral Interventions and Support Practices: Review of Studies in the Journal of Positive Behavior Interventions*

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Abstract

Schoolwide Positive Behavioral Interventions and Support (SWPBIS) focuses on interventions in order to meet the social behavioral demands of schools with the help of a three-tiered model. The main aim in SWPBIS is to ensure behavioral success and academic achievement of students in schools. By analyzing the related studies it was seen that there are many studies focusing on the effectiveness of SWPBIS practices in schools and there is an ascending trend in the application of SWPBIS in schools. As a result, this study was conducted to review the experimental and quasi-experimental studies related to the SWPBIS published in the Journal of Positive Behavior Interventions (JPBI) between 1999 and 2015. The studies were examined in depth by using epistemological document analysis in 6 categorical areas: (a) purpose, (b) participants, (c) dependent variables, (d) method, (e) limitations, and (f) recommendations. Findings are discussed in accordance with the relevant literature. Finally, new proposals were made for new research and applicability in other countries.

Keywords

Schoolwide Positive Behavioral Interventions and Support (SWPBIS) • Positive Behavior Support (PBS) • Epistemological document analysis

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Schools are valuable settings in that they provide children, families, educators, and community members with chances to learn, teach, and grow. These settings are able to present positive adult and peer examples, various and daily chances to have academic and social achievement, and permanent peer and adult relations promoted by social exchanges (Sugai et al., 2000).

Discipline problems such as widespread alcohol, drug abuse, and bullying shown in schools in the late 1990s, focused everyone's attention on these problem behaviors (Sugai & Horner, 2002). Such problem behaviors increasing steadily in schools pushed people and policy makers to search for new solutions to prevent these problem behaviors in schools. As Skiba (2000) said, traditional methods such as zero tolerance, strict rules and punishment, and others were of no use. There was also no evidence-based research proving the positive effect of these methods on students. As Sugai and Horner noted, such systems not using positive behavior supports caused increases in the problem behaviors that needed to be reduced. In a similar way, Costenbader and Markson (1998) stated that exclusion and punishment of problem behaviors are not effective in the long term. Some types of punishment can even be rewarding and cause problem behaviors to continue. "Traditional school discipline practices" (TSDP) (Scheuermann & Hall, 2011, pp. 12–13) and PBS (Positive Behavior Support) are compared in Table 1.

Table 1
Comparison of TSDP and PBS

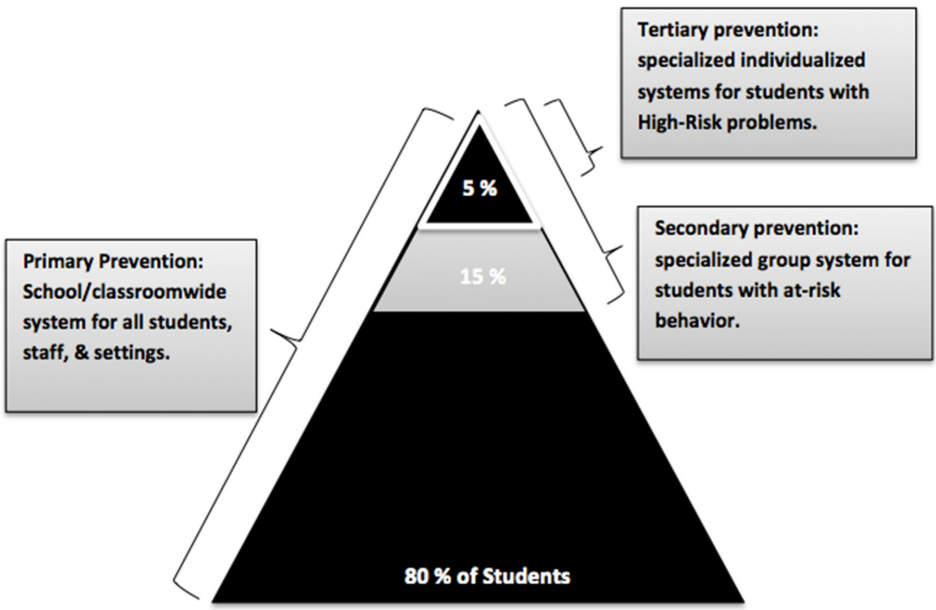
TSDP	PBS
· Preventing problem behaviors with zero tolerance, strict rules, and punishment	· Preventing problem behaviors with positive behavior support
· Quick and easy to apply	· Long-time commitment and planning
· No evidence	· There are many evidence-based practices
· Data are not so important	· Data-based decision making
· Functions of behavior are not important	· Functions of behavior are very important
· Focus on inappropriate behavior	· Focus on positive behavior
· Intervention is applied after problem behavior occurred (Consequence based)	· Prevention of inappropriate behavior is targeted (Antecedent based)
· Less preferred	· Steadily increasing usage in schools
· Not based on team	· Team-based
· No need to change school systems	· System changes

