Minnesota State University, Mankato

Cornerstone: A Collection of Scholarly and Creative Works for Minnesota State University, Mankato

All Graduate Theses, Dissertations, and Other Capstone Projects

Graduate Theses, Dissertations, and Other Capstone Projects

2013

International and Cross-Cultural Application of the Good Behavior Game

Julene Douty Nolan
Minnesota State University - Mankato

Follow this and additional works at: https://cornerstone.lib.mnsu.edu/etds

Part of the Educational Psychology Commons, and the Psychology Commons

Recommended Citation

Nolan, J. D. (2013). International and Cross-Cultural Application of the Good Behavior Game [Doctoral dissertation, Minnesota State University, Mankato]. Cornerstone: A Collection of Scholarly and Creative Works for Minnesota State University, Mankato. https://cornerstone.lib.mnsu.edu/etds/232/

This Dissertation is brought to you for free and open access by the Graduate Theses, Dissertations, and Other Capstone Projects at Cornerstone: A Collection of Scholarly and Creative Works for Minnesota State University, Mankato. It has been accepted for inclusion in All Graduate Theses, Dissertations, and Other Capstone Projects by an authorized administrator of Cornerstone: A Collection of Scholarly and Creative Works for Minnesota State University, Mankato.

International and Cross-Cultural Application of the Good Behavior Game

by

Julene D. Nolan

A Dissertation Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Psychology

In

School Psychology

Minnesota State University, Mankato

Mankato, Minnesota

May, 2013

International and Cross-Cultural Application of the Good Behavior Game

Julene D. Nolan

This dissertation has been examined and approved by the following members of the dissertation committee.

_____
Kevin J. Filter, Ph.D., Advisor

_____
Daniel Houlihan, Ph.D., Committee Member

_____
Lisa Perez, Ph.D., Committee Member

_____
Scott Fee, Ph.D., Committee Member

_____
Date

Copyright

Copyright © Julene D. Nolan 2013

All Rights Reserved

Dedication

This work is dedicated to the students and teachers in Belize, Central America who do incredible things every day with few resources yet abundant talent and dedication, to my husband Michael and our children Jack, Charlie, and Anna Kate Nolan without whose love and support I could not have met this wonderful challenge, and to Dr. Kevin Filter, Dr. Daniel Houlihan, Dr. Lisa Perez, Dr. Scott Fee, and the faculty, staff, and leadership of the School Psychology Program at Minnesota State University, Mankato.

Table of Contents

Copyright i
Dedication ii
List of Tables v
List of Figures vi
Abstract of the Dissertation vii
Chapter 1 Introduction 1
International and Cross-Cultural Application of The Good Behavior Game 1
Chapter 2 Review of the Literature 4
History and Description 4
Critical elements. 6
Research methods 7
Diverse Populations Within the United States 8
GBG Applied Internationally 12
Practice Cautions 19
Alternative to Corporal Punishment 20
Purpose of Present Study 23
Chapter 3 Methods 25
Participants and Setting 25
Measurement 27
Target behaviors. 27
Preference assessment. 27
Observations. 28
Observer agreement 28
Procedures 29
Adaptation period. 29
Intervention training with teachers. 29
Experimental design 30
Baseline 30
GBG intervention 31
Follow-up 32
Fidelity of implementation 32
Treatment acceptability 33
Chapter 4 Results 36
Direct Observation of Targeted Behavior 36
Classroom one 38
Classroom two 38
Classroom three 39
Fidelity of implementation 40
Treatment acceptability 41
Bullying and harassment 42

Chapter 5 Discussion 44
General Discussion 44
Research question one 45
Research question two 47
Research question three 49
Practical issues and teacher concerns 53
Summary of Primary Findings 54
Chapter 6 Implications, Limitations, and Future Directions 56
Implications for Educators 56
Limitations 57
Future Research 60
References 62
Appendix A 73
Administrator Consent 73
Appendix B 75
Teacher Consent Form 75
Appendix C 78
Observation Form 78
Appendix D 80
Fidelity Checklist 80
Appendix E 81
Children's Intervention Rating Profile 81
Appendix F 82
Intervention Rating Profile 82
Appendix G 83
Overview of The Good Behavior Game 83

List of Tables

Table 1 IOA Mean, Range, and SD by Classroom 28
Table 2 Phase means, overall range, and overall means of targeted behavior by classroom 40
Table 3 Mean, Range, and SD of Treatment Fidelity by Classroom 41
Table 4 Mean Item Scores and SD by Classroom 41
Table 5 Mean Item Scores and SD by Classroom IRP 42

List of Figures

Figure 1 Percent of 15-second intervals with targeted behavior by classroom 37

Abstract of the Dissertation

International and Cross-Cultural Application of the Good Behavior Game

by

Julene D. Nolan

Doctor of Psychology in School Psychology
College of Graduate Studies and Research
Minnesota State University, Mankato, 2013
Kevin J. Filter, Ph.D., Chair

Disruptive classroom behavior is frequently cited as a critical component in teacher job dissatisfaction and burnout. As corporal punishment is eliminated in many classrooms worldwide, teachers report a perception of increased disruptive classroom behavior that many feel ill equipped to address. Teachers also often report a lack of training in evidence-based behavior management tools that have been studied with international populations and culturally, linguistically, and socioeconomically diverse populations. The Good Behavior Game offers teachers a classroom-wide behavior management tool that has been studied both in the United States and abroad with students from diverse backgrounds, primarily in developed countries or large cities within developing countries. This intervention is based on basic and well-tested principles of behavior theory and has a long and defensible history indicating its efficacy across cultural, linguistic, and socio-economic traditions. However, use of this tool in developing countries with few resources and diverse student populations has not been fully investigated. This research investigates the use of the Good Behavior Game in classrooms within a small, Central American town, where corporal punishment has been recently banned, educational

resources are limited, and the population is both international and diverse. Results from the current study indicate that the GBG is effective in reducing out of seat, talking out, and tattling across three elementary classrooms in Belize, Central America and represent the first research to do so. Evidence further indicates that teachers were able to implement this intervention with fidelity, and that both teachers and students report high treatment acceptability.

Chapter 1

Introduction

International and Cross-Cultural Application of The Good Behavior Game

Teachers, particularly elementary school and early career teachers, consistently report an urgent need for evidence-based behavior management tools in the classroom (National Council for Accreditation of Teacher Education, 2008). In fact, teachers frequently cite the difficulty in managing student behavior as their most critical job-related concern and disruptive student behavior is often identified as a major contributing factor hampering teacher job satisfaction and leading to burnout and resignation from the field of education (Walter, Gouze, & Lim, 2006). Ultimately, this disruptive behavior impacts the entire community and its resources, as aggressive and disruptive behavior in first grade is a significant risk factor for a myriad of behavioral and mental health problems that require community-based services in adulthood (Kellam, Hendricks Brown et al., 2008). In addressing this need for evidence-based behavior management tools, it is critical to identify instruments that are effective across cultures and have demonstrated experimental success with culturally, linguistically, and socioeconomically diverse student populations.

Regrettably, few classroom behavioral interventions have been well tested internationally and with culturally, linguistically, and socioeconomically diverse student populations. One important exception is the Good Behavior Game (GBG) (Barrish, Saunders, & Wolf, 1969). The GBG has demonstrated experimental success in changing behavior throughout a vast body of research from 1969 to present (Tingstrom, Sterling-Turner, & Wilczynski, 2006). This classroom management tool has been tested in dozens

of studies in the United States, across a variety of settings. These studies have included cohorts of culturally, linguistically, and socioeconomically diverse students and those with disabilities. In addition, it has been tested internationally in Germany (Huber, 1979), Belgium (Leflot, van Lier, Onghena & Kolpin, 2010), The Netherlands (van der Sar, Muthen & Crijnen, 2004), The United Kingdom (Phillips & Christie, 1986), Spain (Coronado-Hijón, 2009; Ruiz-Olivares, Pino, & Herruzo, 2010), British Columbia (Kosiec, Czernicki, & McLaughlin, 1986), Quebec (Dion, Roux, Landry, Fuchs, Wehby, & Dupéré, 2011), Chile (Pérez, Rodríguez, De la Barra, & Fernández, 2005; Pérez, Rodríguez, Fernández, & de la Barra, 2005), and Sudan (Saigh & Umar, 1983). Further, there is evidence longitudinally that students who participated in the GBG in elementary school were less affected by externalizing behavior (Pérez et al., 2005; Petras, Kellum, Brown, Muthen, Ialongo, & Poduska, 2008; van Lier, van der Sar, Muthen & Crijnen, 2004; Witleit, van Lier, Cuijpers, & Koot 2009), mental health issues (Huizink, Lier, & Crijnen, 2009; Poduska, Kellam, Wang, Hendricks Brown, Ialongo, & Toyinbo, 2008; Wilcox, Kellam, Prown, Poduska, Ialongo, Wang, & Anthony, 2008), attention problems (Dion, Roux, Landry, Fuchs, Wehby, & Dupéré, 2011), and show improved outcomes in academic performance (Bradshaw, Zemuda, Kellam, & Ialongo, 2009) as adolescents and adults.

Although the current research represents a sound body of evidence that the GBG is effective internationally and in schools with diverse populations, nearly all of the research has been conducted in developed countries. Research on the use of GBG in developing countries is more limited and includes a series of longitudinal studies in an elementary school in Santiago, Chile (Pérez, Rodríguez, De la Barra, & Fernández, 2005;

Pérez, Rodríguez, Fernández, & de la Barra, 2005), and one study in one classroom in Sudan (Saigh & Umar, 1983). These studies bolster the conclusion that the GBG in effective across nations, cultures, languages, and socio-economic lines. However, further research in rural areas of developing countries with diverse student populations would lend support to the conclusion that the GBG is an effective tool regardless of culture, socioeconomic status, and availability of resources and that it is a more humane alternative to corporal punishment.

Chapter 2

Review of the Literature

History and Description

The GBG was first introduced 1969 as a behavioral intervention employing interdependent contingency management in a group situation (Barrish et al., 1969). Using interdependent contingency, all participants have access to the same reinforcement, based on the collective behavior of the group. Thus, all students would have access to the reinforcement providing that the group met the criterion, even if a single student was responsible for every rule violation. A typical use of the GBG includes a classroom situation in which identified inappropriate behaviors (e.g., out of seat behavior, talking out of turn) are monitored. As long as the set criterion is achieved, (e.g., no more than five incidents of behavior) the entire classroom is rewarded (e.g., extra minutes of recess).

The GBG has been used in dozens of research articles and has been modified to accommodate different situations and classroom needs (Tingstrom et al., 2006). In the original research, implementation of the GBG in both math and reading class reduced out of seat and talking out behavior in a fourth grade classroom of 24 students located in the Midwest United States of America (Barrish et al., 1969). This class was divided into two groups and the teacher identified rules for behavior. When the teacher observed a student breaking the rule, she wrote a hash mark on the board under the corresponding team name. Whichever team ended the game with the fewest hash marks below the set criterion won the game and was awarded the reinforcement. Additionally, if both teams received fewer than the set criterion, both teams received the reinforcement. These

authors noted that reinforcements used for this intervention included items and experiences commonly available in classrooms such as stars on a winner's chart, victory nametags, opportunity to be first to go to lunch, 30 minutes of free time, and a special project at the end of the day. Additionally, teams that earned fewer than 20 hash marks during the week were allowed to go to recess four minutes early on Friday. This original research established the fundamental components of the game including dividing the classroom into teams, a set criterion for winning, explicitly defined rules, rewards for the winning team(s), and feedback when rule violations were observed.

In the Tingstrom et al. (2006) review of research using the GBG from 1969 to 2002, the authors report that the GBG has been used successfully in its original form and in numerous modifications. Typically, the GBG is used in a classroom setting with children in grades one through six but it has also been employed with preschoolers, kindergarteners, adolescents, teenagers, and adults. It is generally used to reduce disruptive classroom behavior, but has also been used to address task-relevant behavior, inappropriate verbalizations, compliance and non-compliance, academic performance, athletic skills, and oral hygiene skills, and in one study it was used to increase worker productivity in state hospital residents.

Interesting research is currently beginning to investigate the GBG and its effect on teacher behavior, including the monitoring of positive, neutral, and negative teacher responses to behavior (Lannie & McCurdy, 2007). Additionally, a version of GBG in which positive rather than negative behaviors are monitored and rewarded shows promise as an additional and preferred iteration of this technique. Evidence indicates that it is as effective as the original version in reducing undesired classroom behavior in schools that

are using School-wide Positive Behavior Supports (SWPBIS) (Tanol, Johnson, McComas, & Cote, 2010; Wright & McCurdy, 2011). The GBG has been endorsed as a best practice technique (Osher, Baer, Sprague, & Doyle, 2010; Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008), a universal behavioral vaccine (Embry, 2002), and has been recommended as a promising youth violence prevention program by the Surgeon General of the United States (U.S. Department of Health and Human Services, 2001).

Critical elements. Noteworthy research by Harris and Sherman (1973) tested the critical components of the GBG and each component's influence on behavior in two classrooms of fifth and sixth grade students. These researchers identified three critical elements in the success of the GBG at reducing disruptive behavior. First, they found that providing a reward for the winning team was the most critical element for the success of this intervention, as rule violations were most reduced in this condition. Second, they found that employing a set criterion that enabled both teams to win if it was met and no teams to win if it was exceeded was the next most important element of this intervention. Third, they found that dividing the classroom into teams impacted behavioral violations in a critical way such that when teams were present rule violations were significantly lower than when the classroom functioned as a whole. Interestingly, they did not see a significant difference in rule violations when feedback was provided (i.e., when the teacher vocally reminded the team that a member had broken the rule) compared to when it was not provided. However, these researchers speculate that announcing the winning team at the end of the game could have served as reinforcing feedback that influenced the outcome of subsequent game sessions. Later research on the GBG has generally employed all four elements both in the original version and in

numerous modifications.

Research methods. The GBG has been used in single case research studies using solid behavioral research methodology, involving phase changes, multiple baseline methods, changing criterion designs, and combined approaches (Tingstrom et al., 2006). Most group research investigating the effects of the GBG has been longitudinal and conducted using randomized group design with internal (within the school) and external (outside of the school) controls. Additionally, multiple baseline across classrooms, behaviors, participants, and time has been commonly employed when more than one classroom participated. Lettered and phase change designs have been most frequently used with single classrooms, and less frequently, individual studies have incorporated multi-element counter balancing and changing criterion design (Tingstrom, et al.). The GBG has been used to influence the behavior of entire groups of students as well as to target the behavior of individual students. The design and measurement employed generally depends on the behavior addressed and the population of participants.

