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Teacher implementation of precorrection and praise statements in Head Start classrooms as a component of a program-wide system of positive behavior support

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Abstract Although research has clearly supported the use of school-wide positive behavior support (PBS) in elementary school settings, data-based research has not been conducted to support program-wide PBS in early childhood settings. The purpose of this study was to specifically support teachers' use of universal features of program-wide PBS and to determine whether increases in the use of positive teacher behaviors, including precorrection and praise, were functionally related to decreases in students' problem behavior. Using a multiple baseline design, three teachers were introduced to an intervention to increase their use of precorrections and specific behavioral praise statements. A relationship was established between the three teachers' use of key features of program-wide PBS and the reduction of students' problem behavior in a small group setting. However, findings should be viewed as tentative and future research should explore the relative influence of each of the intervention components on preschool students' behavior.

Keywords Behavioral supports · Preschool · At-risk · Head start · Program-wide PBS · Interventions

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Introduction

Early childhood professionals have reported an increase in problem behaviors, such as aggression, in the classroom setting (Campbell 2002). For many children these early behavior patterns are not simply transient or indicative of normal developmental differences (Kauffman 2005; Stormont 2001; Walker et al. 2003). Research has documented that at least half of children who display problem behavior in preschool maintain such behavior patterns into elementary school (Campbell 1995, 2002). Although extensive research has found that the emergence of challenging behavior patterns typically occurs within the early childhood period (Campbell 1995; Walker et al. 2003; Webster-Stratton 1997), less research has been conducted on protective factors within early childhood school-based settings.

The lack of supportive preschool-based intervention models is of concern given the outcomes for children who enter elementary school with problem behavior (Walker et al. 2003). Children who have problem behavior in kindergarten and first grade face multiple challenges in school including peer rejection, negative interactions with teachers, and lack of support for developing appropriate behavior patterns (Coie et al. 1990; Stormont 2002; Vitaro et al. 1992, 1994). Researchers in the area of problem behavior have underscored the importance of significantly altering problem behavior patterns by the end of third grade to prevent chronic and lifelong patterns

(Walker et al. 2003). Furthermore, the younger the child is at the time of intervention, the greater the impact on the child's social adjustment (Kaiser and Hester 1997; Webster-Stratton 1997). Thus, the early childhood years need to be targeted for the prevention of chronic behavior problems.

One approach to working with problem behavior that has efficacy with school-aged populations is the use of school-wide positive behavioral support (SW-PBS). SW-PBS is a process for working with problem behavior that recognizes the multiple influences on problem behavior and provides school-based supports for developing and demonstrating appropriate behavior (Lewis and Sugai 1999; OSEP Technical Assistance Center 2004; Sugai and Horner 2001). This approach is ideal for early childhood settings as all children are supported within a SW-PBS framework. Although the need for early support for problem behavior is clear, the systematic use of key features of SW-PBS in early childhood programs has not been widespread.

Systems of SW-PBS are implemented with the intent to ''define, teach, and support appropriate behaviors in a way that establishes a culture of competence within schools'' (p. 1, OSEP Technical Assistance Center 2004). Accordingly, the key features of school-wide PBS are to specifically define appropriate behavior that is expected in school settings (behavior expectations), teach children these behavior expectations in all school settings (classroom and non-classroom settings), support appropriate behavior through prompting and providing specific feedback in various ways when it occurs, and use data to further guide decisions regarding supportive interventions (Lewis and Sugai 1999; OSEP Technical Assistance Center 2004; Sugai and Horner 2001). In addition to implementing the key school-wide universal interventions, the SW-PBS process also includes more focused interventions (small group/targeted supports) for students who require more support in terms of environmental modifications, social skills instruction, and/or practice opportunities (Lewis and Sugai 1999). For students who do not respond to school-wide (i.e., universal) support, or more focused small group/targeted supports, individual supports, which are typically determined through functional behavioral assessments, are put in place (Lewis and Sugai 1999).

The research base for the key features of SW-PBS is extensive and includes research that supports positive reinforcement, prompts and cues, direct instruction, and data-based decision making (Colvin and Fernandez 2000; Kartub et al. 2000; Lewis et al. 1998, 2002; Scott 2001). As the focus for this study was on increasing early childhood teachers' use of universal behavioral support strategies for all children, the targeted key features of PBS included specific prompts for desired behavior in a specific setting (precorrection) and behavior specific verbal feedback (praise).