Sprague and Horner (2006) indicated the main points of a schoolwide system for positive behavior support are: (a) problem behavior in schools is not only an important social challenge but also an obstacle to effective learning; (b) it has not been proven that conventional "get tough" approaches are effective; (c) a positive social culture needs to be established first through describing, teaching, and rewarding appropriate behaviors as the basis for all behavior support; (d) further behavior support processes beased on principles of behavior analysis are essential for students who need greater behavior support; (e) school staff are able not only to gather and utilize quality enhancement data systems, but also appreciate the value of those systems in terms of enhancing schools (pp. 413–427).

PBS is neither a recent intervention package nor a recent behavior theory; it is rather a practice of a systems approach based on behavior to improve the capacity of schools, families, and communities with the aim of building effective settings that enhance the harmony or connection among practices validated by research and the settings where teaching and learning happen. It is focused on building and maintaining school settings that enhance behavioral outcomes for all children and youth through decreasing the effectiveness, efficiency, and relevance of problem behavior and increasing the functionality of desired behavior (Sugai et al., 2000).

SWPBIS Framework

SWPBIS is defined by the processes arranged around three major themes: Prevention, Multi-Tiered Support, and Data-based Decision Making. Contributing to the prevention of problem behavior are these principles: (a) describing and teaching basic behavioral expectations; (b) approving and awarding appropriate behavior (e.g., obeying the rules of the school, secure and considerate peer relations, and academic work/involvement); and (c) building a regular continuation of outcomes for problem behavior. Attention is focused on building a positive social atmosphere where expectations of behavior for students are greatly foreseeable, directly taught, constantly approved, and actively observed (Sprague & Horner, 2006).



Source: http://www.icareby.org/sites/default/files/spr352sugai.pdf

Figure 1. Three-tiered prevention continuum of positive behavior support (Sugai & Horner, 2006).

Horner, Todd, Lewis-Palmer, Irvin, Sugai, and Boland (2004) explained the Seven Key Features of Schoolwide Positive Behavior Support as: (a) describe 3-5 expectations for appropriate behavior schoolwide; (b) actively have all students learn the schoolwide expectations of behavior; (c) observe and approve of students when they engage in expectations of behavior; (d) correct problem behaviors by using a continuation of behavioral outcomes regularly administrated; (e) collect and use data about student behavior in order to assess and direct decision-making; (f) get leadership of schoolwide applications from a director who 1. organizes a team to establish, carry out, and administer the schoolwide behavior support attempt in a school; 2. works as a team member; 3. assigns enough time to carry out behavior support processes; and 4. places schoolwide behavior among the most important three enhancement objectives for the school; (g) get district-level support in the form of 1. education in schoolwide behavior support applications, 2. procedures that focus on the expectations that schools are secure and arranged for effective learning, and 3. expectation that data about problem behavior models be collected and reported.

Table 2
The Procedures and Systems Defining Tiers of SWPBS Implementation (Horner, Sugai, & Anderson, 2010)

Tiers of Implementation	Procedures: Practices Focused on Students	Systems: Practices Focused on Faculty and Staff
Primary Prevention	• Schoolwide implementation • Behavioral expectations for whole school defined and taught • Rewards for appropriate behavior • Continuum of consequences for problem behavior • Schoolwide classroom management practices • Family involvement practices • Collection and use of data for decision-making about student-focused interventions	• Team-based implementation • Administrative commitment • Clear policies focused on student social behavior • Staff annual orientation to SWPBS • Universal screening for behavior support • Use of fidelity data to guide implementation and sustained use • District commitment to SWPBS implementation
Secondary Prevention	• Direct instruction on skills related to daily organization, social interaction, and academic success • Increased structure • Increased frequency and precision of sale feedback • Assessment and intervention linked for academic and behavioral challenges • Reward for problem behavior minimized • Home-school communication and collaboration increased	• Early identification and support development • Progress monitoring and reporting • Regular team meetings to both implement and assess interventions • Allocation of FTE to coordinate intervention implementation • Administrative and team process for selecting secondary prevention interventions • Use of fidelity data to guide implementation and sustained use
Tertiary Prevention	• Strengths-based assessment • Functional behavioral assessment • Applied behavior analysis • Intensive instruction • Self-management	• Behavior support team • Progress monitoring system ✔ intervention fidelity ✔ intervention impact • Reporting process for families, students, faculty, administration • Access to behavioral expertise • Use of fidelity data to guide implementation and sustained use