Systematic direct observation (SDO) has been used to collect data across GBG studies that investigated the direct effects of the intervention and the particular method depends on the participant groups. For example, if individual student data was collected, a partial interval recording was likely employed (e.g., Tanol et al., 2010). For data on group behavior it is more difficult to perform direct observation and often the group is broken down into smaller subgroups and systematic observation of total frequency of behavior for all students is recorded. For example, McCurdy, Lannie, and Barnabas (2009) used the GBG to reduce disruptive behavior in a cafeteria. Two observers recorded the total frequency of indicated behavior from any of eight students sitting at

one section of a cafeteria table during 15-second intervals. At each new interval, a different section of the table was observed so that the behavior of approximately eight students was observed during a single interval. All tables in the cafeteria were observed during each observation. In studies that employed whole classroom observations, all students were individually observed during discreet intervals of the observation period such that multiple observations of a single student were recorded, and each student in the classroom was systematically observed (e.g., Lannie & McCurdy, 2007).

Studies that investigated longitudinal effects of the GBG did not employ SDO but rather used rating scales, checklists, or interviews to record behavioral symptoms that might indicate a mental health diagnosis (e.g., van Lier et al., 2004; Vuijk, van Lier, Crijinen, & Huizink, 2007; Wilcox et al., 2008). This body of research represents a solid, defensible argument for the GBG as an effective intervention in classrooms. Additionally, there is compelling evidence that the GBG is effective across diverse student populations.

Diverse Populations Within the United States

In the United States, the GBG has been investigated in urban settings with English Language Learners (ELL) and socio-economically disadvantaged students. For example, Babyak, Luze, and Kamp (2006) used a variation of the GBG called the Good Student Game with ELL and free and reduced lunch student populations. In this iteration of GBG, students rather than teachers were responsible to monitor prosocial behaviors for the group and record compliance or noncompliance at set intervals. Teachers also provided feedback when prosocial behavior occurred, but disruptive or undesired behavior was ignored. Teachers played this game two or three times during periods in

which the most off-task behaviors occurred. If there were students who tended to sabotage the game, teachers required these students to work independently and self-monitor their behavior. These researchers saw an increase from 56% to 88% on in-seat behavior and quiet working behavior across three classrooms. Similarly, McGoey, Schneider, Rexxentano, Prodan, and Tankersly (2010) used the GBG in three general education Kindergarten classrooms whose students lived in low socioeconomic (SES) areas in Northeast Ohio, United States. Students in two of the three classrooms showed moderate improvement in disruptive classroom behaviors.

Lannie and McCurdy (2007) also employed GBG with young, urban students, many of whom lived in poverty, in the Northeast United States. This single-case study included one classroom of 22 first-grade, general education students. This study also addressed teachers' responses to student behavior. It was hypothesized that teachers' positive verbalizations would increase as behavior improved. However, this hypothesis was not supported. Despite the fact that on-task behavior significantly increased and disruptive behavior significantly decreased, teacher verbalizations remained unchanged. Surprisingly, while levels of negative or neutral teacher feedback remained high throughout this study (average of four per session), positive feedback was virtually nonexistent (average of .2 per session) despite significant improvement in student behavior. Still, this study indicated the efficacy of GBG for young, urban, socioeconomically disadvantaged populations.

Longitudinal studies in the, Maryland City Public School System have followed African American, urban, socioeconomically disadvantaged students for three generations (Kellam, Reid, & Balster, 2008). This project sought to decrease aggressive

and disruptive behavior in first and second grade classrooms with the use of the GBG while improving students' positive social integration into school. In the first cohort of this project, teachers implemented the GBG in its traditional form (Dolan et al., 1993). That is, first grade classrooms were divided into teams and classroom rules were posted. The teacher announced that the game was to be played and check marks were placed next to the team name on the blackboard in front of the room whenever the teacher observed a rule infraction. Teams with the fewest checkmarks were rewarded and both teams were rewarded if fewer than four behavioral violations were recorded. The game was initially played for ten minutes, three times per week, with time expanded gradually to include most of the school day. Additionally, the teams that received the fewest check marks for the week received a special prize on Friday and were recognized as "weekly winners". The GBG intervention produced reduced aggressive and disruptive behaviors in primarily African American, urban, low SES students.

In addition to the immediate decrease in aggressive and disruptive behaviors, the Maryland researchers have seen other positive influences of the GBG longitudinally within the same population. Kellam, Hendricks Brown and colleagues (2008) reported a significant reduction in drug and alcohol abuse, smoking, and antisocial personality problems for boys at the age of 18 and 19 who had participated in the GBG study in first and second grade. The GBG had the strongest effect for highest risk youth. This study showed the importance of the GBG as a first grade, universal intervention on later drug and alcohol use, smoking, and antisocial personality problems for urban, primarily African American males from a socioeconomically disadvantaged area in Baltimore. Because disruptive and aggressive behavior often predicts drug and alcohol abuse

(Walker, Ramsey, & Gresham, 2004), it is critical to treat preventatively with a universal intervention such as GBG.

Mental health issues were also investigated longitudinally with these cohorts from the Baltimore City School District. In a study of 19-21 year olds who had participated in the GBG as first and second graders, Wilcox et al. (2008) reported that the GBG was associated with reduced risk of suicidal ideation, though this effect was reduced in the second cohort. Thus these researchers concluded that the GBG as a universal intervention in first grade may defer or reduce suicidal ideation and suicide attempts, and that this intervention is effective with minority populations.

A third longitudinal study looked at antisocial personality disorder and violent criminal behavior in these cohorts of students from Baltimore. Petras et al. (2008) found that aggressive and disruptive students who were randomly assigned to the GBG condition in first and second grades were significantly less likely to be diagnosed with anti-social personality disorder (ASPD) or display violent criminal behavior as adolescents. Researchers concluded that the GBG is an effective preventive measure for later difficulties, and is effective for use with minority populations.

In follow-up, Bradshaw et al. (2009) reported on their longitudinal investigation of subsequent cohorts in the Baltimore City School District. Students who received the GBG and enhanced curriculum in first and second grade showed improved outcomes on academic performance, decreased special education services, and increased high school graduation and post high school education at the age of 19. This combination of services produced superior results to a comparison program that was focused on family involvement and parenting behavioral strategies. Additionally, services for these students

were offered in the public health model of primary, secondary, and tertiary intervention dependent upon need. These researchers concluded that the GBG plus enhanced curriculum offered in a three-tiered format is effective in producing positive academic outcomes with minority students in socioeconomically disadvantaged areas. This approach is directly applicable to the three-tiered positive behavior support (PBS) model that is now commonly used by schools in the United States.

A more recent study conducted with ethnically diverse students in a public high school in New York City investigated the GBG using an ABAB experimental design (Kleinman & Saigh, 2011). These researchers implemented the classic form of GBG to reduce out of seat behavior, physical fighting, cursing, and shouting in a ninth grade history classroom. Winners were recognized and rewarded on a daily and weekly basis. Results indicated that all target behaviors were significantly reduced during intervention phases relative to baseline phases and that these improvements were maintained at a three-week follow-up.

GBG Applied Internationally

The earliest evidence of the use of GBG with international populations includes a study conducted by Huber in 1979. In this study using fourth grade German students in a summer remedial class, the researcher demonstrated a significant reduction in high frequency disruptive behavior including aggressive behavior, talking back, and out of seat behavior. This early study emphasized temporary behavior change effects produced by the GBG and also its application with an international population of students.

Later research by Phillips and Christie (1986) demonstrated significant decrease in off-task behavior for adolescent students using the GBG in the United Kingdom.

Additionally, a study with fourth and sixth grade students in British Columbia produced a significant reduction in inappropriate verbalizations in both classrooms (Kosiec et al., 1986). These studies highlight the use of the GBG as an effective behavioral intervention with several international populations.

Similar to the longitudinal studies conducted in classrooms in Baltimore, Maryland, USA, the influence of the GBG was investigated longitudinally in a series of studies conducted in Rotterdam, The Netherlands (van Lier, van der Sar, Muthen, & Crijnen, 2004). Students from 31 first and second-grade classrooms were randomly assigned to control (N = 295) or GBG treatment (N = 371) condition. Treatment was delivered in second and third grades and the students were followed longitudinally. In the first publication with this cohort, researchers reported that Attention Deficit/Hyperactivity (ADH) symptoms were significantly reduced in the treatment compared to the control condition. Additionally, a predicted trajectory was estimated for students displaying ADH symptoms from first to third grade. These students were divided into three classes for analysis (Class 1 had high trajectory of ADH symptoms, Class 2 had intermediate trajectory, Class 3 had low trajectory). Intermediate trajectory (Class 2) students who received GBG treatment showed ADH symptoms below their anticipated trajectory as compared to the control group.

Oppositional-defiant (OD) behaviors were also measured and trajectories estimated for the students in the same way. The GBG treatment demonstrated a significant preventative effect in the development of OD behaviors for students in the high and intermediate trajectory classes. The van Lier et al. study is particularly important because of meeting the evidence based practice standard of randomly assigning

a relatively large number of subjects to control and active treatment groups; its replication internationally, and its demonstrated effectiveness over time.

In a subsequent publication, the Netherlands researchers reported on assessment of peer nominations of antisocial behavior and peer rejection during the four-year period of the initial research with the same population. Children who were projected to display antisocial behavior but received the GBG treatment showed large reductions in antisocial behavior and an associated decrease in peer rejection when compared to children in the control condition (van Lier, Vuijk, & Crijnen, 2005). This indicates that the GBG is an effective preventative measure to reduce antisocial behavior and peer rejection.

Huizink et al. (2009) investigated the same population longitudinally to determine if participation in the GBG for ADH symptoms in third grade mediated onset of smoking at ages 10 and 11, as research indicates that ADH is predictive of early onset smoking. These researchers found that participants in the GBG treatment condition in second and third grade reported lower early onset tobacco use. It is interesting to note, that when parental prenatal smoking was controlled for, this effect was still evident.

In 2009, Witvliet and colleagues examined gender differences and the link between positive peer relations and externalizing problems in 825 Kindergarten students from 30 elementary schools in Rotterdam, The Netherlands. They found that students in the GBG treatment condition had lower levels of externalizing behavior and higher scores on positive peer relations compared to students in the control condition who showed no difference from baseline levels on both measures. They further found that reduced externalizing behavior is partially mediated by improvements in peer acceptance, but this result was found only in boys. This extensive and longitudinal research conducted in

Rotterdam, The Netherlands, indicated that the GBG is an effective tool to reduce undesired classroom behavior, as well as an effective prevention program to reduce early onset smoking, antisocial behavior, and peer rejection with international student populations.

Another Western European study conducted in Belgium used the GBG with 570 elementary students throughout second and third grade (Leflot et al., 2010). These students lived in rural to moderately urban areas and were primarily Flemish speaking. The version of the GBG used in this study was the Dutch version, which reinforces pro-social behavior by praising children who follow rules and removing tokens for rule breakers, but giving no further attention to the antisocial behavior. Teachers reported lower use of negative remarks, increased on-task behavior, and decreased talking out behavior in the intervention compared to control condition.

These researchers further demonstrated that improved classroom behavior mediates development of hyperactive and oppositional behavior (Leflot et al., 2010). At the end of third grade, GBG treatment had a marginally significant impact on slowing the growth of hyperactive and oppositional behavior compared to the control condition. The GBG also contributed to a reduction in teachers' negative remarks and an increase in positive remarks. An interesting claim made by the researchers of this study is that teachers' classroom management strategies are a crucial part in the development of hyperactive and oppositional behavior. That is, if teachers give attention to undesired behavior they reinforce it, making it likely to become a behavioral pattern over time. Thus the Dutch version of the GBG, which focuses on positive behaviors, may have the added advantage of reinforcing positive patterns of behaviors in students.

The GBG has also been combined with other interventions to reduce disruptive classroom behavior internationally. For instance, Ruiz-Olivares and colleagues (2010) combined the GBG with Say-Do-Report (S-D-R) Correspondence Training in a study of 15 students in a rural public school in Southern Andalusia. In this iteration of the GBG plus S-D-R, student teams were required to demonstrate four or fewer instances of target behavior in order to win. Additionally, they were prompted to use choral responding to questions the teacher posed about their expected behavior during the game. For example, the teacher asked, "Are you going to leave your seat?" to which the team replied, "No, we are not going to leave our seats." This choral responding exercise addressed each of the target behaviors prior to the game and addressed the actual occurrences of targeted behaviors after the game (e.g., "Team 2 did you leave your seat?" "No we did not leave our seats."). These researchers demonstrated that GBG/S-D-R significantly reduced disruptive classroom behavior and this reduction was extended to a one-year follow-up after the intervention was discontinued. Another study, also conducted in Spain supports these results with evidence of significant reduction in disruptive behavior for students in secondary education (Coronado-Hijón, 2009). This author also reported that GBG is an intervention that is relatively easy to implement, cost-effective, and adaptable for specific needs or specific populations.

A series of longitudinal studies in public elementary schools conducted in Santiago, Chile produced similar positive results and evidence of long-lasting effect of the GBG (Pérez, Rodríguez, De la Barra et al., 2005; Pérez, Rodríguez, Fernández et al., 2005). Pérez, Rodríguez, De la Barr et al. (2005) found that consistently aggressive and disruptive students who participated in the GBG during first and second grades

experienced significant decreases in challenging behaviors by the end of their second grade year. In a second longitudinal study Pérez, Rodríguez, Fernández et al. (2005) compared third-grade students who had received GBG in first and second grade with an equivalent control group. Students who had participated in the GBG in first and second grade demonstrated lower levels of disobedience, aggression, immaturity, and cognitive deficits in third grade than did the control group. These investigations not only indicate positive behavior change, but also suggest protective factors in avoiding the development of problem behavior.

In addition to addressing behavioral concerns, other researchers have used the GBG in conjunction with academic interventions (Dion et al., 2011). Dion and colleagues investigated the use of the GBG intervention aimed at improving attention along with academic peer tutoring for reading (i.e., First-grade Reading Peer-Assisted Learning Strategies). Students and teachers from 58 first-grade classrooms in 30 French-speaking schools in some of Montreal's most impoverished neighborhoods participated in this study. Schools were assigned to one of three groups: a control group, a peer tutoring group, and a peer tutoring plus GBG group. The results of this study indicated that the GBG significantly improved student attention during the peer tutoring activities for regular students (effect size .81) and for identified inattentive students (effect size 1.22). However, it should be noted that students with higher levels of inattention did not also show an improvement in reading skills when provided with both peer tutoring and GBG interventions. The authors suggested that students with attention problems may display additional characteristics that contribute to academic difficulties, such as a more limited vocabulary and working memory deficits that must also be addressed in order to

effectively improve academic performance.

Although Australian published research on the GBG is limited, Bayer et al. (2009) conducted an investigation into existing research that used randomized, controlled trials to determine which interventions would best be used with Australian children from age zero to eight years. They found the GBG to be one of the most empirically supported programs for behavioral problems and endorse its use in Australian schools. Similarly, Australian researchers Hromek and Roffey (2009) support the use of GBG in the classroom, as games are powerful tools to promote social and emotional learning. These authors maintain that games teach children cooperation, communication, community, and working for a common goal. Additionally, these skills are both useful and necessary to some degree across all cultural and linguistic traditions.