A critical behavioral support teachers need to implement to increase children's opportunities to be successful is precorrection (Walker et al. 2003). When using precorrection, teachers set students up to be successful by providing specific behavioral prompts that describe what students should do when preparing for any task, transition, or setting (Lampi et al. 2005; Walker et al. 2003). Precorrection reminds students of the appropriate behavior before they have the chance to make a behavioral error. Research has found that precorrection is an effective strategy for supporting appropriate behavior in classroom (DePry and Sugai 2002), cafeteria (Lewis et al. 2000), recess (Lewis et al. 1998), and transition settings (Colvin et al. 1997).

A second complimentary behavior support involves the use of specific verbal feedback in response to displays of appropriate social skills. Behavior specific praise is a research-based strategy for reinforcing new behaviors and for supporting already learned behaviors in specific contexts (Lampi et al. 2005; Mesa et al. 2005). Children with or at-risk for challenging behavior should receive more positive attention and feedback for appropriate behavior than negative attention for inappropriate behavior. Observations of teachers of children with challenging behavior indicated that they provided more reprimands than praise (Jack et al. 1996). Research has also found that although children with challenging behavior complied with teacher requests most of the time, they were very rarely praised for their compliance (Van Acker et al. 1996). Thus, teachers need to reorient themselves to attend to the positive behaviors in their students and acknowledge them when they occur (Maag 2001).

SW-PBS utilizes these two behavioral supports and others to promote appropriate behavior. SW-PBS

has been successfully implemented at the elementary and secondary levels. Research on the efficacy of school-wide PBS has demonstrated overall decreases in reported behavior problems in school (Colvin and Fernandez 2000) and problem behavior in specific non-classroom settings such as playgrounds, hallways, and cafeterias (Colvin et al. 1997; Kartub et al. 2000; Lewis et al. 1998, 2002). Scott (2001) demonstrated 65% and 75% reductions in out-of-school and in-school suspensions after implementing SW-PBS in an inner city school. In addition, findings from preliminary research show both improvements in behavior and gains in academic achievement (Horner et al. in press).

Although no data-based studies have been conducted to date on the effectiveness of SW-PBS systems in early childhood settings, several studies have been conducted on using strategies to support appropriate behavior in children at-risk for behavior problems. Research on behavior supports in Head Start settings has found that young children who received a 12-week social skills intervention increased their adaptive behavior and decreased their problem behavior (Serna et al. 2000). Other research has similarly found that early intervention that targeted social skills, promoted positive social interactions, and utilized effective behavior supports including prompts and praise was associated with increased social competence in children (Tankersley et al. 1996).

Several articles have described how the SW-PBS process can be implemented to support children in early childhood settings (Fox and Little 2001; Stormont et al. 2005). A change in terminology from school-wide to program-wide (PW) has been recommended to reflect the differences between early childhood programs, which often have classrooms spread across a district, and schools. In addition to exploring how PW-PBS may look in comparison to SW-PBS in terms of team composition, number of behavioral expectations, alternatives to office discipline referrals for monitoring system efforts (for a review see Stormont et al. 2005), research is also needed on the effectiveness of using features of PW-PBS in various types of early childhood settings. Furthermore, it is particularly important that research is conducted with children who are at increased risk for behavior problems in order to promote primary

prevention of behavior disorders (Raver and Knitzer 2002).

The need for more support in the area of working with challenging behavior has been acknowledged by Head Start administrators and staff (Buscemi et al. 1995; Yoshikawa and Zigler 2000). Research has documented that children in Head Start programs were reported to be more physically aggressive than matched peers in child care settings (Kupersmidt et al. 2000). Head Start teachers have reported that 40% of their students exhibited one or more problematic behavior on a daily basis and many students exhibited six or more each day (Willoughby et al. 2001). Overall, children in Head Start classrooms are at increased risk for problem behavior and teachers in Head Start classrooms do not feel adequately prepared to manage behavior problems (Buscemi et al. 1995; Yoshikawa and Zigler 2000).