Source: http://www.dropoutprevention.org/sites/default/files/horner_sugai_anderson_2010_evidence.pdf

PBS has been used as an approach that allows schools to describe and activate these systems and processes in the last several years. PBS has been among the notable policies and applications in state schools in the last 7 years (Walker, Cheney, Stage, Blum, & Horner, 2005). Over 4,000 schools in the United States are now applying SWPBIS, and it is expected that the number of these schools will increase by 100% in the near future (U.S. Dept. of Education, 2005). According to the report of the Technical Assistance Center on Positive Behavioral Interventions and Supports (U.S. Dept. of Education, 2005), almost 5,000 schools in 40 states have embraced an approach in order to positively and proactively deal with how all students in a school behave where SWPBS is used, and it is defined as "a wide range of fundamental and specified processes that aim to achieve significant social and academic consequences besides impeding problem behavior with all of the students" (Sugai et al., 2010). Different stages of embracing SWPBIS are now seen in at least 7,000 schools in the United States (Bradley, Doolittle, Lopez, Smith, & Sugai, 2007). In total, SWPBIS has been adopted by 7,953 schools. Overall, 47 states claim that they are at some level of application (Spaulding, Horner, May, & Vincent, 2008).

More than 9,000 U.S. schools are now implementing SWPBIS in order to decrease disruptive behavior problems by applying the principles of behavior, social learning, and organizational behavior (Bradshaw, Mitchell, & Leaf, 2010). It is known that at least 13,000 schools in the US and Canada are now applying SWPBIS (Center on Positive Behavioral Interventions and Supports, 2010), and over 14,000 schools across the US have been educated in SWPBIS known to not only decrease behavior problems but also to foster a positive school atmosphere (Debnam, Pas, & Bradshaw, 2012).

Although the number of schools applying SWPBIS is increasing each year, Sugai et al. (2000) especially emphasized some important components of SWPBIS such as the description, embracement, and maintained use of procedures, systems, data-based decision making, and processes for successful applications in schools.

New journals such as JPBI, technical assistance centers such as PBIS, and staff preparation programs have employed PBS as the main point of their aims and activities. The aim of this study is to analyze the studies addressing SWPBIS practices in the single international level academic journal related to PBS which is named JPBI and published since 1999. The findings are discussed taking into consideration the related literature. After discussing, "How can 'SWPBIS' be applied in other countries? and What kind of regulations are needed?" some practical advice and recommendations are developed.

Method

As this research investigates articles thematically published in JPBI related to PBS practices in schools, the model for this research is "descriptive." JPBI mainly offers

research-based articles about positive behavior support to use in school, home, and social environments. Among typical elements are experimental research; argument, literature reviews, theoretical articles; programs, applications, and novelties; forum, and media checks.

According to the investigation conducted by Thomson Reuters (2015), the impact factor of this journal is 1.409 and the rates of Ranking by the year 2014 is 76/119 in Clinical Psychology and 15/39 in Special Education. This journal is preferred for being the single journal related to PBS applications. Epistemological document analysis was used as the data collection method in this research. In the first stage of the document analysis, studies identified as being in the sample group were downloaded from the JPBI website and classified according to publication years. In the second stage, all studies were reviewed and classified according to topics. Between the years 1999-2014, a total of 61 studies were identified as related to the PBS; 31 of these studies are related to family-centered PBS, seven are related to the functional behavior analysis, six are related to class- wide PBS, and 17 are related to SWPBIS. In the third stage, 17 studies whose independent variable was SWPBIS were examined in depth in six categorical areas: (a) purpose, (b) participants, (c) dependent variables, (d) methods, (e) limitations, and (f) recommendations. The findings were tabulated. After the first researcher examined each of the articles in-depth, an audit trail was made until all of the articles in this study were analyzed by the authors. In this process, the information on the table was read together and if new information was required, it was added to the table. Researchers create an audit trail by recording the research practice through journaling and memoiring, having an inquiry record of all practices, creating a data collection history, and documenting data analysis processes openly. This record is then analyzed by an outside evaluator considering these questions: Are the findings data based? Do inferences use reason? Is the grouping format relevant? Are the research decisions and procedural changes justifiable? How prejudiced is the researcher? What methods were used to promote reliability (Schwandt & Halpern, 1988)? The chronological record is deemed reliable as a result of this work of documenting research and an examination of the documentation by an outside evaluator.