Because of its success in changing behavior in North America and Western Europe, it is not surprising that the GBG has proven effective in developed countries. Even more compelling for the argument of cross-cultural effectiveness of the GBG is research conducted in developing countries. In 1983, Saigh and Umar used the traditional form of the GBG in a typical second grade classroom in the El-Gazera district of Sudan. During instruction in Arabic, the teacher implemented the GBG by dividing the classroom into two teams and marking on a poster when behavioral infractions including verbal disruption, physical disruption, or seat leaving occurred. Because of the limited resources of this school, cost-effective reinforcers were selected from a preference assessment. These included virtually cost-free items such as a victory tags, free time, or a star placed by the student's name on a winner's chart. Weekly, the winning team members received a signed letter commending excellent behavior in the

classroom.

Results from this study indicated that the GBG had a significant impact on reducing disruptive behaviors in the classroom (Saigh & Umar, 1983). Treatment acceptability was indicated in that teachers, students, and parents reported that they liked the game and found it to be a valuable behavior change tool. The findings of Saigh and Umar are important not only because they demonstrate the effectiveness of the GBG in a developing country within a school whose resources are limited, but also for a number of other important reasons. First, by training the teachers in the GBG these researchers provided a more humane and preferred alternative to traditional punitive classroom discipline, which had involved scolding and spanking. Second, these findings demonstrate the GBG's effectiveness in a developing country where 80% of the parents of child participants were illiterate. Third, the GBG proved an effective intervention regardless of level of training in behavior theory as educators, parents, and students had not been exposed to behavior theory or behavior modification; effectiveness of the GBG was not dependent upon prior education. Finally, this study illustrates that the GBG can be implemented and show impressive results in a school that has limited financial resources and that that the effectiveness of the GBG is not dependent upon socio-economic status.

Practice Cautions

Although the majority of research supports the use of the GBG, there are certain cautions with its use. Because of the nature of the interdependent contingency, a classroom full of children can lose access to rewards dependent on the behavior of an individual child. This peer influence has the potential to become bullying or harassment

of children who misbehave (Tingstrom et al., 2006). The benefits of the reinforcer for an individual child may also be outweighed by the temptation to sabotage the entire class. This problem was first encountered in the original research by Barrish et al. (1969) and solved by dropping two sabotaging students from the game and not counting their marks against their teams. Recent research has addressed these problems by offering independent contingencies for particular children and providing corrective feedback. However, a caution is issued that the nature of the group pressure is one of the important components in the program's effectiveness.

Alternative to Corporal Punishment

Corporal punishment generally refers to physical pain that is inflicted in response to undesired behavior and it has been employed in schools and classrooms throughout the world to control student behavior (Wilson, 2002). In 1979 Sweden became the first country to impose a ban on the use of corporal punishment of children. Other countries quickly followed suit and have continued to do so over the past 30 years as societies have become increasingly concerned with humane treatment and the rights of children (Paintal, 1999).

This move to ban corporal punishment may be based in part on evidence that it is associated with poor outcomes in children and adults. For example, in a meta-analysis of more than 50 studies conducted between 1930 and 2000 on the effects of corporal punishment, Gershoff (2002) demonstrated a significant relationship between corporal punishment and childhood aggression with an effect size of .36. Additionally corporal punishment was significantly and positively related to antisocial behavior and delinquency in childhood (.42), as well as criminal, antisocial, and abusive behavior in

adulthood. Further, a significant and negative relationship between mental health and corporal punishment (-.49) was identified.

More recent research of large samples of students indicates similar negative outcomes internationally. For example, a study of 400 fifth-grade students in Alexandria, Egypt revealed that corporal punishment has a significant and deleterious impact on children's relationship with others (Abolfotouh, El-bourgy, Sief El Din, & Mehanna, 2009) and a cross-sectional study in Sri Lanka of a stratified sample of 1226 students aged 12 years indicated that the use of corporal punishment predicted children's later maladjustment (de Zoysa, Newcomb, & Rajapaske, 2006).

Criticisms of the research on the effect of corporal punishment of children include a supposition called the "child-effect hypothesis" (Gershoff & Bittensky, 2007), which claims that corporal punishment is a reaction to child aggressive and disruptive behavior and not the cause. Studies addressing the child-effect hypothesis provide evidence that when controlling for initial levels of aggressive behavior as well as race, gender, and socio-economic status (SES), the use of corporal punishment predicts later aggressive behavior in children. Further, recent longitudinal research indicates that increased corporal punishment predicts increased antisocial behavior in subsequent years (Lansford et al., 2011; Taylor et al., 2010). However, Boutwell, Franklin, Barnes, and Beaver (2011) suggest that genetic factors including gender may moderate the effects of corporal punishment on adverse outcomes in childhood and maintain that not every child who is spanked experiences negative outcomes.

Still, as countries throughout the world move to ban the use of corporal punishment in the schools, there is evidence that teachers may feel that they have been

stripped of a behavior management tool without being offered an effective and suitable replacement. For example, in one study on teachers' perceptions on the ban on corporal punishment in Taiwan, teachers reported difficulty in finding discipline tools that are humane, and they expressed tremendous concern that in the absence of effective tools to manage behavior, teachers would ultimately ignore behavioral violations in order to comply with the law (Low & Yuan, 2011). A similar study investigated the impact of the abolition of corporal punishment on teacher morale over a ten-year period in Blomfontein, South Africa (Naong, 2007). This researcher indicated that a majority of teachers sampled (65%) reported a decline in teacher morale, job-satisfaction, and enthusiasm for teaching that they attributed to an increase in disruptive and undesired classroom behavior since the ban on corporal punishment. This sentiment is echoed in research from the United States that identifies student behavior problems as the major factor in the deterioration of teacher job satisfaction and increased burnout, which leads to teachers leaving the field of education (Walter et al., 2006). Other researchers indicate that despite bans on corporal punishment, parents and educators continued to use it, perhaps due to a lack of effective alternative tools to manage behavior (Dupper & Dingus, 2008; O'Neil, Killan, & Hough, 2009).

Best practices in school discipline indicate that teachers should provide strategies that are proactive, instructive, and corrective in their classrooms (Baer, Cavalier, & Manning, 2002). That is, teachers should explicitly teach behavioral expectations, offer students the opportunity to self-monitor, and consistently provide corrective feedback. Additionally, it is recommended that students be reinforced for demonstrating appropriate behavior. The most efficient way for a teacher to monitor and reward behavior in a busy

classroom is through the use of a group contingency, wherein all students are rewarded provided that the group meets the behavior criteria.

The GBG offers just such an intervention and is a more humane method of discipline. This was first evidenced by Saigh and Umar's (1983) study in the developing country of Sudan. In this research teachers used the GBG to address disruptive classroom behavior and provide a more humane alternative in a classroom that allowed corporal punishment. They found that the GBG was effective in reducing disruptive behavior in the classroom and that teachers found it a preferred and more humane method than the typical methods of scolding and spanking. Therefore, the GBG presents a useful tool for educators who are looking for an alternative to corporal punishment whether or not corporal punishment is allowed in the classroom.

In the current study, the GBG was implemented in a country that had recently outlawed corporal punishment in the schools. Given that teachers in this country often have limited training in classroom management techniques, it is a particularly opportune time to introduce an alternative, effective, and more humane classroom management strategy. Additionally, there is evidence that the GBG is an acceptable treatment in that teachers and students report enjoying the game and would recommend its use in other classrooms. These factors provide a compelling argument for choosing this intervention.

Purpose of Present Study

The purpose of the present research is to extend and update the literature regarding the use of GBG in a developing country where resources are limited, corporal punishment has been recently banned in the classroom, and student population is diverse. The research questions addressed in the present investigation include: (1) Can the GBG

be implemented with fidelity in classrooms with few resources and a diverse student population? (2) Does GBG improve classroom behavior in a developing country that has recently banned corporal punishment, has few educational resources, and a diverse student population? (3) Is the GBG intervention an acceptable treatment as reflected by the ratings of teachers and students in a developing country that has recently banned corporal punishment?

Chapter 3

Methods

Participants and Setting

This study was conducted in a private elementary school in a small town in the developing country of Belize, Central America. Agency and principal consent was obtained for this school in accordance with the Minnesota State University Institutional Review Board policies. That is, the principal, who is also the agent for this private school signed the consent form and indicated the classrooms from which teachers were recruited for this study. Please see Appendix A for this form. The researcher met with teachers and staff at a regularly scheduled teacher's meeting, explained the study, and answered questions raised by staff. After this meeting the researcher met individually with each of the three teachers nominated by the principal as potential participants. During these individual meetings the teachers were offered the option of voluntary participation. All three of the nominated teachers consented to participation as signified by signing teacher consent forms. Please see Appendix B for this form.

Student participants were 32 elementary students aged six to 12 years from three regular classrooms including Beginners, Infant II, and a combined classroom of Standard II and III. These classifications are similar in level to Kindergarten, Grade 2, and Grades 4 and 5 in the United States. The student participants represented diverse backgrounds including 19% Mestizo, 10% Kriol, 29% Spanish, 32% North American, and 10% Mayan. This was reflective of the overall ethnic makeup of the school, which is more diverse than most other schools in the area. Additionally, 96.8% of families whose students participated in this study were bilingual or trilingual and spoke at least two

languages at home including English, Spanish, and Kriol. Classroom instruction during baseline and GBG intervention was solely in English, for classrooms one and two, and bilingual (English and Spanish) for classroom three. Each class also received instruction in Spanish at least one time per week in Spanish language class. The classrooms were approximately equally distributed according to gender.

Teacher participants ranged in level of training, teaching experience, and language experience. All had been trained in the United States and individual teaching experience ranged from two to 15 years. Two teachers held Bachelors degrees; one held a Masters degree. All three teachers spoke English as their first language and all three also spoke Spanish to some degree of fluency. Teachers in classroom one and three also spoke Kriol with some fluency however the teacher in classroom two did not. Classroom resources were limited within the school in that supplies (e.g., pencils, markers, paper, notebooks) were not readily available and although local stores carried such items, they were costly. No computers were available to students or teachers, teacher-made tests were hand generated, and no materials for individual students' accommodation (e.g., keyboards, large print) were available.

All baseline and treatment conditions were conducted in the regular classrooms (15 X 20) during typical classroom activities on regular school days. Two classrooms were set up in standard fashion with rows of desks and chairs throughout the room and the teacher's desk and blackboard located at the front of the room. In the Beginners' class the students sat together at two tables. Data collection was limited to the class period indicated by the teachers as that with the most behavior problems and did not exceed 20 minutes each collection day. For classroom one and three all observations

occurred during math class and for classroom two all observation occurred during language arts.

Measurement

Target behaviors. Teachers in each classroom identified three behaviors to target for intervention. Target behaviors included sitting improperly, talking out, and tattling. Sitting improperly was operationally defined as anything other than being seated with bottom making contact with the chair and facing forward while keeping feet in front of the chair and in contact with the ground. Talking out was operationally defined as any verbalization that was not preceded by a raised hand and a request from the teacher to talk. Tattling was defined as any verbal message that contained content that indicated that another student was not following the rules.

Preference assessment. Prior to data collection, the researcher and teacher for each classroom created a paired-choice preference assessment to determine student-preferred reinforcers. The items on the assessment were based on a series of informal teacher, principal, and student interviews and were limited to those that were free or cost effective. This assessment was administered verbally to classroom one students (Beginners/Kindergarten) by asking each student to indicate orally, which of the pair was the preferred item. For classrooms two and three (Infant II/First Grade and Standard II and III/Fourth and Fifth Grade) the assessment was administered using paper and pencil format, with the researcher reading the choices aloud. Items nominated by the students as most preferred were used as daily reinforcers and included free time, extra credit points, small candies, pencils, erasers, and stickers. The cost of reinforcements did not exceed US $10 per classroom per week.

Observations. Trained school psychology doctoral candidates and masters level university personnel conducted the observations during adaptation, baseline, intervention, and follow-up phases. No more than two observers were present in the classrooms at one time and they avoided engaging students verbally or with eye contact. Observers were trained using a video of typical problem classroom behavior and were required to reach a 90% agreement criterion before data collection began. Practice coding was conducted for three days during the adaptation period before data collection.

Data was collected using a 15-second partial interval recording system of one student in the classroom at a time and rotating target students every interval. Each student in the classroom was observed in turn resulting in multiple observations of each child during the 20-minute observation period. Please see Appendix C for this form.

Observer agreement. Interobserver agreement (IOA) data was collected for 30% of observations during baseline, intervention, and follow-up sessions. Percentage of agreement was calculated on an interval-by-interval basis by dividing the number of agreements by agreements plus disagreements and multiplying by 100% (Kazdin, 1982). Mean IOA was 96% with a range of 87% to 100% and SD of 2.80 across all sampled observations. Table 1 includes IOA Mean, Range, and SD for each classroom.

Table 1

IOA Mean, Range, and SD by Classroom

Classroom	*Mean*	*Range*	*SD*
One	95%	88-100%	3.43
Two	98%	94-100%	1.94
Three	97%	91-100%	2.17

Procedures

Adaptation period. Observers were present in each classroom during the targeted period for three days before the beginning of data collection to enable the students and teachers to adapt to their presence. During this time observers were seated in the back of the room, silently practiced coding target behaviors, and avoided engaging with the students.

Intervention training with teachers. Teachers who volunteered to participate were trained in the rules of the GBG. The training was conducted in one-on-one sessions in which the rules of the GBG were explicitly taught, modeled, and practiced with corrective feedback provided. The teachers were allowed to practice these skills with the researcher before implementing the intervention in their classroom. Additionally, teachers were encouraged to create teams that were equally balanced with those students who were likely to demonstrate the targeted behaviors prior to beginning the intervention each day. Training sessions lasted approximately 20 minutes. The researcher also discussed the caveats of this intervention with each teacher and asked the teachers to watch closely for signs of bullying or harassment during the intervention. It was decided that if evidence of either was observed, the student(s) would be removed from the universal intervention without knowledge of the other students and that a targeted intervention would be implemented. No bullying or harassing behaviors were observed by any of the teacher participants or observers during the course of this investigation and no individual contingencies were implemented for any of the participating students during the investigation. However, participating classroom teachers identified two students who did not respond to this universal intervention as well as peers, based on

casual observation that these two students were often responsible for earning hash marks for their teams. These two teachers requested individual contingencies for the identified students and implemented the contingencies in the classroom after the completion of this study.

Experimental design. A combined single-subject experimental design (multiple baseline with reversal across classrooms) was used to investigate the effectiveness of the intervention (Kazdin, 2011). After the adaptation period, this eight-week study began with the collection of baseline observational data in all three classrooms. The beginning of intervention phase was staggered by three days between classrooms such that classroom one began intervention after three days of baseline, classroom two began intervention after six days of baseline, and classroom three began intervention after nine days of baseline.