The purpose of this study is to add to the literature in this area by investigating the relationship between teachers' use of key universal features of PW-PBS, specifically increasing teachers' rate of precorrection and praise statements, on the rate of children's problem behavior. If this direct relationship could be established, then initial support for targeted universal features of PW-PBS in Head Start settings could be documented.

Method

Participants and setting

The three participants in this study were selected from a larger study including 16 teachers from 3 Head Start centers (Stormont et al. 2006). From this larger study, data were available on teachers' use of praise and reprimands and this information was used to determine which teachers would be invited to participate in the current study. Data on reprimands and praise were collected to determine if teachers were providing more negative than positive attention. Systematic data on teachers' use of precorrection, as defined in the current study, were not available for screening purposes.

Five teachers met the criteria of using more reprimands than specific praise statements and using low rates of specific behavior praise (defined as one

praise statement or less per 15 min observation. Of the five teachers who met the criteria, only three were in year round classrooms. Since the study was conducted through the months of April–June, only teachers who taught year round were included. Final participants included two teachers and one teaching assistant who directly taught an independent small group. The three teachers' mean rates for specific praise and reprimands for 15 min intervals were 0 and 0.71 (teacher one); 0.67 and 2.0 (teacher two); and 1.0 and 2.6 (teacher three).

Demographic information on the teachers was also collected. All three teachers were female and from Euro-American ethnic backgrounds. Teacher one had been working for Head Start for 2 years and had an undergraduate degree in human development. She had no other teaching experience. Teacher two was a teaching assistant who had been working for Head Start for one and one-half years. She had three and one-half years of other experience as a teaching assistant and a high school level education. Teacher three had been working for Head Start for 6 months, had 19 years of total teaching experience, and had an undergraduate degree in education.

Data were also collected on the characteristics of students in the target setting (small group). All three teachers had an independent group of children between the ages of 3 and 5 years of age. Teacher one had a total of 7 students in her small group, including 4 males and 3 females, and ethnic backgrounds represented included 1 Euro-American, 1 Hispanic-American, 2 Asian-Americans, and 3 African-Americans. No students in this small group had an identified disability. Teacher two had a total of 9 students, including 4 males and 5 females, from Euro-American (4) and African-American (5) backgrounds. No students in this small group had an identified disability. Teacher three had a total of 9 students, including 6 males and 3 females, from Euro-American (7), Hispanic-American (1), and African-American (1) backgrounds. One student in this small group had an identified disability in language and one was identified as needing ESL services.

Measures

Teacher Behavior Observation Form. The frequency of specific teacher behaviors was recorded using a paper and pencil event-recording instrument. Three behavior categories were targeted and included (a) specific behavior praise, (b) precorrections, and (c) reprimands. Specific definitions for each category are presented below.

Specific behavioral praise included verbal comments indicating approval of identified academic or social behavior (Sutherland et al. 2002). Examples of specific behavior praise include: ''I like the way you are using your walking feet.'' ''You are being a good helper by picking up your area.'' General statements without specific reference to behavior, such as ''Good!'' or ''Super job!'' were not coded as specific behavioral praise.

Precorrection was defined as statements that oriented children to a setting by explaining desired behavior before starting a task or entering a new setting (VanDerHeyden et al. 2001). An example of precorrection is providing instructions related to sharing materials, using materials appropriately, and asking for teacher assistance prior to beginning a small group activity. Precorrections were recorded on an occurrence/nonoccurrence basis during the beginning of small group (defined as the first 5 min). This method for coding precorrections was used to determine if teachers used precorrections as a specific proactive strategy to orient students to the behavioral expectations of the lesson before beginning the actual lesson.

Reprimand statements included verbal comments indicating disapproval of students' academic or social behavior (e.g., ''I don't like what I'm seeing here'' Sutherland et al. 2002). Reprimands also included statements with negative and loud tones of voice such as ''Excuse me!''