Findings

In this section 17 studies whose independent variable was SWPBIS were examined in depth within six categorical areas and the findings were tabulated. Additionally, results of *in-depth investigation by using* content analysis of (a) dependent variables, (b) settings of the studies, (c) school types, (d) methods, and (e) suggestions made in the studies are presented in a systematic way in the following tables.

Table 3
Examining the Studies in Six Categorical Areas

Author	Dependent Variable	Subject/ Keywords	Aim of the study	Participants	Setting	Method	Limitations	Recommendations
Kartub, Taylor-Greene, March, and Horner (2000)	Too much corridor noise during lunch time	SWPBIS	To deal with too much noise during lunch time	525 students in Grades 6 through 8	A rural middle school in western Oregon	Descriptive, non-experimental design	The findings do not demonstrate empirical control; therefore, connecting the intervention with behavioral change can result in no conclusion.	Provided that schools intend to adopt PBS, it is required to try harder to implement this kind of intervention practice.
Scott (2001)	Students needing restrictive disciplinary actions as a result of problem behaviors	SWPBIS	To implement an extensive system of schoolwide PBS and define the primary schoolwide prevention procedure	Grades K through 5; about 500 students	Elementary school in Kentucky	Case study	A better scientific procedure could have been designed to evaluate the impact of positive behavioral support.	New PBS plans can be implemented for other problem behaviors. In addition, questions about the respective influence of individual elements are still ambiguous and they need more study. Groups that are conventionally represented excessively in discriminative policies of discipline must be concentrated on in research.
Fox and Little (2001)	Challenging behaviors	SWPBIS	To define the differences and commonalities in using SWPBIS	8 children of 51 who were 1 to 4 years old	Preschool	A mixed model	The staff included numerous components of the characteristics of SWBS in their program before cooperating in the study.	Cooperation that fosters building a broad and fundamental model to address problem behavior and developing a climate that fosters the occurrence of appropriate behavior.
Luiselli, Putnam, and Sunderland (2002).	The number of detention slips issued each academic year	A longitudinal (4-year) evaluation of a behavior support program	To reduce the number of school detentions	The participants consisted of whole student population.	Middle school.	ANOVA & frequency analysis	There are other capabilities that should be perceived as relative to data analysis.	Evaluating distinctive effects should be achievable by comparing other school disciplinary approaches, and finding out if prevention attempts are successful should be achievable with the help of evaluations of results made for more than 1 year.
McCurdy, Mannella, and Eldridge (2003)	Increasing rates of student disruptive behavior	SWPBIS	Implementing a SWPBS model for reducing disruptive behavior	Approximately 500 students (Grades K through 5)	Elementary school	Descriptive case study	The decisiveness of findings emerging from a case study, in contrast to a true or quasi-experimental design	A model for urban schools and behavioral health-care agencies can be developed dealing with the different types of problem behaviors.

Author	Dependent Variable	Subject/ Keywords	Aim of the study	Participants	Setting	Method	Limitations	Recommendations
Walker, Cheney, Stage, Blum, and Horner (2005)	Students at risk for school failure	PBS systems, school-wide screening, rating scale instruments, office discipline referrals	To assess the social and behavioral functioning of students identified as at risk	72 students at risk	Three schools that participated in this study	Descriptive case study	The absence of baseline data on the dependent measures or control schools; the size of the sample. The results about the SSRS and ODR are limited mainly to the teacher's understanding.	Longitudinally monitoring all schools for a long time would be useful. A controlled study involving a bigger sample of children could more strongly deal with the issues considered in the present study.
Bohanon, Fenning, Carney, Minnis-Kim, Anderson-Harriss, Moroz and Pigott (2006)	The number of monthly discipline referrals	SWPBIS	To evaluate the impact of a high school PBS model on school-wide discipline outcomes.	1,800 high school students	High school	A mixed model	Limited data about planning and application. Insufficient examples of high school application over years. Longer-dated evaluations of high school PBS practices are needed.	These are two main fields suggested for future efforts in the field of high school: (1) planning and application attempts to support groups and individuals in secondary schools and (2) longer-dated evaluations concentrated on the continuation of PBS work in high schools.
McIntosh, Chard, Boland and Horner, (2006).	The number of office discipline referrals and reading skills for students.	SWPBIS	To implement a three-tier prevention model for both reading and behavior support.	K–Grade 3 students (N =1,653. The study also concentrated on all students in the district who were third-graders during the 2001-2002 school year (N = 442)	Six elementary schools.	A descriptive study	Not more than one district was worked on, and there was no district compared in the absence of school-wide reading and behavior procedures. No students other than K-Grade 3 were studied.	Greater questions are created by the findings of this work, and these are needed to be revealed through further research: (a) How do the patterns differentiate in Grades 4 through 8? (b) Are the models different in schools that do not adopt the systems of behavior and reading support?
Scott and Martinek, (2006).	Team attending PBS applications.	Positive Behavior Support in School Settings, Data-Based Decision Making	To examine the efficiency of in-person coaching methods and the entry and use of data in PBS schools.	42 PBS school teams involving in PBS follow-up workshops.	Four elementary schools.	A descriptive study	Only some schools started application simultaneously. The degree of schools' understanding the project is measured and evaluated only through SET data.	Studying the relations between the range of possible evaluation tools and the foreseeability of efficient school-wide application should be concentrated on more carefully by further research.