Baseline. Adaptation period was followed by baseline (A) condition in which trained observers recorded the occurrence of target behaviors during regular classroom activities. When target behaviors occurred during the baseline condition, regular classroom teachers used common strategies like, ignoring, scolding, penalizing, and removing disruptive students from the room. No explanations or directions regarding the GBG were provided to the students during baseline phases. Initial baseline phase lasted three days for classroom one, six days for classroom two, and nine days for classroom three and subsequent return to baseline was influenced by stability and trend in the data such that when three consecutive data points revealed stability, phase change was implemented. This resulted in a five-day return to baseline for classroom one and a three-day return to baseline for each of classrooms two and three.

GBG intervention. At the beginning of the targeted class period each day of intervention, teachers in all three classrooms announced that the class would be playing the Good Behavior Game. Teachers explained that students would have an opportunity to win prizes and privileges during the targeted class period by following the posted class rules each day of the week. Teachers selected daily prizes based on the preference assessment and students were told which prize they would be working toward on each day of intervention. Teachers gave examples and non-examples of rule breaking behavior for each of the three rules, assigned students to teams each day, and wrote the team names on the board.

The composition of teams varied daily in that teachers assigned different students to teams each day before beginning the game. This was done for two reasons. First, so that teachers could ensure that students who were likely to be more disruptive were evenly distributed between teams, and second, to avoid student complaints about a particularly disruptive student being placed on a certain team consistently. The composition of the teams was left up to the teacher to decide and this was accomplished quickly and without extensive discussion. It also may have acted as an establishing operation for students to prepare themselves for the game.

After the teams were determined, students were instructed that anytime a team member broke a rule, a hash mark would be written under their team's name and that it would count against their team. Teachers informed the students that the team with the fewest hash marks at the end of the period would win the prize for that day. Additionally, each classroom had criterion for both teams to win. The criteria were suggested by the researcher based on procedures employed with similar-aged students in

previous research (see e.g., Barrish et al., 1969; Dolan et al., 1993; Lannie & McCurdy, 2007; Tingstrom et al., 2006). Classroom teachers were also asked for their input on a reasonable number of rule infractions to allow in a 20-minute period that could still result in reinforcement. Based on agreement with the teachers and data from previous investigations of the GBG, the criterion were set as follows: in classroom one, both teams gained access to the reinforcer as long as each had earned six or fewer hash marks. In classroom two, the criterion was set at five or fewer, and in classroom three both teams had to earn four or fewer hash marks in order to win the game and receive the reinforcer. If one team earned more than the criterion, the team with the fewest hash marks earned the prize. This occurred on one day for classroom one and on two consecutive days for classroom two. During all other days of the intervention, all teams received access to the reinforcer by meeting the criterion.

During intervention, when a teacher observed a student breaking the rules, she issued a reminder such as "Alisa, please keep your backside on your chair", and then drew a hash mark on the board under Alisa's team name. Initial intervention phase lasted five days for all three classrooms and the length of the return to intervention phase varied among the classrooms in keeping with the multiple baseline design. This resulted in a total of 14 days of intervention for classroom one, 13 days of intervention for classroom two, and ten days of intervention for classroom three.

Follow-up. Follow-up observations were conducted in the classrooms at two-week and two-month intervals to determine if the teachers were continuing to use the intervention and if the intervention continued to be successful.

Fidelity of implementation. Treatment integrity, or fidelity of implementation, is

a measure of the degree to which the intervention is implemented as intended to all participants in an equal and comparable fashion (Smith, Daunic, Taylor, & Florida 2007). Without measurement of treatment integrity, researchers and interventions cannot determine whether observed changes in behavior are due to treatment or some other extraneous factor (Belig et al., 2004). For this research, treatment integrity was assessed via direct observation using a six-item fidelity checklist. This checklist was constructed to include the critical elements of the GBG established by Harris and Sherman (1973) including breaking the classroom into teams and rewarding the teams that met a set criterion of number of behaviors observed (i.e., won the game) with a reinforcer. Additionally, this fidelity checklist included items related to the rules of the game. For example, teachers were required to remind student of the rules of the game and demonstrate examples and non-examples of rule-violating behavior. They were also required to announce when the game began and when it ended. Treatment integrity was assessed during 43% of observations immediately after the end of the game and included both baseline and intervention conditions in approximately equal measure across classrooms. Please see Appendix D for this checklist.

Treatment acceptability. Treatment acceptability is a measure of the degree to which participants find a treatment unbiased, effective, and appropriate (Finn & Sladeczek, 2001). Behavioral researchers have emphasized the importance of assessing treatment acceptability in order to better navigate the chasm between science and practice and develop treatments that are acceptable to consumers. School psychologists are interested in treatment acceptability so that they may recommend treatments that are likely to be used with fidelity (Nastasi & Truscott, 2000). That is, if teachers and

students value an intervention, find it fair and appropriate to the circumstances, they are more likely to use it as it was designed, thus obtaining the maximum benefit from the intervention. The two measures used in this study are modeled after Kazdin's (1981) definition of acceptability and have both been adapted from the original Intervention Rating Profile – 20 Item Scale (IRP-20) (Witt & Martens, 1983), which was developed to assess teachers' view of the suitability, appropriateness, and acceptability of a treatment.

The Children's Intervention Rating Profile (CIRP) (Turco & Elliott, 1986) is a six-item, one factor Likert scale measure of treatment acceptability. This instrument is written at a fifth grade reading level and requires students to rate how strongly they agree with statements regarding different aspects of the intervention. For example, students choose a rating between agree (6) and disagree (1) to statements such as "The treatment was fair", "The teacher was harsh", "The treatment might cause problems with friends". Three items (2, 3, and 4) are negatively worded and require reverse scoring and individual item scores range from 1-6 while total scores for the instrument range from 6-42. Finn and Sladeczek (2001) report internal consistency reliabilities between .75 and .89 but lower criterion validity with coefficients between .67 and .69 in correlation with the Treatment Expectancy Scale (Witt & Martens, 1983). Evidence of construct validity has been offered with factor analytic studies and the ability of the CIRP to differentiate between interventions (Finn & Sladeczek, 2001). The wording of this instrument was changed slightly to reflect that it was used as a class-wide intervention and it was read aloud to the students in order to facilitate comprehension. Please see Appendix E for this version of the CIRP.

The Intervention Rating Profile – 15 Item Scale (IRP-15) (Martens, Elliott, &

Darveaux, 1985) is a 15-item version of the original IRP-20 and was developed to bring the assessment of treatment acceptability into the classroom. This six-point Likert scale measures teachers' report of how strongly they agree (6) or disagree (1) with statements about intervention such as "I would be likely to continue to use this intervention", "This intervention was beneficial" or "Most teachers would find this intervention appropriate for the behavior targeted". Individual item scores range from 1-6 and total instrument scores range from 15 to 90. The IRP-15 has reported internal consistency reliabilities ranging from .88 to .98 and evidence of criterion validity with a coefficient of -.86 in correlation with the Evaluative Scale of Semantic Differential (ESSD) (Finn & Sladeczek, 2001). These researchers inverted the scale on the IRP-15 such that low numbers indicated high acceptability while high numbers indicated low acceptability. This is the inverse of the scale on the ESSD and explains the negative direction of the correlation. Construct validity has been evidenced in factor analytic studies and the ability for the IRP-15 to differentiate between interventions. The wording on this measure was changed slightly to reflect its use with a class-wide intervention. Please see Appendix F for this version of the IRP-15.

Chapter 4

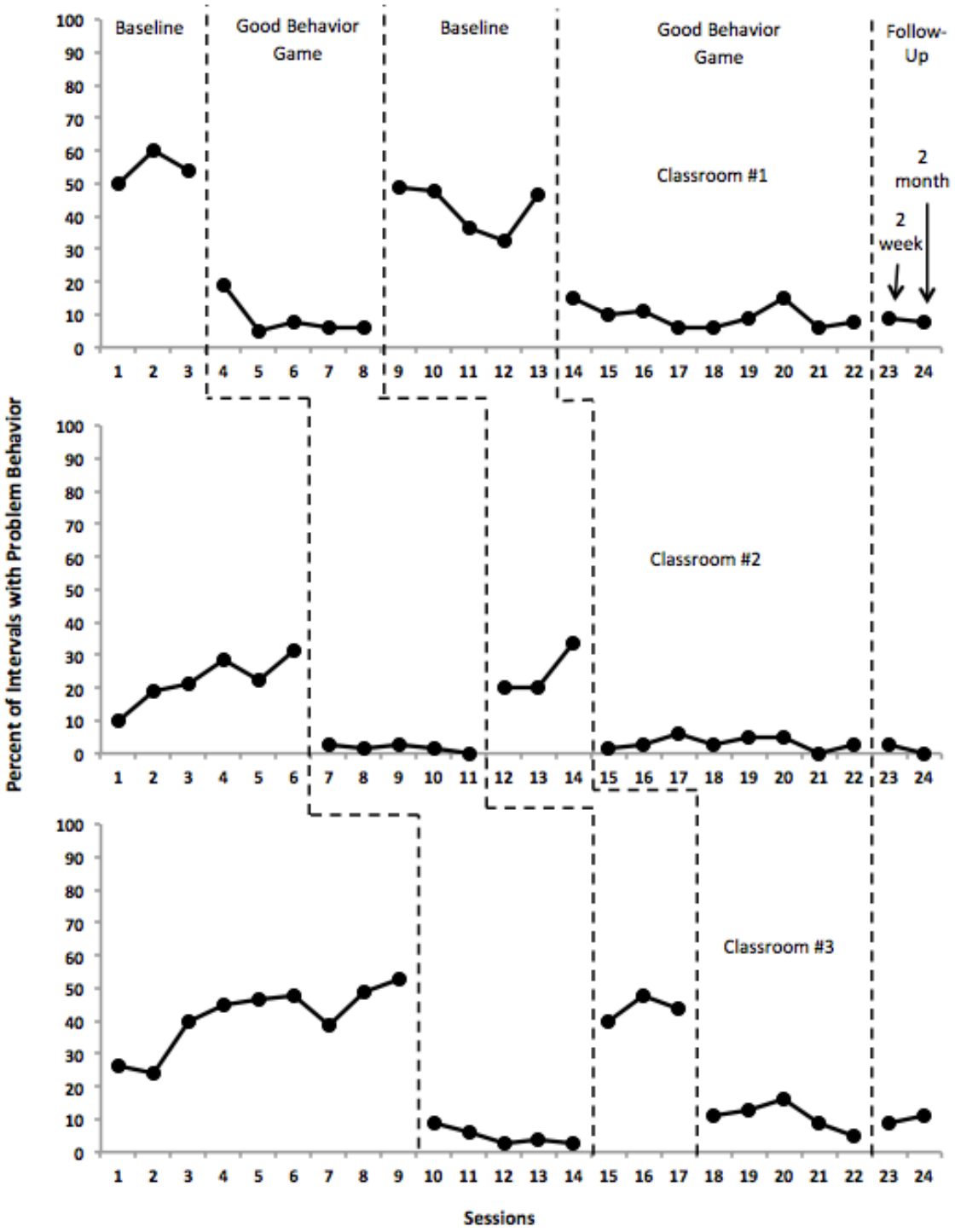
Results

Direct Observation of Targeted Behavior

The results of this class-wide intervention are presented in Figure 1. This figure indicates the percent of 15-second intervals in which the targeted behaviors were observed during baseline, intervention, and follow-up for each of the three participating classrooms.

Figure 1

Percent of 15-second intervals with targeted behavior by classroom



Classroom one. For classroom one, the GBG produced a decrease in targeted behavior from a mean of 55% of intervals during initial baseline to a mean of 9% of intervals during initial intervention phase. On return to baseline phase, targeted behavior increased to a mean of 42% of intervals and return to GBG intervention phase produced a second reduction in targeted behaviors to a mean of 10% of intervals. There were no over-lapping data points from baseline to intervention for classroom one throughout data collection, and baseline produced an overall range of targeted behaviors from 33% to 60% of intervals (M=47%). GBG intervention phase produced an overall range of targeted behaviors from 5% to 19% of intervals (M=9). Teachers in classroom one were able to maintain this reduction in targeted behaviors in follow-up, with observations indicating that behaviors occurred during 9% of 15-second intervals during the two-week follow-up session and during 8% of 15-second intervals during the two-month follow-up session. These results indicate that GBG was successful in reducing disruptive classroom behaviors for classroom one, and that this success was maintained through follow-up.

Classroom two. Teachers in classroom two were also able to produce reductions in targeted behavior from baseline to intervention using the GBG intervention. During initial baseline a mean of 22% of intervals with targeted behavior were observed. This was reduced to a mean of 2% during initial GBG intervention phase. In return to baseline phase, targeted behavior increased to exceed initial baseline levels with a mean of 25%, and a return to GBG intervention phase produced a similar reduction to a mean of 3% of intervals with targeted behavior. Overall range of targeted behaviors during baseline was 10% to 34% of intervals with a mean of 23% of intervals, while overall range of targeted

behaviors during GBG intervention was 0% to 6% of intervals with a mean of 3% of intervals. There were no overlapping data points between baseline and GBG intervention for classroom two, and teachers in classroom two were able to maintain the positive effects of this intervention at follow-up. Observations at two-week follow-up indicated that targeted behaviors were present during 3% of intervals and at two-month follow-up, no targeted behaviors were observed.

Classroom three. Classroom three results were similarly positive and indicated that the GBG intervention produced a reduction in targeted behavior from baseline levels. During initial baseline phase students demonstrated targeted behavior during an average of 41% of intervals. This level of targeted behavior dropped to a mean of 5% of intervals during the GBG intervention phase. Return to baseline produced an increase in behavior that exceeded initial baseline levels (M=44%) and return to GBG intervention again decreased behavior to a mean of 11% of intervals. Overall, targeted behavior ranged from 24% to 53% (M=42%) of intervals during baseline and was reduced to a range from 3% to 16% (M=8%) of intervals during GBG intervention. As with classroom one and classroom two, there were no overlapping data points between baseline and GBG intervention for classroom three. Teachers in classroom three were also able to maintain the positive effects of the GBG intervention at two-week and two-month follow-up. This is reflected in that data that indicate targeted behaviors were observed during only 9% of intervals at two-week follow-up and 11% of intervals during two-month follow-up. Table 1 includes the range and means for each classroom overall and for each of the phases of this experiment.

Table 2

Phase Means, Overall Range, and Overall Means Of Targeted Behavior by Classroom

Class	*Mean A1*	*Mean B1*	*Mean A2*	*Mean B2*	*Overall Range A*	*Overall Range B*	*Overall MeanA*	*Overall Mean B*
One	55%	9%	42%	9%	33-60%	5-19%	47%	9%
Two	22%	2%	25%	3%	10-34%	0-6%	23%	3%
Three	41%	5%	44%	11%	24-53%	3-16%	42%	8%

A, B refer to baseline and GBG treatment phases respectively. A1 refers to initial baseline, A2 refers to return to baseline. B1 refers to initial GBG intervention; B2 refers to return to GBG intervention.