Student behavior observation. Problem behavior included off-task, oppositional, disruptive, aggressive, and other types of externalizing behavior. Specific problem behavior included (a) yelling (when it was not part of the activity), (b) spitting, (c) hitting, (d) teasing, (e) whining, (f) telling on another child, (g) taking materials from another child, (h) interrupting lessons by blurting out, (i) chewing on materials, (j) sticking tongue out at someone, (k) pretending toys were guns, (l) taking a turn prematurely, (m) waiting more than 5 s to comply with a teacher directive, and (n) engaging in off-task behavior. Off-task behavior was defined as clear disengagement from the activity as evidenced by physical behavior. Examples of off-task behavior included if a child had

his or her chair turned away from the small group table for more than 5 s, if the child left the area without permission, and if the child left with permission but then wandered to another area for more than 5 s. Data were collected using frequency counts within intervals on all children during the small group time without regard to specific children. Each incident of problem behavior was recorded for the group as a whole and more than one problem behavior could be recorded during the same interval. The observer collecting data on children's problem behavior used scanning and seating was arranged so that all children could be seen and heard. Frequency of problem behavior was converted to a rate per minute.

Social validity survey. The social validity survey consisted of seven questions regarding the intervention used in this study. Instructions on the survey directed teachers to rate, using a 5-point Likert scale, the extent to which they agreed or disagreed with the following statements regarding the small group intervention: (1) Overall, I feel comfortable with the intervention and consider it to be teacher-friendly (it did not take a lot of time or require additional resources) and simple to implement; (2) The intervention proved to be an effective and efficient method for reducing minor behavioral problems; (3) I will continue to use the intervention; (4) I will recommend and share the intervention with others; (5) I will use the intervention in additional/other settings; (6) I feel this intervention was beneficial for my students with challenging behavior; and (7) Overall, the intervention was successful.

Procedures

A team of Head Start directors and staff from three Head Start centers attended a two-day workshop on implementing PW-PBS. After the training, the team decided upon dates for each center to receive two 2-hour in-services on program-wide PBS (one in the fall and one in the winter) and determined the content for the in-services. The first two authors and a behavior consultant conducted all of the in-services (see Stormont et al. 2006 for more details). The current study took place approximately 2 months after the second in-service. No other specific training occurred in the interim.

Head Start teachers were observed over the course of the year and data were collected on their use of specific behaviors across multiple settings. This information was used to target the teachers for the current study. The three teachers who met screening criteria (low rates of praise and high rates of reprimands) were invited to participate in the study. Teachers were told that the purpose of the study was to observe teachers and students in the same setting over time and to provide some ideas for reducing problem behavior in that setting. All three teachers agreed to participate. Teachers were told that their data would not be shared with their administrators, and would be kept in a secure location to protect their confidentiality.

One of the teachers and the teaching assistant taught in the same classroom. Although it was evident that this may pose some threats to the integrity of the intervention, precautions were put in place to buffer such effects. First, the teachers were asked specifically not to discuss the ''intervention'' with their peers until the conclusion of the study. This was emphasized repeatedly in the room where two teachers taught together. Second, when the intervention was shared with teachers, it was done so privately. Third, the seating arrangements for the small groups in this classroom were at opposite ends of the classroom, which made it difficult to hear the intervention being implemented. Finally, the information shared regarding the intervention was not very different from the information shared in the in-services. So regardless of what the researchers had previously stressed as important for teachers to implement in their classrooms, the three targeted for this study were not implementing the targeted universal strategies.

A teacher-directed small group setting was chosen because teachers led or facilitated an activity with the same small group of children during the same time every day. Other settings, such as large group, did not provide the same type of consistency (e.g., different teachers led this activity on different days). Data were collected in 15 intervals and the session began when the teachers and students were all present in the small group area. Two observers were present for the sessions; one to observe teacher behavior and one to observe student behavior. The observers would enter the classroom and sit behind the small group in an area where the teacher and students could be

observed. Children's problem behavior and teachers' use of praise and reprimands were recorded as frequency counts; teachers' use of precorrection in the first 5 min of small group was recorded on an occurrence/nonoccurrence basis. All data were recorded in intervals to allow for more accurate inter-observer reliability calculations.

Inter-observer agreement

Inter-observer agreement data were collected for teacher behavior in 22% of observations and for children's behavior in 20% of the observations. During reliability sessions, three people would observe (two for the reliability data on teacher or student behavior and one for the other) and an adaptor would be placed in the recorder to accommodate additional headphones. Overall inter-observer agreement was calculated by dividing the total number of agreements by the total number of agreements and disagreements. Overall agreement was high for the three teacher behavior categories including specific praise (0.95), precorrections (1.0), and reprimands (0.95). Agreement for children's problem behavior was lower but still in an acceptable range (average = 0.80) and ranged across reliability sessions from .67 to .97.