Author	Dependent Variable	Subject/ Keywords	Aim of the study	Participants	Setting	Method	Limitations	Recommendations
Franzen and Kamps (2008)	Problem behaviors	SWPBIS; elementary school; positive behavior support; single-case design	To study the application of a recess intervention within the SWPBIS context	180 first, second, and third-grade students	Elementary school	A multiple baseline design	The study did not control for what caused the change; students transitioned from one grade to the next during data collection. It was difficult to observe student behavior as a result of the numerous students found on the playground at a certain time. Integrity checks of teacher implementation were not finished, and data were not gathered for each recess supervisor; low interobserver agreement for some behaviors.	Recommendations include continued applications of setting-specific SWPBIS programs, such as recess interventions in urban schools, to decrease inappropriate behaviors and improve general safety. Benefits potentially include more positive teacher-student interactions, more effective supervision of school playgrounds, and improvements in cooperative student interactions.
Todd, Campbell, Meyer and Horner (2008)	Problem behaviors	Check in-check out behavior education program; targeted intervention; secondary intervention; check and connect; schoolwide interventions; challenging behaviors; elementary school students	To determine if there is a functional relation between the implementation of The Check In–Check Out Program (CICO) and a reduction in problem behaviors	4 elementary school-age boys	Elementary school	A multiple baseline across subjects design	The fact that schoolwide PBS systems were being used in the school makes extrapolation of the CICO findings to other school contexts less certain. Reliability of the FBA measures was not evaluated in formal way. The unintentional treatment intervention for Chad and the general length of the intervention. It was impossible to record the sustainability of effects due to the school year finishing.	Extra research is required to determine those students for whom CICO would be most supportive and to identify adaptations that would be appropriate for escape-motivated students using the program. Future research is required to record if CICO processes can be maintained by staff with fidelity and efficiency over long time periods.
Bambara, Nonnemacher, and Kern (2009)	Problem behaviors	Individualized PBS; tertiary interventions; school teams; systems change; sustainability; qualitative research	To evaluate team members' perceptions of being the main obstacles to applying the IPBS in school environments	25 participants from five different shareholder groups	Public school settings	A qualitative design involving semi-structured interviews	N/A	N/A

N/A: Not available.

Author	Dependent Variable	Subject/ Keywords	Aim of the study	Participants	Setting	Method	Limitations	Recommendations
Flannery, Sugai, and Anderson (2009)	Leadership team representation, faculty participation, and the role of acknowledgement systems	High school; SWPBIS; survey	To find out how appliers defined their attempts to embrace and utilize SWPBIS	Participants in this study involved members of SWPBIS teams in high schools	Sample high schools implementing SWPBIS	Qualitative design	Due to the fact that it was not a controlled sample, there was a possibility of occurrence of sampling bias. It was a small sample, and the survey utilized in the study was created for the study, and has not undergone accurate psychometric assessment.	Experimental studies are greatly needed to assess SWPBIS in high schools. Moreover, the connection between SWPBIS and school success should be assessed (e.g., raised grades, success points, and rates of graduation percentages). Experimental studies are necessary.
McIntosh, Campbell, Carter, and Dickey (2009)	Office discipline referrals	Behavioral assessment; functional assessment; challenging behavior(s); PBS(s)	To investigate the effectiveness of a tier- two intervention	36 elementary school students	Six public elementary schools	A mixed model	The study is based on exact assignment to groups, and the validation of function evaluation was not made through direct observation or functional analysis. In addition, indirect measures of behavior were used as the dependent variables. The pre-post quasi-experimental design adopted did not control for certain threats to internal validity (e.g., time). The sample size is small for group design.	Future research; direct and systematic replication of this research involving other groups and environments will enable enhanced outside validity and generalization of findings.