Fidelity of implementation. Treatment fidelity was assessed via direct observation using a six-item fidelity checklist during 43% of sessions within each classroom. Treatment fidelity during intervention ranged from 75%-100% with a Mean of 89% and SD of .47 across classrooms. Table 3 includes mean, range, and standard deviation of treatment fidelity for each of the classrooms. Item analysis reveals that teachers had most difficulty remembering to announce which prize the students would be playing for and occasionally neglected to provide non-examples of rule-violating behavior. The critical elements of this intervention as described by Harris and Sherman (1973) were implemented with 100% fidelity during each of the sessions of intervention. Treatment fidelity was also assessed during baseline phases to ensure that teachers employed typical methods of addressing disruptive behaviors and that the treatment was completely withdrawn during return to baseline phase. This is evidenced in that 0% of fidelity behaviors were observed during both initial baseline and return to baseline for all three classrooms.

Table 3

Mean, Range, and SD of Treatment Fidelity by Classroom

Classroom	*Mean*	*Range*	*SD*
One	90%	83-92%	.19
Two	88%	75-100%	.57
Three	90%	75-100%	.65

Treatment acceptability. Students were the administered the Children's Intervention Rating Profile (CIRP) (Turco & Elliott, 1986) which is a six-item Likert scale measure of treatment acceptability based on Kazdin's (1981) definition of acceptability. A mean item score of 5.21 of 6 (SD=1.49) indicated that students reported high treatment acceptability (higher scores indicated greater acceptability). Table 4 provides mean item scores and SD for each of the three classrooms.

Table 4

Mean Item Scores and SD by Classroom CIRP

Classroom	*Mean Item Score*	*SD*
One	5.86	.45
Two	5.04	1.50
Three	5.22	1.69

The IRP-15 (Martens, Elliott, & Darveaux, 1985) was administered to the participating teachers. This 15-item, six-point Likert scale measures treatment acceptability based on Kazdin's (1981) definition of acceptability and the wording was changed slightly to reflect use with a class-wide intervention. A mean item score of 4.98 of 6 (SD=.84) was obtained on the IRP-15, indicating that teachers reported medium high

treatment acceptability. Table 5 includes mean item scores and SD for each of the three classrooms.

Table 5

Mean Item Scores and SD by Classroom IRP

Classroom	*Mean Item Score*	*SD*
One	5.13	.64
Two	5.60	.63
Three	4.20	.56

Bullying and harassment. Because of the nature of interdependent contingencies wherein an entire classroom of students can lose access to a reinforcer if a single student demonstrates rule-violating behavior that is above the set criterion, bullying and harassment can become an issue (Tingstrom et al., 2006). Occasionally the benefits of a reinforcer are not powerful enough to deter the temptation to sabotage the class or a particular reinforcer may not be effective with a particular child. In order to combat this possibility, teachers monitored their students for signs of harassment and bullying and deterred it in several ways. First, teachers chose to create new teams every day so that students who were likely to demonstrate rule-violating behavior were evenly split between the two teams, and so that the roster of each team changed each day. Second, if students were heard to complain about a single student being placed on their team, teachers talked individually with that student about the need to be kind and patient with other students who were having a more difficult time remembering the rules. Third, students were encouraged to develop non-verbal reminders for each other when they observed a team member violating the rules. The researcher witnessed all of these

strategies during the course of this investigation, however these behaviors were not formally measured.

Chapter 5

Discussion

General Discussion

The current study investigated the use of the Good Behavior Game (GBG) (Barrish et al., 1969) to remediate disruptive classroom behavior in a developing country with a diverse population of students for whom education resources are limited and corporal punishment has been recently banned. Using a multiple baseline across classrooms experimental design with an ABAB phase change, this study sought to investigate if the teachers would be able to implement the GBG with fidelity, if the GBG could improve classroom behavior, and to examine if teacher and student participants found the GBG to be an acceptable treatment

While a vast body research has examined GBG, few studies have included participants from developing countries. These include a single study conducted in one second-grade classroom in the El Gazera district of Sudan (see Saigh & Umar, 1983) and a longitudinal investigation of 45 children in first and second grade in Santiago Chile (see Pérez, Rodríguez, De la Barra, & Fernández, 2005; Pérez, Rodríguez, Fernández, & de la Barra, 2005). The current study extends and updates the existing literature that has examined the GBG in developing countries in three important ways. First, it was conducted in a small, rural town in the country of Belize, Central America and as such represents the first investigation using the GBG in schools in this country. Second, this inquiry included a culturally and linguistically diverse student population, more diverse than populations used in previous studies in developing countries. Participants in the present study were from three classrooms including Beginners (Kindergarten), Infant II

(First Grade), and a combination Standard II/Standard III (Fourth-Fifth Grade) and were of Mayan (10%), Kriol (10%), Mestizo (19%), Spanish (29%), and North American (32%) heritage. Additionally, a vast majority of students and their families (96.8%) spoke English and Spanish and/or Kriol with some degree of fluency both at home and at school. Third, this project investigated the effects of the GBG in a country that had recently banned the use of corporal punishment in the school. This represents a first foray into the use of GBG in a developing country with few educational resources using a culturally and linguistically diverse population in a country that has recently banned corporal punishment in the classroom. It is important to note that no formal measures of the use of or attitude toward corporal punishment were used in this study and no incidences of corporal punishment were observed during any part of this research. Thus, the effect of the GBG on attitudes toward or reliance on corporal punishment was not assessed. Rather, the status of this country as one in which corporal punishment had been recently banned was used merely as a descriptive characteristic of the participating country and not as an experimental variable.

Research question one. This investigation posed three research questions. First, can the GBG be implemented with fidelity in classrooms with few resources and a diverse student population? The current research indicates that teachers were able to implement the GBG with fidelity in a school with a diverse student population and few educational resources. This finding is significant in that it represents the first investigation to offer data on fidelity of implementation of the GBG in a developing country with few resources and a diverse student population and speaks to the ability of teachers to implement this effective intervention regardless of cultural and linguistic

traditions or availability of resources within a school.

Treatment integrity, or fidelity of implementation is a measure of the degree to which the intervention in implemented as designed and intended (Johnston & Pennypacker, 2009) and is necessary to determine if change is due to the treatment or could be attributed to extraneous variables (Upah & Tilly, 2002). Treatment fidelity has traditionally been a tool used to aid in interpretation of experimental findings. That is, results of experimental investigation can only be trusted insofar as treatment has been implemented as intended during the investigation and could thus be replicated across contexts (Elliott, Witt, & Kratochwill, 1991; Moncher & Prinz, 1991). In best practice recommendations for implementing interventions, Telzrow and Beebe (2002) advise that treatment fidelity is enhanced when empirically supported and easy to use interventions target behaviors that are important to stakeholders. They further suggest using scripts or manuals to teach the intervention and fidelity checklists to monitor performance of the interventionists.

Several researchers have emphasized the importance of attention to fidelity of implementation in classroom interventions and assessing this fidelity can be accomplished in a number of ways. For the current study, implementation was assessed through a combined approach of providing a six-item checklist to the teacher (Gresham, 1989) and using that checklist during 43% of direct observations (Gresham, Gansle, Noell, Cohen, & Rosenblum, 1993) to determine if the intervention was being implemented as intended. Mean treatment fidelity was high in the current study (89% across classrooms) with a range of 75% to 100%. Further, fidelity was measured during initial baseline and return to baseline conditions to ensure that the teachers completely

withdrew the intervention and reverted to typical means of addressing behavior. Treatment fidelity was 0% in both conditions across all classrooms.

High levels of treatment fidelity in the current study reflects findings of other researchers including McCurdy et al. (2009), Dion et al. (2011) and Tanol et al. (2010). Other researchers indicated slightly lower levels of treatment fidelity including Lannie and McCurdy (2007; 88%), Leflot et al. (2010; 77%), and Wright and McCurdy (2011; 85%). Interestingly, recent research by Donaldson, Vollmer, Krous, Downs, and Berard (2011) demonstrated lower fidelity of implementation than expected (60%); however despite this level of treatment integrity teachers were able to maintain the positive effects of the GBG intervention.

Research question two. Does the GBG improve classroom behavior in a developing country that has recently banned corporal punishment, has few educational resources, and a diverse student population? Evidence from this study indicates that it does. Teacher implementation of the GBG reduced disruptive behavior in classroom one from a mean of 47% of intervals during baseline to a mean of 9% of intervals during treatment. Similarly, classroom three in the current study experienced a decrease in disruptive behavior from a baseline mean of 42% of intervals to a treatment mean of 8% of intervals as a result of the GBG intervention. These results support the vast body of research indicating that the GBG is an effective classroom behavioral intervention (Tingstrom et al., 2006) and also replicates the success of the GBG as demonstrated by Saigh and Umar (1983) in a second grade classroom with few educational resources in the developing country of Sudan.

Classroom two presents a slightly different illustration of the positive results for

this study. Although classroom two had a lower mean level of disruptive behavior at baseline (23%) than the other classrooms, it experienced a drop in targeted behaviors to a mean of 3% during intervention, indicating the success of the GBG in a classroom that had fewer incidences of targeted behaviors relative to other classrooms.

The reasons that classroom two demonstrated fewer behaviors at baseline is unclear, but may be based on several factors. First, the students in classroom two were a combined Standard II and Standard III (Fourth and Fifth Grade) and thus were the oldest student participants in the study. It is possible that the behaviors targeted in this study (out of seat, talking out, and tattling) are affected by student maturation and naturally decrease as students mature. Second, the teacher in classroom two was new to the school and was hired at the beginning of second semester to replace a teacher who left unexpectedly. It is possible that a change in teaching staff in the middle of the school year could have had an effect on baseline levels of disruptive behavior. Third, the new teacher had been present in the classroom for only one week prior to the first data collection observations and it is possible that the level of behavior at baseline was affected by student reactivity to the new teacher. This theory is supported by evidence of a steady and increasing trend from 10% of intervals with disruptive behavior on day one of initial baseline to 31% of intervals with disruptive behavior on day six of initial baseline observations. This trend continued in the return to baseline condition with 22% of intervals with disruptive behavior on the first day of return to baseline and an increasing trend to 34% of intervals with disruptive behavior on the third day of return to baseline. Given this increasing trend in baseline, it is possible that mean baseline levels of disruptive behaviors for classroom two might have been similar to those experienced

by classrooms one and three if this study had been conducted later in the year, after the students had fully acclimated to the new teacher.

Another issue raised by the lower levels of targeted behavior in classroom two is the appropriateness of this treatment in the given circumstance. It could be said that with a mean of only 23% of intervals with disruptive behavior, the level of behavior in classroom two may not have been sufficient to warrant a class-wide intervention and perhaps only a few students should have been targeted. However, best practice in classroom behavior management and discipline indicate that the primary focus of classroom management should be preventative in nature and thus a universal classroom intervention is the best choice (Baer et al., 2002). This approach is most cost effective as it will inhibit the development of undesired behavior in 75% to 85% of students and will do so at a minimal cost per student (Walker, Colvin, & Ramsey, 1995). Thus, the universal approach of the GBG represents a best practice measure for all classrooms, including those for which disruptive behavior is present at relatively low levels.

Research question three. The third research question posed by this investigation inquired if the GBG intervention is an acceptable treatment as reflected by the ratings of teachers and students in a developing country that has recently banned corporal punishment. That is, was this treatment acceptable to teachers and student participants in this study as reflected by ratings of treatment acceptability?

A treatment is considered acceptable to the extent that consumers rate it fair, reasonable, and appropriate (Kazdin, 1981). Acceptability is considered a critical component in insuring the implementation and sustainability of a treatment because if consumers find a treatment aversive or unpleasant, they are not likely to use it regardless

of how effective it is known to be (Wolf, 1978). In his review of the literature on treatment acceptability, Miltenberger (1990) suggests that the critical elements that influence teacher, parent, and student ratings of treatment acceptability include time and teacher training requirements, treatment side effects, degree of disruption of the classroom caused by a treatment, restrictiveness of the treatment, treatment rationale, and promise of treatment effectiveness. School psychologists should choose treatments that have been rated as highly acceptable by parents, teachers, and students as these are most likely to be implemented with fidelity and thus produce best outcomes (Nastasi & Truscott, 2000).

Recently, Wehby, Maggin, Partin, and Robertson (2011) presented evidence of the importance of treatment acceptability in influencing fidelity of implementation of the GBG. These researchers investigated the effect of working alliance, treatment acceptability, and teacher burnout on the fidelity of implementation as measured by number of steps implemented in the Good Behavior Game. A bivariate analysis revealed that teachers' ratings of treatment acceptability explained the most variance in scores. Thus, treatment acceptability was indicated as the most critical of these three components in implementing the GBG with fidelity. This study illustrates the importance of assessing treatment acceptability of the GBG to determine the likelihood of fidelity of implementation.

A handful of assessments have been developed to measure treatment acceptability and many of these have been adapted for use in the classroom (Finn & Sladeczek, 2001). The scales used in this study included The Children's Intervention Rating Profile (CIRP) (Turco & Elliott, 1986) and the Intervention Rating Profile – 15 Item Scale (IRP-15)

(Martens et al., 1985). These instruments were chosen based on acceptable ratings of internal consistency reliability, evidence of criterion related validity, and factor analytic studies of construct validity (Finn & Sladeczek, 2001).

Evidence from the current investigation indicates that teachers rated the GBG as acceptable (4.97 of 6 mean item score) and students rated the GBG as highly acceptable (5.21 of 6 mean item score). Thus, both students and teachers in this study found the GBG acceptable using formal ratings of treatment acceptability. These findings are similar to other studies of the GBG. For example, Lannie and McCurdy (2007) found that teachers rated the GBG acceptable using the IRP and students rated the game as moderately acceptable using a modified version of the CIRP. Using the same instruments, McCurdy et al. (2009) found that the GBG treatment in the lunchroom was moderately acceptable to young students, acceptable to older students, and highly acceptable to teachers. McGoey et al. (2010) found similar results of overall teacher acceptability of the GBG using another measure, the Behavior Intervention Rating Scale (Elliott & Treuting, 1991). Other investigations have used researcher-generated measures and more informal measures of treatment acceptability with similarly positive results (see Kleinman & Saigh, 2011; Kosiec, Czernicki & McLaughlin, 1986; Saigh & Umar, 1983; Tanol et al., 2010). The current research not only showed positive results of treatment acceptability, but also represents the first investigation of the GBG using a formal measure of treatment acceptability in a developing country that has recently banned corporal punishment.

Several informal indicators also pointed toward high treatment acceptability for the GBG within the participating school and also throughout the community.

Approximately two weeks after initial implementation of the GBG, a teacher who was not a participant in the study asked for training and consultation in the use of the GBG for disruptive playground behavior. This teacher indicated that a participating colleague had been impressed with the results in her classroom and recommended that she ask to use this tool. After receiving permission from the principal and ensuring that none of the playground students were participants in the current study, the researcher trained the inquiring teacher and aided in the implementation of the GBG for aggressive behavior on the playground. No formal measure was taken, but the teacher indicated a positive impact in that aggressive playground behavior was reduced through use of the GBG.