Design procedures

A multiple baseline design across teachers was used to examine the impact of the intervention on teachers' and students' behavior (Kazdin 1982). Following a five day baseline, teacher one received training on the intervention. During this time, baseline data continued to be gathered for teachers two and three. After a clear change was documented in teacher one's, and her students' behavior, intervention began with teacher two. Given the short amount of time remaining before a two-week summer break, intervention with teacher three was started shortly following teacher two.

Intervention. The intervention was developed based on observations that some teachers' had low rates of praise statements and it was not clear whether teachers were systematically using precorrective statements to orient their students to settings (Stormont et al. 2006). Thus, the purpose of the intervention was to instruct teachers to (a) use precorrective statements to orient

students to the lesson before beginning the lesson, and (b) increase rates of specific praise statements when students were following the behavioral expectations. Training consisted of a 30-min meeting with the teacher using a standard template of the content to provide consistency across the three teachers. Scripts for precorrective statements could not be used given that the expectations for small group activities varied according to the activity. Although this would allow more standardization, it would not have been appropriate in this context. However, examples from small group activities observed during baseline were used as teaching examples. Teachers were told that they could decide what the behavioral expectations for the setting were and then they needed to plan to discuss these with the children in very concrete language at the beginning of the small group activity. Clearly, some expectations were similar across sessions (sharing procedures) but others were not (e.g., some days it was appropriate to stand at the table and finger paint while on other days teachers may want children to sit if they are working with glue or scissors). Teachers practiced some precorrective statements in the context of this meeting, and received corrective feedback until they successfully generated two precorrective statements. During the intervention phase, at the conclusion of each session, feedback was provided to the teachers regarding their use of the intervention. Specifically, teachers were informed of whether they had used the precorrection strategy in the beginning of the activity (defined as within the first 5 min) and how many praise statements they had given.

Results

To analyze teachers' use of precorrection during baseline and intervention, percentages were compared across phases (see Table 1). Teachers were observed during the first 5 min of the lesson for the

Table 1 Mean percent of precorrection across subjects

Teacher	Baseline	Intervention
One	0	100
Two	13 (range 0–100)	100
Three	78 (range 0–100)	75 (range 0–100)

presence or absence of appropriate precorrective statements to orient the students to the academic and social expectations of the lesson. Overall, teachers one and two made substantial increases in the use of precorrective statements. Teacher three had an initial high percentage of usage and maintained across the study with some variability.

The remaining data for teacher and student behavior were converted to rate per minute and plotted for visual analysis across the three baselines (see Fig. 1). All student problem behavior data were aggregated into a single daily data point and plotted per teacher graph. Data within and across baselines were analyzed for changes in trend, level, and
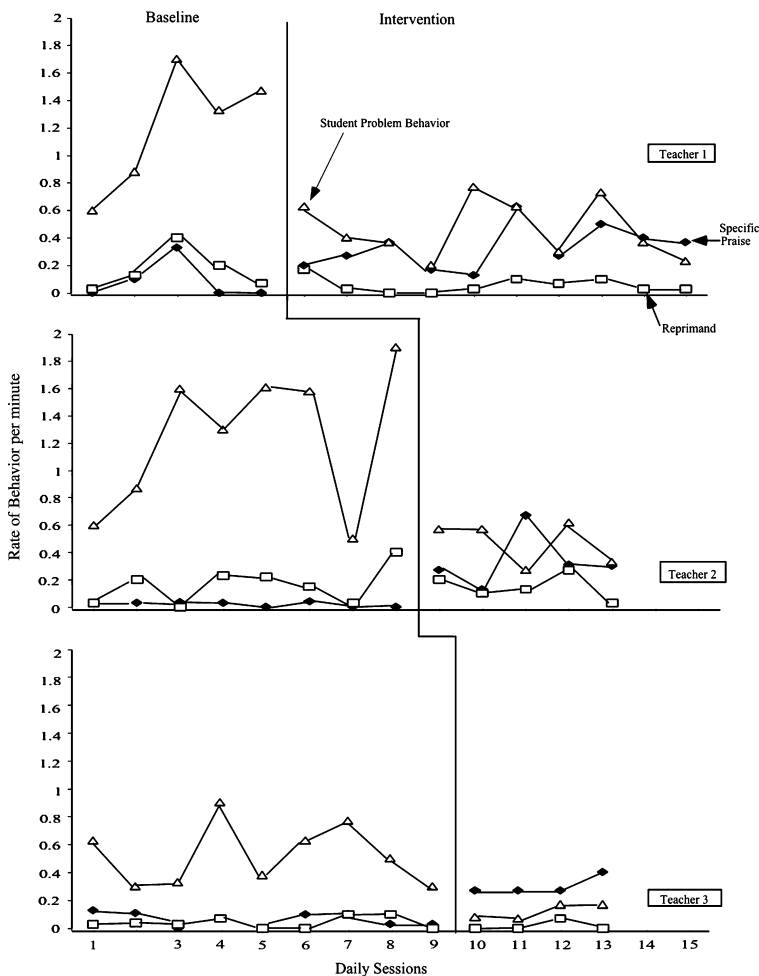