Author	Dependent Variable	Subject/ Keywords	Aim of the study	Participants	Setting	Method	Limitations	Recommendations
Bradshaw, Mitchell, and Leaf (2010)	Student suspensions, office discipline referrals, and academic success	SWPBIS ; randomized controlled test; efficiency research; suspensions; office discipline referrals; achievement	To examine the impact of training in SWPBIS	37 elementary schools	Public elementary schools	A mixed model	N/A	N/A
Dunlap, Iovannone, Wilson, Kincaid, Strain (2009)	Problem behavior	PBS Model; schools; individualized behavior support	To detail a rationale for a standardized approach to the improvement and application of SWPBIS at the individual level	The first case, "Mike," was from the Florida cohort of participants, and the second, "Jose," was in the Colorado cohort.	Two school-age students	Case study	N/A	Besides efficiency, outside validity and the degree of replicating the pattern in typical school settings are significant points. Critical questions wait to be answered about the level of knowledge needed on teams to apply the model efficiently.
Simonsen, Britton, and Young (2010)	Problem behavior	Alternative settings; schoolwide interventions; SWPBIS; PBS	N/A	39 students in the 1st school year, 52 students in the 2nd year, and 53 students in the 3rd year	Non-public school	Descriptive, single-subject case study (A-B design)	This research did not adopt an empirical pattern. Measures of inter-rater reliability were not calculated. Fidelity of SWPBIS application was not recorded by an external auditor.	Further research should adopt experimental (either single-subject or group) research to investigate the efficiency of applying SWPBIS in alternative school settings.

N/A: Not available.

Table 4
Classifying the Dependent Variables of the Studies

Dependent Variable	Author	*f*	%
1. Managing problem behaviors	(Kartub, Taylor-Greene, March, and Horner, 2000; Scott, 2001; Fox and Little, 2001; Luiselli, Putnam, and Sunderland, 2002; McCurdy, Mannella, and Eldridge, 2003; Bohanon, Fenning, Carney, Minnis-Kim, Anderson-Harriss, Moroz, and Pigott, 2006; Franzen and Kamps, 2008; Todd, Campbell, Meyer, and Horner, 2008; McIntosh, Campbell, Carter, and Dickey, 2009; Dunlap, Iovannone, Wilson, Kincaid, and Strain, 2009; Simonsen, Britton, and Young, 2010)	11	64
2. Evaluation of the team	(Scott and Martinek, 2006; Bambara, Nonnemacher, and Kern, 2009; Flannery, Sugai, and Anderson, 2009)	3	18
3. Academic failure and problem behaviors	(Macintosh, Chard, Boland, and Horner, 2006; Bradshaw, Mitchell, and Leaf, 2010)	2	12
4. Academic failure	(Walker, Cheney, Stage, Blum, and Horner, 2005)	1	6

When the studies were classified according to their dependent variables it was seen that most of them were composed of "managing problem behaviors." The second group of dependent variables is "evaluation of the team." The other group of dependent variables is "both for academic failure and problem behaviors." And the last dependent variable is "academic failure."

Table 5
Classifying the Settings of the Studies

Setting	Author	*f*	%
1. Rural	(Kartub, Taylor-Greene, March, and Horner, 2000; Todd, Campbell, Meyer, and Horner, 2008; Bradshaw, Mitchell, and Leaf, 2010)	5	24
2. Urban	(Scott, 2001; McCurdy, Mannella, and Eldridge, 2003; Bohanon et al., 2006; Franzen and Kamps, 2008; Flannery, Sugai, and Anderson, 2009)	5	24

As we classified the studies according to settings in Table 5, the diversity of the studies according to settings is not so variable. The setting in seven studies cannot be determined. In some studies, the setting was "rural" and in others the setting was "urban."

Table 6
Classifying the School Types Involved in the Studies

School	Author	*f*	%
1. Elementary School	(Simonsen, Britton, and Young, 2010; Franzen and Kamps, 2008; Todd, Campbell, Meyer, and Horner, 2008; Macintosh, Chard, Boland, and Horner, 2006; Scott, 2001; McCurdy, Mannella, and Eldridge, 2003; Scott and Martinek, 2006)	7	41
2. High School	(Bohanon, Fenning, Carney, Minnis-Kim, Anderson-Harriss, Moroz, and Pigott, 2006; Fenning et al., 2006; Flannery, Sugai, and Anderson, 2009)	3	18
3. Middle School	(Kartub, Taylor-Greene, March, and Horner, 2000; Luiselli, Putnam, and Sunderland, 2002)	2	12
4. Pre-School	(Fox and Little, 2001; Bradshaw, Mitchell, and Leaf, 2010)	2	12

As seen in Table 6, most of the studies were conducted in elementary schools. In order of numbers per school type, the second one is High School, the third one is Middle School, and the last one is Pre-School.