A second incident with a non-participating teacher suggested a similarly positive view of the GBG. In this case, a male teacher asked for training and consultation so that he could provide the information to his sister, a teacher in a school in the United States. The researcher provided training and consultation and contact information for continued support to this teacher. In a third example of the positive reaction to the GBG, an itinerant teacher who brought a specialized curriculum on humane treatment of animals to different schools in the town asked that the researcher visit other local schools to train the staff on the GBG. Additionally, as other school staff in this small town began to learn of the success of the GBG, school personnel began to contact the School Psychology Department at Minnesota State University to request training in this program. These requests resulted in the researcher creating a training manual and trouble-shooting guide for distribution to schools in the town. The principal of the current school also asked for copies of the training manual to use for new teacher training for the following year. Subsequently, students in the School Psychology Doctoral Program at Minnesota State

University – Mankato continue to provide training and follow-up services for interested teachers on yearly visits to the area through an international practicum program. Please see Appendix G for this training manual.

Practical issues and teacher concerns. One matter that was anticipated to cause concern among participating teachers in this study is an issue inherent in ABAB experimental design, the removal of an effective treatment (Barlow, Nock, & Hersen, 2009). When the GBG was removed in this investigation, disruptive behavior increased to pre-treatment levels and exceeded original baseline measures in some instances. It could be argued that removal of an effective classroom behavioral intervention is contrary to best practice measures in behavior management and should be avoided, even in experimental research. The researcher addressed this issue by reassuring teachers that withdrawal would be brief, and by reinstating treatment as quickly as possible according to best practices in experimental research and trends in the data. This resulted in a withdrawal phase of three days in length for classrooms two and three and five days in length for classroom one. Because of the nature of the targeted behavior (disruptive but not aggressive) the likelihood of injury or destruction of property was low and thus this design was determined to be appropriate for the circumstances. The multiple-baseline across classrooms design was adopted as an additional control in case withdrawal of treatment resulted in unacceptable levels of behavior, which would have necessitated reinstating the treatment before a trend in the data could have been established. This did not occur, and the project was implemented as planned.

A second issue with the ABAB design is the potential reluctance of staff to remove a treatment that is working simply to satisfy the requirements of an experimental design.

Results can be confounded if the treatment is not completely withdrawn. To address these issues the researcher gave special attention to attaining the cooperation of teachers during the withdrawal phase by explaining its purpose and the importance of removal of the intervention. Teachers were instructed to return to typical means of addressing disruptive behavior during the withdrawal phase. Fidelity of implementation was assessed during all experimental phases to determine if the intervention was implemented as designed and also to verify that it was completely withdrawn during return to baseline phase.

Summary of Primary Findings

The current study serves to extend and update the literature on the GBG in several important ways. First, it demonstrates success in changing student behavior in a developing country with a diverse student population, few educational resources, and in which corporal punishment has recently been banned, and it is the first investigation to do so. This study offers evidence that the GBG is not influenced by cultural or linguistic traditions and is an intervention that is effective across cultures. For teachers who are struggling to identify effective classroom management tools, and those for whom corporal punishment has been banned, this research offers evidence of a classroom intervention that is effective, is well-liked by teachers and students, and is relatively simple to implement. Finally, this study provides evidence that teachers can produce meaningful change in disruptive student behavior even in schools with few educational resources (e.g. limited school supplies, classroom materials) and no access to technology or tools for individual student accommodations.

Second, this investigation illustrates that students and teachers in developing countries with few educational resources and diverse student populations find the GBG to

be an effective, fair, and appropriate tool, and thus are likely to use this intervention for disruptive classroom behavior. It is important to emphasize that the property of reinforcement is not moderated by culture in that while identifying those items that are reinforcing may differ according to culture, the basic property of reinforcement does not. Thus, it is important that teachers ask for input from the participating students to identify items that should be use as reinforcers and to attend to the fact that reinforcers can lose their potency over time. Teachers should continuously monitor student behavior to identify increasing trends in disruptive behavior, which is an indicator that the present menu of reinforcers are losing their potency and that new reinforcers should be identified.

Third, this study illustrates that teachers in developing countries with few educational resources and diverse student populations are able to implement this intervention with fidelity. However, continued monitoring of fidelity is warranted as implementation "drift" can and often does occur in the absence of monitoring. This concept is similar to observer drift (Johnson & Pennypacker, 2009) in which there occurs a change in observer performance over time. Implementation drift occurs when teachers cease to implement the intervention as intended. This generally occurs slowly and by small measure, but it can have a large and detrimental impact on the success of the intervention.

Chapter 6

Implications, Limitations, and Future Directions

Implications for Educators

The current research has several implications for practice. First, similar to Saigh and Umar (1983) the current research endorses the use of the GBG as an effective and more humane alternative to corporal punishment to address disruptive behavior in schools. Second, this investigation demonstrates that the GBG is effective in reducing disruptive classroom behavior in a developing country with few educational resources and a diverse student population. Therefore, it offers an effective tool for all teachers regardless of level of training, availability of resources, and diversity of student participants.

Third, because of the immediate and positive effects of the GBG, it may serve as a first step in classroom behavior management training, particularly for schools in which teachers have little training in this area or in schools that have relied on corporal punishment. The GBG allows teachers to react to disruptive behavior by administering a "strike" to the team and therefore may allow the teacher to feel that he/she is punishing the behavior. It is commonly assumed that punishment is the appropriate and most effective response to undesired behavior, particularly by those who have had no training in behavior theory. However, best practices in classroom management support the use of school-wide systems like Positive Behavior Support (PBIS) that focus on rewarding positive behavior rather than punishing undesired behavior. Yet for some classrooms and some teachers, changing the focus from negative to positive behavior may be too great a leap in behavior management skills. The GBG allows teachers to have quick success in

classroom management and may serve as a first step in a process that leads to best practice methods. For example, once a teacher has reduced disruptive behavior using the GBG, he might alter the game to a positive variation in which points are awarded to teams as they are caught demonstrating positive behaviors (see Wright & McCurdy, 2011). This class-wide intervention can then be viewed as a tool within the larger context of a school-wide system.

Public health systems and best practices in education support the use of universal interventions to prevent problems and strategic and targeted interventions to address increasing levels of need (Kellam et al., 2011). The GBG offers a tool to implement this first line of defense in a way that is effective, easy for teachers to manage, and pleasing to stakeholders across cultural, linguistic, and socioeconomic traditions. The GBG is based on well-understood rules of behavior theory and therefore its effectiveness is not moderated by diversity in the classroom, but rather by proper selection of reinforcements and attention to treatment fidelity. Finally, because of the solid and defensible body of research demonstrating the effectiveness of the GBG and its application in the current investigation, teachers and school psychologists can feel confident that the GBG is an effective tool across cultures. School personnel who understand GBG possess a powerful instrument to promote behavior change in schools.

Limitations

This study is not without limitations. First, it was conducted in one school in one area of the country of Belize using a relatively small sample of students (N=32). Further, this was a private school whose teachers had more training and whose students were more diverse than typical schools in the small town. Thus, these results may not be

completely generalizable to other schools in the area, in the country, or to other developing countries. However, this school was specifically chosen for its diversity to demonstrate the effect of the GBG on diverse classrooms in a developing country and the results of this study buttress the solid evidence from more than 40 years of research on the GBG. Given this body of work along with evidence from the current study a conclusion can be drawn that the GBG is effective across cultures, in developing countries with few resources, and in places where corporal punishment has been banned.

A second limitation includes that individual data was not collected on student performance which would have aided in identifying those students who did not respond to this universal intervention as would be recommended by best practices. However, informal data identified two students who continued to demonstrate difficulty in following the GBG rules. Although these two students were not dismissed from the universal intervention, individualized behavioral programs were developed for both students and teachers implemented these programs after the completion of this project.

Third, discouraging student complaints about particularly disruptive peers being placed on their team might have served to inhibit tattling during the game, which was one of the measured behaviors. This could possibly have confounded the data. However, this occurred only one time in one classroom before the start of the game on single day. A student in the Beginners (Kindergarten) classroom made a disappointed-sounding vocalization (aw!) when a particularly disruptive student was placed on his team. The teacher reminded the student that it was unkind to complain, and that complaining would not be tolerated. Because this student's reaction is similar to tattling, the teacher's reprimand could have served to inhibit tattling during the subsequent game. However,

subsequent tattling was observed during the game on occasion and thus the true influence of this practice is unclear.

Finally, fidelity of implementation data was collected on only 43% of total observations and inter-rater reliability of fidelity was not collected. This might raise questions regarding the value of fidelity data and the level of treatment fidelity that occurred during observations in which this data was not collected. However, procedures used in this study reflect those used in other research on the GBG. For example, Lannie and McCurdy (2007) reported that treatment fidelity was collected during 29% of sessions, McCurdy et al. (2009) collected treatment fidelity data during 45% of sessions, and both Kosiec et al. (1986) and Wright and (2011) collected fidelity data one day per week during school-based investigations of the GBG. Some researchers collected no treatment fidelity (McGooey et al., 2010; Ruiz et al., 2010) but listed this as a limitation, and others made no mention of treatment fidelity (Saigh & Umar, 1983; Kleinman & Saigh, 2011). In one exemplary study, Tanol et al. (2010) collected fidelity data every day of treatment, however none of these studies mentioned collecting reliability data on fidelity data. Best practice in experimental research indicates that fidelity of implementation should be measured across experimental conditions in equal measure (Bellg et al., 2004). However, no hard and fast guidelines have been offered as to acceptable levels of treatment fidelity or to the number of sessions that should be monitored (Gersten, Fuchs, Compton, Coyne, Greenwood, & Innoscenti, 2005).

A unique strength in the design of this study with regard to fidelity of implementation data is that the researcher collected data in both baseline and treatment conditions in approximately equal measure. This was done in keeping with best practice

recommendations (Smith et al., 2007) and to determine whether the treatment was implemented as intended and fully withdrawn during baseline phase.

Future Research

While the current study extends the research of the GBG in developing countries, it represents one of only a few studies to do so. Further examination in other developing countries, perhaps those more remote and less Westernized, would solidify these findings across cultures. As indicated by Saigh and Umar (1983) many people in the developing world have not been trained in the benefit of behavior modification and research using evidence-based behavioral interventions like the GBG serves three purposes. First, it extends and strengthens the knowledge base on the GBG across cultures. Second, it provides teachers with a valuable and effective tool to manage behavior in a humane way. Third, it offers a stepping-stone in helping those with less training in behavior theory to understand a systems-wide approach to classroom behavior management.

One interesting area of research with the GBG that has not been fully investigated is the mechanism by which the benefit of GBG generalizes to other contexts. There is a solid body of evidence longitudinally that indicates participating in GBG in first and second grades offers protection against undesirable outcomes in adolescence and early adulthood (see Dion et al., 2001; Huizink, Lier, & Crijnen, 2009; Pérez et al., 2005; Petras et al., 2008; Poduska et al., 2008; van Lier et al., 2004; Wilcox et al., 2008; Witvleit et al., 2009). However, the mechanism by which this generalization occurs has not been identified. For example, how long and how intensively must the GBG be implemented to ensure positive outcomes longitudinally? Is the benefit of the GBG immediately apparent in other contexts (e.g., in other classrooms, on the playground)?

Continued research with the GBG in other developing countries and longitudinal investigations that pinpoint the level and intensity necessary for this intervention to garner long-term benefits would extend the literature on this effective tool.

References

Abolfotouh, M.A., El-Bourgy, M. D., Sief El Dinz, A. G., & Mehanna, A. A. (2009). Corporal punishment: Mother's disciplinary behavior and child's psychological profile in Alexandria, Egypt. *Journal of Forensic Nursing, 5,* 5-17.

Babyak, A. E., Luze, G. J., & Kamps, D. M. (2000). The Good Student Game: Behavior management for diverse classrooms. *Interventions in the School and Clinic, 35,* 216-223.

Barlow, D. H., Nock, M. K., & Hersen, M. (2009). *Single case experimental designs: Strategies for studying behavior change* (3rd ed.). Boston, MA: Pearson.

Barrish, H. H., Saunders, M., & Wolf, M. M. (1969). Good behavior game: Effects of individual contingencies for group consequences on disruptive behavior in a classroom. *Journal of Applied Behavior Analysis, 2(2),* 119-124.

Bayer, J., Hiscock, H., Scalzo, K., Mathers, M., McDonald, M., Morris, A., … Wake, M. (2009). Systematic review of preventive interventions for children's mental health: What would work in Australian contexts? *Australian and New Zealand Journal of Psychiatry, 43*(8), 695-710.

Bear, G. G., Cavalier, A. R., & Mannina, M. A. (2002). Best practices in school discipline. In A. Thomas & J. Gromes (Eds.), *Best Practices in School Psychology IV* (977-992). Bethesda, Maryland: National Association of School Psychologists.

Bellg, A. J., Borrelli, B., Resnick, B., Hecht, J., Minicucci, D. S., Ory, M., … Czajkowski, S. (2004). Enhancing treatment fidelity in health behavior change studies: Best practices and recommendations from the NIH behavior change consortium. *Health Psychology, 23, 443-451.*

Bradshaw, C. P., Zmuda, J. H., Kellam, S. G., & Ialongo, N. S. (2009). Longitudinal impact of two universal preventive interventions in first grade on educational outcomes in high school. *Journal of Educational Psychology, 101*(4), 926-937.

Boutwell, B. B., Franklin, C. A., Barnes, J. C., & Franklin, K. M. (2011). Physical punishment and childhood aggression: The role of gender and gene-environment interplay. *Aggressive Behavior, 7,* 559-568.

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement, 20,* 37-46.

Coronado-Hijón, A., (2009). Assessment of an educational behavioral management program [Abstract]. *Electronic Journal of Research in Educational Psychology, 72*(2), 805.

de Zoysa, P., Newcomb, P. A., & Rajapaske, L. (2006). Corporal punishment in Sri Lankan context: Psychological outcomes for our children. Hauppage, NY: Nova Science Publishers.

Dion, E., Roux, C., Landry, D., Fuchs, D., Wehby, J., & Dupéré, V. (2011). Improving attention and preventing reading difficulties among low-income first-graders: A randomized study. *Prevention Science, 12*(1), 70-79.

Dolan, L. J., Kellam, S. G., Brown, C. H., Wheeler, L.. Werthammer-Larson, L., Rebok, G. W., … Ford, C. (1993). The short-term impact of two classroom-based preventative interventions on aggressive and shy behaviors and poor achievement. *Journal of Applied Developmental Psychology, 14*(3), 317-345.

Donaldson, J. M., Vollmer, T. R., Krous, T., Downs, S. & Berard, K. (2011). An evaluation of the Good Behavior Game in Kindergarten classrooms. *Journal of*

Applied Behavior Analysis, 44, 605-609.

Dupper, D. R. & Dingus, A. E. M. (2008). Corporal punishment in U.S. Public Schools: A continuing challenge for school social workers. *Children and Schools, 30*, 243-250.

Elliott, S. N., & Treuting, M. V. (1991). The Behavior Intervention Rating Scale: Development and validation of a pretreatment acceptability and effectiveness measure. *Journal of School Psychology, 29*, 43-51.