Fig. 1 Teacher praise and reprimands and rate of student problem behavior across baseline and intervention conditions

variability (Tawney and Gast 1982). Overall, a functional relationship between specific changes in teacher behavior and student problem behavior is evident. Results are further discussed below by teacher/student dyad.

Teacher one. During baseline a clear increasing trend in student problem behavior is evident. Likewise, teacher levels of specific praise are low. Rate of reprimands indicates an overall low rate. Following intervention, there are clear level changes in teacher use of specific praise and overall rate of student problem behavior. While there is not an evident drop in rate of reprimands, across intervention there is a clear flat trend.

Teacher two. During baseline rates of student behavior show a level trend with a high degree of variability. Rates of teacher's use of specific praise show an extremely low level (mean = 0.02 per minute) with a flat trend. Rates of reprimands also indicate a flat trend with a slightly higher overall rate level. Following intervention there is a clear level change in rate of student problem behavior with a reduction in variability. During intervention overall level of specific praise increased. There is no clear level change in the use of reprimands.

Teacher three. Baseline data indicate very low rates of specific praise and use of reprimands. Levels of problem student behavior are lower than teachers one and two and indicate a decreasing trend toward the end of baseline. Once the intervention was introduced, the data indicate clear level change in rates of student problem behavior and teacher use of specific praise. Use of reprimands remained at an overall low rate of use.

Social validity

All three teachers rated the intervention very positively. Teacher three indicated that she strongly agreed with all of the statements reflecting the social validity of the intervention. Teachers one and two rated six of the seven items with the most positive rating (strongly agree) and indicated that they agreed somewhat with one item. Teacher one indicated that she agreed somewhat with statement 4 ''I will use the intervention in other settings.'' Teacher two agreed somewhat with statement 2 ''The intervention proved to be an effective and efficient method for reducing minor behavior problems.''

Discussion

Overall, through the use of a relatively simple intervention each of the three teachers was able to reduce overall rates of student problem behavior during a small group setting. Given the overall low rates of reprimand use observed during baseline it is difficult to ascertain the effect, if any, the minor reductions observed during intervention had on student behavior. Likewise, since the intervention focused on increasing specific praise and precorrection, it is impossible to determine the relative weight each component had on student behavior. Two of the three teachers increased their use of precorrections at the beginning of the lesson to orient students to the behavior expectations for that setting. The increase in the use of this behavioral support perhaps set the stage for teachers and students to engage in more appropriate behavior during the small group setting. All three teachers increased their use of specific behavioral praise.

The present research adds to the literature in several important ways. This study contributes to the literature on PBS at the pre-school level by demonstrating the impact of teachers' use of universal behavior supports on student behavior in preschool settings. Specifically, after orienting students to the behavior expectations and then praising students for demonstrating appropriate behavior, the overall behavior problems in small groups of preschool students declined. These two simple strategies did not take extensive professional development time and were perceived by the teachers as reasonable and effective strategies for reducing problem behavior. These results extend past research that implemented the same intervention with a teacher in an elementary classroom (DePry and Sugai 2002) and with supervisors on the playground (Lewis et al. 2000).