Table 7
Classifying the Research Methods of the Studies

Method	Author	*f*	%
1. Mixed Method	(Bradshaw, Mitchell, and Leaf, 2010; Fox and Little, 2001; Bohanon et al., 2006; Macintosh, Chard, Boland, and Horner, 2006)	5	29
2. Descriptive/Case Study	(Simonsen, Britton, and Young, 2010; Scott, 2001; McCurdy, Mannella, and Eldridge, 2003; Walker, Cheney, Stage, Blum, and Horner, 2005)	4	24
3. Quantitative	(Bambara, Nonnemacher, and Kern, 2009; Flannery, Sugai, and Anderson, 2009)	2	12
4. Descriptive/Non-experimental	(Kartub, Taylor-Greene, March, and Horner, 2000)	1	6
5. Qualitative	(Luiselli, Putnam, and Sunderland, 2002)	1	
6. Experimental	Fransen Todd, Campbell, Meyer, and Horner, 2008)	1	6

As seen in the Table 7, in most of the studies descriptive/case study and mixed methodology were preferred by the authors. Descriptive, descriptive/non-experimental, qualitative, quantitative, and experimental methods are among the other methods used in these studies.

Table 8
Classifying the Limitations of the Studies

Limitations	Author	*f*	%
1. Lack of experimental control	(Kartub, Taylor-Greene, March, and Horner, 2000; Scott, 2001)	2	12
2. Not employing experimental study	(McCurdy, Mannella, and Eldridge, 2003; Simonsen, Britton, and Young, 2010)	2	12
3. Insufficient Sample Size	(Walker, Cheney, Stage, Blum, and Horner, 2005; Flannery, Sugai, and Anderson, 2009)	2	12
4. Limited Data	(Bohanon et al., 2006)	1	6
5. Limited Setting	(Macintosh, Chard, Boland, and Horner, 2006)	1	6

When the limitations were classified as in Table 8 it was seen that some common ones stood out, such as: lack of experimental control, not employing experimental study, insufficient sample size, limited data, and limited setting.

Table 9
Classifying the Suggestions of the Studies

Suggestions	Author	*f*	%
1. Application of this model for the same problem behaviors in other schools	(Fox and Little, 2001; McCurdy, Mannella, and Eldridge, 2003)	2	12
2. More efforts should be made in applying SWPBIS in schools	(Kartub, Taylor-Greene, March, and Horner, 2000).	1	6
3. Alternative PBS plans should be implemented for other problem behaviors	(Scott, 2001)	1	6
4. Comparative studies should employ alternative models	(Luiselli, Putnam, and Sunderland, 2002)	1	6
5. Longitudinal study should be conducted	(Walker, Cheney, Stage, Blum, and Horner, 2005)	1	6
6. Future studies focusing on evaluation instruments should be conducted	(Scott and Martinek, 2006)	1	6
7. Future studies focusing on empirical studies should be conducted	(Flannery, Sugai, and Anderson, 2009)	1	6
8. Replication of the studies with different participants	(Macintosh, Chard, Boland, and Horner, 2006)	1	6
9. Future studies focusing on experimental studies should be conducted	(Simonsen, Britton, and Young, 2010)	1	6

The suggestions made in the studies gathered and shown in Table 9 are very important for future studies.

Discussion

As seen in the findings of this study, the dependent variables in most of the studies were targeted for managing the problem behaviors in rural or urban elementary schools. Based on this we can say that **e**ducators and psychologists are mostly concerned about "problem behavior" in schools. When we reviewed the other sources in this study and outside the scope of this research we saw that effective evidence- based interventions and practices have been documented for addressing problem behaviors (Bohanon et al., 2006; Dunlap, Iovannone, Wilson, Kincaid, & Strain, 2010; Fox & Little, 2001; Franzen & Kamps, 2008; Kartub, Taylor-Greene, March, & Horner, 2000; Luiselli, Putnam, & Sunderland, 2002; McCurdy, Mannella, & Eldridge, 2003; McIntosh, Campbell, Carter, & Dickey, 2009; Scott, 2001; Simonsen, Britton, & Young, 2010; Todd, Campbell, Meyer, & Horner, 2008). Nevertheless, maintained and extended uses of these interventions and implementations have not been regular or extensive in other countries except the USA. The use of SWPBIS has an ascending trend day by day in schools, especially in the USA.