Elliott, S. N., Witt, J. C., & Kratochwill, T. R. (1991). Selecting, implementing, and evaluating classroom interventions. In G. Stoner, M. R. Shinn, & H. M. Wlaker (Eds.), *Interventions for achievement and behavior problems* (99-135). Silver Springs, MD: National Association of School Psychologists.

Embry, D. D. (2002). The good behavior game: A best practice candidate as a universal behavioral vaccine. *Clinical Child and Family Psychology Review, 5*(4), 273-297.

Finn, C. A., & Sladeczek, I. E. (2001). Assessing the social validity of behavioral interventions: A review of treatment acceptability measures. *School Psychology Quarterly*, *16,* 176-206.

Gershoff, E.T. (2002). Corporal punishment by parents and associated child behaviors and experiences: A meta-analytic and theoretical review. *Psychological Bulletin, 128*, 539-579.

Gershoff, E. T. & Bitensky, S. H. (2007). The case against corporal punishment of children: Converging evidence from social science research and International Human Rights Law and implications for U.S. public policy. *Psychology, Public Policy, and Law, 13*, 231-272.

Gersten, R., Fuchs, L. S., Compton, D., Greenwood, C., & Innocenti, M. S. (2005). Quality indicators for group experimental and quasi-experimental research in special education. *Exceptional Children, 71*, 149-164.

Gresham, F. M. (1989). Assessment of treatment integrity in school consultation and prereferral intervention. *School Psychology Review, 17*, 211-226.

Gresham, F. M. (2005). Response to intervention: An alternative means of identifying students as emotionally disturbed. *Education and Treatment of Children*, *28,* 328-344.

Gresham, F. M., Gansle, K. A., Noell, G. H., Cohen, S., & Rosenblum, S. (1993). Treatment integrity of school-based behavioral intervention studies: 1980-1990. *School Psychology Review, 10*, 206-231.

Harris, V. W., & Sherman, J. A. (1973). Use and analysis of the Good Behavior Game to reduce disruptive classroom behavior. *Journal of Applied Behavior Analysis, 6*, 405-417.

Huber, H. (1979). The value of a behavior modification programme, administered in a fourth

grade class of a remedial school. *Praxis der Kinderpsychologie und Kinderpsychiatrie*, *28,* 73-79.

Huizink, A. C., van Lier, P. A. C., & Crijnen, A. A. M. (2009). Attention deficit hyperactivity disorder symptoms mediate early-onset smoking. *European Addiction Research, 15*(1), 1-9.

Hromek, R., & Roffey, S. (2009). Promoting social and emotional learning with games: "It's fun and we learn things", *Simulation and Games*, *40*, 626-644.

Johnston, J. M. & Pennypacker, H. S. (2009). *Strategies and tactics of behavioral research* (3rd ed.). New York: Routledge.

Kazdin, A. E. (1981). Acceptability of child treatment techniques: The influence of treatment efficacy and adverse side effects. *Behavior Therapy*, *12*, 493-506.

Kazdin, A. E. (1982). *Single-case research designs: Methods for clinical and applied settings.* New York: Oxford Press.

Kellam, S. G., Hendricks Brown, C., Poduska, J. M., Ialongo, N. S., Wang, W., Toyinbo, P., … Wilcox, H. C. (2008). Effects of a universal classroom behavior management program in first and second grades on young adult behavioral, psychiatric, and social outcomes. *Drug and Alcohol Dependence, 95*(1), S5-S28.

Kellam, S. G., Ling, X., Merisca, R., Brown, C. H., & Ialongo, N. (1998). The effect of the level of aggression in the first grade classroom on the course and malleability of aggressive behavior into middle school. *Development and Psychopathology, 10(2*), 165-185.

Kellam, S.G., Mackenzie, A. C. L., Hendricks Brown, C., Poduska, J. M., Wang, W., Petras, H., & Wilcox, H. C. (2011). The Good Behavior Game and the future of prevention and treatment. *Addiction Science & Clinical Practice*, *6*(1), 73-84.

Kellam, S. G., Reid, J., & Balster, R. L. (2008). Effects of a universal classroom behavior program in first and second grades on young adult problem outcomes. *Drug and Alcohol Dependence, 95*(1), S1-S4.

Kleinman, K. E., & Saigh, P. A. (2011). The effects of the good behavior game on the conduct of regular education New York City high school students. *Behavior Modification, 35*(1), 95-105.

Kosiec, L. E., Czernicki, M. R., & McLaughlin,T. F. (1986). The good behavior game: A replication with consumer satisfaction in two regular elementary school classrooms. *Techniques*, *2*, 15-23.

Landrum, T., Tankersly, M., & Kauffman, J. (2003). What is special about special education for children with emotional or behavioral disorders. *Journal of Special Education, 37*, 148-156.

Lannie, A. L., & McCurdy, B. L. (2007). Preventing disruptive behavior in the urban classroom: Effects of the good behavior game on student and teacher behavior. *Education & Treatment of Children, 30*(1), 85-98.

Lansford, J. E., Criss, M. M., Laird, R. D., Shaw, D. S., Pettit, G. S., Bates, J. E., & Dodge, K. A. (2011). Reciprocal relations between parents' physical discipline and children's externalizing behavior during middle childhood and adolescence. *Developmenta Psychopathology, 23*, 225-238.

Leflot, G., van Lier, P. A. C., Onghena, P., & Colpin, H. (2010). The role of teacher behavior management in the development of disruptive behaviors: An intervention study with the good behavior game. *Journal of Abnormal Child Psychology: An Official Publication of the International Society for Research in Child and Adolescent Psychopathology, 38*(6), 869-882.

Low, L. L. & Yuan, Y. S. (2011). Teachers' perceptions and concerns on banning of corporal punishment and its alternative disciplines. *Education and Urban Society*, *43*(2), 137-164.

Martens, B. K., Witt, J. C., Elliott, S. N., & Darveaux, D. (1985). Teacher judgments concerning the acceptability of school-based interventions. *Professional*

Psychology: Research and Practice, 16, 191-198.

McCurdy, B. L., Lannie, A. L., & Barnabas, E. (2009). Reducing disruptive behavior in an urban school cafeteria: An extension of the good behavior game. *Journal of School Psychology, 47*(1), 39-54.

McGoey, K. E., Schneider, D. L., Rezzetano, K. M., Prodan, T., & Tankersley, M. (2010). Classwide intervention to manage disruptive behavior in the kindergarten classroom. *Journal of Applied School Psychology, 26*(3), 247-261.

Miltenberger, R. C. (1990). Assessment of treatment acceptability: A review of the literature. *Topics in Early Childhood Special Education, 10*(3), 24-38.

Moncher, F. J. & Prinz, R. J. (1991). Treatment fidelity in outcome studies. *Clinical Psychology Review, 11*, 247-266.

Nastasi, B. K., & Truscott, S. D. (2000). Acceptability research in school psychology: Current trends and future directions. *School Psychology Quarterly, 14*(2), 117-122.

National Council for Accreditation of Teacher Education. (2008). *Professional standards for the accreditation of teacher preparation institutions.* Retrieved from http://www.ncate.org/Public/Publications/ProfessionalStandards/tabid/508/Default.aspx

O'Neil, V., Killian, B., & Hough, A. (2009). The socio-historical context of in-school corporal punishment in Kwa-Zulu Natal setting. *Journal of Psychology in Africa, 19, 123-126.*

Osher, D., Bear, G. G., Sprague, J. R., & Doyle, W. (2010). How can we improve school discipline? *Educational Researcher*, *39*, 48-58.

Paintal, S. (1999). Banning corporal punishment of children. *Childhood Education*, *76*(1),

36-39.

Pérez, V., Rodríguez, J., De la Barra, F., & Fernández, A. M. (2005). Efectividad de una Estrategia Conductual Para el Manejo de la Agresividad en Escolares de Enseñanza Básica (Effectiveness of a Behavioral Strategy of Aggression Management in Elementary School Children). *Psykhe, 14*(2), 55-62.

Pérez, V., Rodríguez, J., Fernández, A. M., & de la Barra, F. (2005). Assessment of the effect of a behavioral intervention on school aggression [Abstract]. *Terapia Psicológica, 23*(1), 91.

Petras, H., Kellam, S. G., Brown, C. H., Muthén, B. O., Ialongo, N. S., & Poduska, J. M. (2008). Developmental epidemiological courses leading to antisocial personality disorder and violent and criminal behavior: Effects by young adulthood of a universal preventive intervention in first- and second-grade classrooms. *Drug and Alcohol Dependence, 95*(1), S45-S59.

Phillips, D., & Christie, F. (1986). Behaviour management in a secondary school classroom: Playing the game. *Maladjustment & Therapeutic Education, 4*(1), 47-53.

Poduska, J. M., Kellam, S. G., Wang, W., Hendricks Brown, C., Ialongo, N. S., & Toyinbo, P. (2008). Impact of the Good Behavior Game, a universal classroom-based behavior intervention on young adult service use for problems with emotions, behavior, or drugs or alcohol. *Drug and Alcohol Dependence, 95*(5), S29-S44.

Ruiz-Olivares, R., Pino, M. J., & Herruzo, J. (2010). Reduction of disruptive behaviors using an intervention based on the good behavior game and the say-do-report correspondence. *Psychology in the Schools, 47*(10), 1046-1058.

Saigh, P. A., & Umar, A. M. (1983). The effects of a good behavior game on the

disruptive behavior of sudanese elementary school students. *Journal of Applied Behavior Analysis, 16*(3), 339-344.

Simonsen, B., Fairbanks, S. Briesch, A., Myers, D. & Sugai, G. (2008). Evidence based practices in classroom management: Considerations for research to practice. *Education and Treatment of Children*, *31*, 351-380.

Smith, S. W., Daunic, A. P., & Taylor, G. G. (2007). Treatment fidelity in applied educational research: Expanding the adoption and application of measures to ensure evidence-based practice. *Education and Treatment of Children, 30,* 121-134.

Tanol, G., Johnson, L., McComas, J., & Cote, E. (2010). Responding to rule violations or rule following: A comparison of two versions of the good behavior game with kindergarten students. *Journal of School Psychology, 48*(5), 337-355.

Taylor, C. A., Manganello, J. A., Lee, S. J., & Rice, J. C. (2010). Mothers' spanking of 3-year-old children and subsequent risk of children's aggressive behavior. *Pediatrics, 125*, 1057-1065.

Tingstrom, D. H., Sterling-Turner, H. E., & Wilczynski, S. M. (2006). The good behavior game: 1969-2002. *Behavior Modification, 30*(2), 225-253.

Turco, T. L., & Elliott, S. N. (1986). Students' acceptability ratings of interventions for classroom misbehaviors: A study of well-behaving and misbehaving youth. *Journal of Psychoeducational Assessment, 4*, 281-289.

Upah, K. R. F. & Tilly W. D. III (2002). Best practices in designing, implementing, and evaluating quality interventions. . In A. Thomas & J. Gromes (Eds.), *Best Practices in School Psychology IV* (483-501). Bethesda, Maryland: National Association of School Psychologists.

U.S. Department of Health and Human Services (2001). *Youth violence: A report of the Surgeon General.* Retrieved from http://www.surgeongeneral.gov/library/youthviolence

Van Lier, P. A. C., van der Sar, R. M., Muthen, B. O., & Crijnen, A. A. M. (2004). Preventing disruptive behavior in elementary schoolchildren: Impact of a universal classroom-based intervention. *Journal of Consulting and Clinical Psychology, 72*, 467-478.

Van Lier, P. A. C., Vuijk, P., & Crijnen, A. A. M. (2005). Understanding mechanisms of change in the development of antisocial behavior: The impact of a universal intervention. *Journal of Abnormal Child Psychology, 33*, 521-535.

Vuijk, P., van Lier, P. A. C., Crijnen, A. A. M., & Huizink, H. C. (2007). Testing sex-specific pathways from peer victimization to anxiety and depression in early adolescents through a randomized intervention trial. *Journal of Affective Disorders*, *100*, 221-226.

Walker, H. M., Colvin, G., & Ramsey, E. (1995). *Antisocial behavior in school: Strategies and best practices.* Pacific Grove, CA: Brooks/Cole.

Walker, H., Ramsey, E., & Gresham, F. M. (2004*). Antisocial behavior in school: Evidence base dpractices* 2nd ed., Belmont: CA, Wadsworth/Thomson Learning.

Walter, H. J., Gouze, K., & Li, K. G. (2006). Teachers' beliefs about mental health needs in inner city elementary schools. *Journal of the American Academy of Child and Adolescent Psychiatry, 45*, 61-68.

Wehby, J. H., Maggin, D. M., Partin, T, C, M., & Robertson, R. (2011). The impact of working alliance, social validity, and teacher burnout on implementation fidelity of

the Good Behavior Game. *School Mental Health, 4*, 22-33.

Wilcox, H. C., Kellam, S. G., Brown, C. H., Poduska, J. M., Ialongo, N. S., Wang, W., et al. (2008). The impact of two universal randomized first- and second-grade classroom interventions on young adult suicide ideation and attempts. *Drug and Alcohol Dependence, 95*(1), S60-S73.

Wilson, J. (2002). Corporal punishment revisited. *Cambridge Journal of Education*, 32, 409-416.

Witt, J. C., & Elliott, B. (1983). Assessing the acceptability of behavioral interventions used in classrooms. *Psychology in the Schools, 20*, 510-517.

Witvliet, M., van Lier, P. A. C., Cuijpers, P., & Koot, H. M. (2009). Testing links between childhood positive peer relations and externalizing outcomes through a randomized controlled intervention study. *Journal of Consulting and Clinical Psychology, 77*(5), 905-915.

Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis, 11*, 203-214.

Wright, R. A., & McCurdy, B. L. (2011). Classwide Positive Behavior Support and group contingencies: Examining a positive variation of the Good Behavior Game. Retrieved from http://pbi.sagepub.com/content/early/2011/09/23/1098300711421008

Appendix A

Administrator Consent

Dear Administrator:

On behalf of myself and the School Psychology Program at Minnesota State University – Mankato, thank you for your consideration and interest in our study. We have received approval from the Institutional Review Board and are seeking to move forward with a study in your district. At this time we are asking for your permission to proceed with a study to benefit students in your school who are currently experiencing difficulties related to behavioral issues.

As outlined in the research proposal, your staff will identify potential participant teachers seeking group behavioral interventions for disruptive classroom behavior. Next, your staff will contact the teachers who they feel would be willing to participate in this program. After teachers have given consent, the research protocol will be followed as outlined in the proposal.

The program will begin with no more than two observers who will visit the identified classrooms daily for one period for approximately two weeks. After this "baseline" period, a group behavioral intervention will be implemented. All teachers and assistants will be trained in implementing this program with fidelity. Behavioral data will continue to be collected and the intervention will be adjusted as necessary to obtain the desired results, that is, to remediate the behavioral problems.