In addition, this research supports the preventative focus within a PW or SW-PBS model of reducing problem behavior by supporting appropriate behavior in all students. Past research in early childhood programs, including Head Start, has documented the effectiveness of more intrusive and lengthy social skills curricula or interventions for reducing problem behavior and increasing prosocial behavior (Serna et al. 2000; Tankersley et al. 1996). Findings from the current study support the use of more universal strategies for all children prior to targeting children

who need more support. Thus, counseling and behavioral support resources can be more efficiently utilized to support children who are at greatest risk for developing and/or sustaining severe behavior problems. The research base with PW-PBS is emerging and needs more data to support the use of key features.

The findings from this research are also important for the literature on barriers to using research based practices, consultation, and teacher change. The participants in this study were teachers who were low implementers of targeted behavior supports, even after they participated in traditional professional development in-services on the importance of using these features to support appropriate behavior. The present study simply included individual meetings with teachers to discuss the intervention and specific performance feedback after each intervention session. Interestingly, the amount of time involved to explain the intervention was minimal (30 min or less) and feedback sessions took a minute or less. Yet teacher behavior changed immediately following the intervention and, concurrently, student behavior changed.

Teachers may need different levels of support in relation to changing their behavior and applying research based practices in their classroom settings. In this study teachers received individual support for using research-based practices. Just as it is not possible to ascertain the relative impact of praise and precorrection on students' behavior change, it is also not possible to determine the unique impact of the supports provided to teachers on their behavioral change. Teachers received both an individualized explanation of the intervention strategies followed by guided practice and performance feedback on whether they used the two intervention components.

Past research has underscored the importance of performance feedback as a critical part of behavioral change (Noell et al. 2005). In fact, without performance feedback, teachers who had individual support for implementing an intervention in their classrooms were using the intervention with integrity 46% of the time after one week and only 23% of the time after 3 weeks. Teachers who were in the performance feedback condition implemented the target intervention with integrity 82% of the time the first week and 75% of the time the third week. Interestingly, teacher perceptions of how well they were using the interventions (i.e., integrity) were not differentially related

to how well they were actually using the intervention (Noell et al.). We did not assess teachers' perceptions of whether they were using precorrection and praise, and to what extent, prior to and after the intervention was provided. Future research should indeed assess teachers' perceptions of intervention usage to add to this literature.

Finally, the present research also contributes to the literature on early intervention. Participants in this study taught children who were at-risk due to poverty. Early intervention for this population is critical given the multiple challenges in many preschool classrooms (e.g., challenging behavior, teachers without education backgrounds). The establishment of behavioral supports for preschoolers who are identified as at-risk is a critical component of early childhood programming for preventing behavior problems. To direct these efforts, it important to target interventions that are well grounded in research, easy to implement, and perceived positively by teachers. In this research, the intervention consisted of a simple consultation with limited on-going technical assistance and was perceived positively by all three teachers.

Limitations

The first limitation of this study is the generalizability of findings. Two teachers and one teaching assistant from one Head Start program were included in the study. Accordingly, future research needs to corroborate the findings from this research. A second limitation is the inability to disaggregate the individual impact of the precorrections and praise statements. A related limitation within the student data set is the inability to disaggregate the impact on specific children. However, the observers reported anecdotally that frequency of problem behavior tended to be distributed evenly across the children within the small groups.

Another limitation involves the limited data collected between the second and third teachers' implementation of the intervention. This limitation is reflective of conducting research in applied settings; there was not enough time before a summer break to ensure baseline stability for teacher three while teacher two was implementing the intervention. The decreasing trend in student problem behavior during the end of baseline for teacher three further contributes to the need to view results from this study with

caution. A related limitation is that two teachers, teachers two and three taught in the same classroom. However, the intervention was provided individually, in a private setting, and teachers were asked not to discuss the intervention with other teachers during the study. Further, the intervention was also introduced during the whole group in-services at the beginning of the year and, accordingly, it was not ''new'' information.

A final limitation involves the observation of problem behavior across a small group of children, which was challenging. Accordingly, the rate per minute of student problem behavior documented in this study should be viewed as an underestimate of problem behavior, especially during baseline conditions when more problem behavior was occurring. As a result of these limitations, findings from this study should be viewed as preliminary.

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