There are many studies showing the effectiveness of SWPBIS. This is one of the most important reasons for this method becoming widespread in schools (Anderson & Kincaid, 2005). The principles and technology of behavior analysis have been proved to be highly efficient for decreasing problem behavior and increasing students' social skills. These principles and techniques have lately been implemented schoolwide.

As seen in the studies above related to SWPBIS, the overall picture is encouraging. There are many evidence-based studies (Dunlap et al., 2010; Fox & Little, 2001; Kartub et al., 2000; Luiselli et al., 2002; McCurdy et al., 2003; McIntosh et al., 2009; Scott, 2001; Simonsen et al., 2010; Todd et al., 2008) showing the feasibility of this approach.

As the number of schools implementing SWPBIS increases, more schools are making efforts toward the implementation of this approach for both academic success and problem behaviors. As Sprague and Horner (2006) said, schools can enhance and show that change is related to valuable student consequences with the help of SWPBIS.

Beyond these there are some limitations as mentioned in the studies above such as "lack of experimental control," "not employing experimental study," "insufficient sample size," "limited data and limited setting." As SWPBIS has been applied in schools with great numbers of participants the chance of experimental control and employing experimental study is limited (Kartub et al., 2000; McCurdy et al., 2003; Scott, 2001; Simonsen et al., 2010). According to Sugai and Horner

(2006), the effects of SWPBIS are promising but some children do not respond sufficiently to the global model so new, more applicable SWPBIS plans should be implemented by researchers. Horner et al. (2010) mentioned in a similar way that as the field of education starts using evidence-based processes, consistent arguments will be appropriate in favor of standards for determining whether data supports an intervention's efficiency. Nevertheless, more research is necessary for better measuring the extent, communication effects with efficient intervention, and continuation of SWPBIS practice and results. Generally, the data have been obtained by using mixed methods (Bohanon et al., 2006; Bradshaw et al., 2010; Fox & Little, 2001; McIntosh, Chard, Boland, & Horner, 2006).

As Bradshaw, Koth, Thornton, and Leaf (2009) mentioned, even though policymakers, researchers, and educators are increasingly interested in schoolwide PBIS, comparatively little organized research utilizing randomized controlled test patterns has been conducted on the influence of PBIS. They reviewed how PBIS influenced staff reports that school administrative health prepared utilizing information from a group-randomized controlled efficiency test of PBIS and they demonstrated a noteworthy impact of PBIS on general administrative health, source effect, staff relationship, and academic prominence.

In another randomized controlled trials study conducted by Bradshaw, Waasdorp, and Leaf (2012) it was suggested that there are direct effects of SWPBIS on a variety of behavior problems, such as ODRs (Office Discipline Referrals), focusing challenges, aggressive or disruptive behavior, and enhancements in prosocial behaviors and feeling management. Prosocial behavior and feeling management have comparatively unique effects on PBIS in the literature.

Research conducted by Waasdorp, Bradshaw, and Leaf (2012) pointed out that students in schools where SWPBIS was applied exhibited less bullying and peer refusal according to teachers' reports than students in schools where SWPBIS was not implemented. Moreover, a notable relation appeared between grade level of early exposure to SWPBIS and intervention quality, and it indicated that children first exposed to SWPBIS earlier experienced the strongest impacts of SWPBIS on peer refusal patterns.

There were some limitations to our study. We did not try to present an extensive review of the literature on SWPBIS. Our aim was to identify the research that focused directly on the question of SWPBIS implementation and efficiency in the single international-level academic journal related to PBS (i.e., JPBI published since 1999). Other research in other journals can be dealt with in future studies. In this study we tried to gather important applicable sample studies so that SWPBIS models and applications can be adopted for future use for the problem behaviors.

In conclusion, SWPBIS has had a significant effect on improving school climate by attributing to it students' social competence and academic achievement. Although this method has been applied in many schools and supported with empirical studies, there are no applications in some countries. This method also can be implemented in other countries to minimize problem behaviors and raise academic achievement levels. The schools appropriate to apply this method can use SWPBIS for problem behaviors and academic failure. Limitations defined in this study are very important for the sake of future researchers dealing with them. The authors working on this study will increase SWPBIS applicability in their countries. By considering this study, practitioners in other countries may carry out the replication of the identified studies with different student participants in search of new models. Also, academicians working in related fields can conduct future studies focusing on experimental studies in cooperation with schools willing to adopt this method.

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