Thank you very much for your consideration in this matter. Please contact us if you have any questions. The professor(s) overseeing this project are Kevin Filter, Ph.D. (kevin.filter@mnsu.edu; 507-389-5828) and Dan Houlihan, Ph.D. (daniel.houlihan@mnsu.edu; 507-389-6308), the student(s) conducting the research are doctoral students in school psychology: Jules Nolan (julene.nolan@mnsu.edu. ; 507-382-5404), Sara Ebsen (sara.ebsen@mnsu.edu ; 605-480-1296) and Angela Christenson (angela.christenson@mnsu.edu; 507-210-8978). The university IRB administrator is Interim Dean, Barry Ries (507-389-2321). If you agree to have us conduct research in your school(s), please sign below and return an original copy to:

MSU IRB Administrator
Minnesota State University-Mankato

115 Alumni Foundation
Mankato, MN 56001

I hereby agree to allow Drs. Filter and Houlihan and Jules Nolan, Sara Ebsen, and Angela Christenson complete their research project in _____ School.

Name (printed) _____ Position _____

Address _____

Signature _____ Date _____

Your signature on this document indicates your consent to our proceeding with this study.

Appendix B

Teacher Consent Form

Dear <Teacher>,

My name is Julene Nolan and I am a Doctoral Candidate in the School Psychology program at Minnesota State University, Mankato, MN USA. I would like to conduct research in your school under the supervision of my advisor from the Department of Psychology, Dr. Kevin Filter. Dr. Dan Houlihan will also serve as a consultant on this study. The purpose of my study is to use a well-established behavior intervention with students in Belizean schools to determine if this intervention is effective across cultures. I will train you in this very simple classroom intervention and provide you with all the information you will need to continue the treatment should you choose to continue it. I would like your help in determining which class periods are the most difficult because of behavior problems.

If you agree to participate, I would like to interview you in order to understand the types of problem behaviors you are seeing, and what time of day they generally occur in class. This interview would take about 20 minutes to complete and the results would be used to help me develop a plan that is intended to help you manage classroom behavior by decreasing the occurrences of disruptive behavior. If at any time during the interview you decide that you would prefer not to answer a question or discontinue the interview completely, you are free to do so and discontinuation will not affect your relationship with your school, school district, or with Minnesota State University, Mankato, MN, USA.

After the interview, I would like train you in the program. This will take about 30 minutes and I will provide opportunities for you to practice it before you use it in your classroom. This game is a simple and effective way for teachers to manage behavior in the classroom without having to invest significant time and resources, without the use of punishment, and without having to remove students from the classroom. This technique has been tested in classrooms in the US and also in countries in Europe, South America,

and Africa. The intervention is outlined as follows:

Suppose a teacher has the most behavior problems in reading class, and suppose that these problems include students leaving their seats, talking out of turn, and throwing things. Together we identify three rules to address this problem and the teacher writes them on the board. For example:

1. Keep your backside on your chair.

2. Keep your tools in your hand or on your desks

3. Raise your hand and wait to be called on before you speak

The teacher then splits the classroom into two teams, making sure that the students who are typically the instigators are evenly split between the two teams. She then tells the students that they will be playing the Good Behavior Game during reading class and explains that the team who has the fewest instances of breaking rules during reading period wins.

The teacher writes the team names on the board, reminds the children that they are playing the game during all of reading class, and tells them when the game starts. When she notices someone breaking the rules she says "Remember to keep your backside on your seat Anna" and puts a hash mark under the team name. This tally is kept during reading class and at the end the teacher announces the winning team. (The one with the fewest hash marks).

The winning team gets an easy to administer but valuable prize like extra time at recess, being first to lunch, stars on a star chart, etc. (Any thing that the teacher knows the class values). It is a good idea for the teacher to make a list of things she thinks that the students will like and have the class number them in order of preference, and then use these things for prizes.

There are many ways to change this game to influence behavior of specific children, at specific times during the day, for whole classrooms, and for several classrooms at one time. The important thing is to make sure that the prizes are things that the children value but are not expensive or hard for the teacher to distribute. This intervention should not increase your student's problem behaviors.

Prior to the intervention another doctoral student and I will be observing your students' behavior in your classroom during the period that you determine is the most disruptive. This is to gather data about how the children behave before the intervention. During the intervention we will also be in your classroom to observe the childrens' behavior to determine if there is a change. Additionally, we would like to spend time in your classroom before we start collecting data so that the children get used to our presence there.

You are free to request that our involvement in the classroom be discontinued at

any time, again with no penalty to you or the participating students.

The only identified risk associated with your involvement in this study is the possibility that your participation could be discovered by other people, including faculty and staff in your school. To minimize this risk, your name will not be recorded on any of the materials in this study. Instead, your identity will be recorded as the "Teacher of classroom 1, 2, or 3." Student participants' names will not be on the data forms, either. Thus, your identity and participation in this study should not be revealed to anybody.

If you have any questions, please feel free to contact me, Julene Nolan, via email at Julene.nolan@mnsu.edu or via mobile phone at (507) 382-5404. You may also contact my advisor Dr. Kevin Filter via email at kevin.filter@mnsu.edu or via phone at (507) 389-5828. If you have any questions about your rights as a participant, please contact Dr. Barry Ries, administrator of the Institutional Review Board at (507) 389-2321.

Enclosed is a copy of this letter for you to keep. If you are willing to participate in our study, please complete the section below on one copy of this letter and return it to me. Your signature indicates that you have read and understand the information above, that you willingly agree to participate, that you may withdraw at any time and discontinue participation without penalty, that you will receive a copy of this form, and that you are not waiving any legal claims, rights, or remedies. If you have any questions or would like us to clarify any point, please ask us to address your concerns before you sign this form. Thank you for your consideration.

Your Name (printed) _____

Your Signature _____ Date _____

Appendix C

Observation Form

Date _____ Classroom # _____

Behavior 1 _____
Behavior 2 _____
Behavior 3 _____

Minute	0-15	16-30	31-45	46-60
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

16				
17				
18				
19				
20				

Appendix D

Fidelity Checklist

Date _____

Classroom _____

Observer_____

_____1. Teacher announced that class would play the GBG and read aloud the class rules at the beginning of targeted period

_____2. Teacher explained the rules of the GBG and announced the prize for that day.

_____3. Teacher wrote the team names on the board

_____4. Teacher gave examples and non-examples of rule breaking behavior

_____5. Teachers issued a reminder and made a hash mark under the appropriate team name when he/she observed a rule violation.

_____6. Teacher administered reinforcers to the winning team

Appendix E

Children's Intervention Rating Profile

	I disagree	I agree
1. The game that was used to deal with behavior problems was fair.	1-----2-----3-----4-----5-----6	
2. The teacher was too harsh on the students.	1-----2-----3-----4-----5-----6	
3. The game used to deal with behavior may cause problems with friends.	1-----2-----3-----4-----5-----6	
4. There are better ways to handle behavior problems in class than the game.	1-----2-----3-----4-----5-----6	
5. This game would be a good one to use with other classrooms.	1-----2-----3-----4-----5-----6	
6. I liked the methods used for behavior problems in class.	1-----2-----3-----4-----5-----6	
7. I think the game would help children do better in school.	1-----2-----3-----4-----5-----6	

*Items 2,3,4 reverse-scored

Adapted from Turco & Elliott (1986)

Appendix F

Intervention Rating Profile

(IRP-15)

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. This would be an acceptable intervention for problem behavior in the classroom	1	2	3	4	5	6
2. Most teachers would find this intervention appropriate for most behavior problems	1	2	3	4	5	6
3. This intervention should prove effective in changing behavior in the classroom	1	2	3	4	5	6
4. I would suggest the use of this intervention to other teachers	1	2	3	4	5	6
5. Behavior problems in the classroom are severe enough to warrant the use of this intervention	1	2	3	4	5	6
6. Most teachers would find this intervention suitable for behavior problems like the ones in my classroom	1	2	3	4	5	6
7. I would be willing to continue to use this intervention in my classroom	1	2	3	4	5	6
8. This intervention would *not* result in negative side-effects for students	1	2	3	4	5	6
9. This intervention would be appropriate for a variety of students	1	2	3	4	5	6
10. This intervention is consistent with those I have used in classroom settings	1	2	3	4	5	6
11. The intervention was a fair way to handle problem behavior	1	2	3	4	5	6
12. This intervention is reasonable for the behavior problems in the classroom	1	2	3	4	5	6
13. I liked the procedures used in this classroom intervention	1	2	3	4	5	6
14. This intervention was a good way to handle student behavior problems	1	2	3	4	5	6
15. Overall, this intervention was beneficial for the students	1	2	3	4	5	6

Adapted from Martens & Witt (1982).

Appendix G

Overview of The Good Behavior Game

Training Manual for Teachers
Fidelity Checklist
© 2012 Julene D. Nolan

This game is a simple and effective way for teachers to manage behavior in the classroom without having to invest significant time and resources, without the use of punishment, and without having to remove students from the classroom.

This technique has been tested in classrooms in the US and also in countries in Europe, South America, and Africa. There is strong evidence that it not only changes behavior immediately and effectively, but that it also has lasting effects on behavior. That is, students who play GBG in 1st, 2nd, and 3rd grade show less externalizing and risky behaviors than matched controls in both adolescence and teenage years. It has been called a "behavioral vaccine" in that it protects children, especially those at high risk, from externalizing, antisocial, and risky behaviors, as well as peer rejection as they mature.

Here is how it is played:

Identify the period of your day in which disruptive behaviors are most problematic (i.e. reading, math, etc) and identify 2 or 3 observable behaviors that you would like to change. For example, this could include talking without raising your hand, leaving your seat, and tattling on others. Make a list of the rules to address these behaviors and post

them on the board. The list might look like this:

1. Raise your hand and wait to be called on before you speak

2. Keep your backside on your chair

3. No telling on other students when they break the rules

Divide the classroom into 2 teams, making sure that those kids who are likely to break the rules are evenly divided between the 2 teams. It is helpful if the teams can sit together so it is easier for you to know which team broke the rules. Write the team names on the board and make sure that each student understands to which team they belong.

Tell the students that they will be playing the Good Behavior Game during class and let them know how long it will last. It is best to use short periods (10-20 minutes) in the beginning. Tell the students they will be playing for a prize and that one or both teams can win if they follow the rules. Give examples and non-examples of breaking the rules and model the behavior. This is often fun and helps kids to understand the rules. Often students (especially younger) will have LOTS of questions about what constitutes breaking a rule. Make sure to answer all of those questions thoroughly.

Tell the students that if you (teacher) see them break a rule they will be reminded of the rule (i.e. Anna, please remember to sit with your backside on your chair) and then you will make a hash mark under the team name. The team that earns the fewest hash marks (below a set criteria) at the end of the period wins.

Set criteria so that both teams can win – that is, if both teams meet the criteria, they both get access to the prize. A good place to start is 10 or fewer for Beginners and Infant I and 5 or fewer for the older grades, but you can adjust this according to your need. It is important that the teams are able to meet the criteria quickly (within the first few days) so setting higher criteria is advised. You can always adjust it as the game goes on.

The team with the fewest hash marks below the criteria wins. That is, if the criteria is 5 or fewer hash marks and both teams have 4 or fewer at the end of the period, they both win. If one team has 5 and the other has 6, the team with 5 wins. If both teams have more than 5, nobody wins – but we can try again tomorrow.

During the game, conduct classroom activities as you normally would, but notice when a student breaks a rule, remind them of the rule, and put a hash mark under the appropriate team name. It is important to remind students of the rule without being too harsh. This promotes the "game" feeling of this behavioral intervention. Tell the students when the game is over (generally at the end of the instruction period) and announce the winning team(s).

It will likely take a couple of days in which one team or no teams win before students understand how the game is played (especially for younger children). This can cause some tears at first, but reassure the students that they can try again tomorrow. It also helps to split up the teams daily so that individual children are not harassed for being the one to lose for the team.

The winning team(s) gets an easy to administer but valuable prize at the end of the game. Prizes include things like extra time at recess, being first to lunch, stars on a star chart, pencils, stickers, candies, note home, etc. (anything that the teacher knows the class values).

Make sure it is implemented with fidelity. That is, the more often the teacher actually notices the behavior and makes the hash marks, the more quickly behavior improves.

Fidelity Checklist for Teachers

____1. Announce that class will play the GBG for ____ amount of time or during class

____2. Post /Read aloud the class rules at the beginning of targeted period

____3. Explain the rules of the GBG including how the teams can win/lose

____4. Announce the prize for that day.

____5. Divide the class into 2 teams, keeping them well balanced in terms of kids who are more likely to break the rules.

____6. Write the team names on the board so that students know which team they are on

____7. Give examples and non-examples of rule breaking behavior

____8. Issue a reminder in a neutral tone when you notice a rule being broken

____9. Make a hash mark under the appropriate team name when you observe a rule violation.

____10. Give prizes to the winning team.

Critical Elements

There are a few critical elements of the GBG that need to be included to ensure good results. They include:

- **Teams** – at least 2, but no more than 3 as it is too difficult to manage.
- **Criteria** – students need a criteria or goal to shoot for. It should be few behaviors, but reasonably achievable. You can start with a higher criteria (10) and reduce it as they learn the game and become more able to monitor their behavior.
- **Rules** – at least 2 but no more than 5 classroom rules that are explicit and observable. This is meant to be a game to address **disruptive** classroom behavior. Although there is evidence that it can increase academic behavior, (attending, responding). Also, rules must be explained and examples as well as non-examples of rule breaking must be demonstrated.
- **Award Prizes** – when one or both teams win, they must be awarded prizes. It is acceptable to begin with daily prizes and then move to weekly prizes after the students have gotten used to the game. It is best to make sure that the prizes are truly valued by the students (not just what you think they will value). You can do this by asking for student suggestions for prizes and having students rank-order items on a list of prizes as most and least valued. Strive to use free or cost effective prizes.
- **Address Infractions** – It is not necessary that you notice every single rule infraction, but the more often you do, the more quickly the behavior changes for the better. Make sure you do this in a neutral tone. You are not chastising them for breaking the rules, but rather "reminding" them how to win the game.

Trouble-shooting and FAQ

1. **Charlie is always breaking the rules for his team – it seems he is doing this on purpose.** Sometimes the lure of sabotaging the game is too great a temptation for one kid to resist. In this case, remove him from the game without telling the other students. Talk to him individually and tell him that you notice he has a harder time following the rules than other kids. Conduct an FBA to understand the function of his behavior and provide an individualized intervention that addresses the function.

2. **The game started out great, but is losing effectiveness.** It is not the game that is losing effectiveness, but rather the prizes. Make sure to change up the prizes as often as necessary to keep students interested in working to achieve them. Get student feedback on what they would like to work toward.

3. **Prizes are too expensive.** Use prizes that are free or low-cost like special recognition with a note home, extra credit points, extra time doing a preferred activity, preferred seating, first to lunch or recess, front of the line, classroom helpers, sitting with the principal at lunch, stars on a star chart, school-wide announcements of winning teams, names on the board as Behavior Superstars, donated items from parents or local merchants/benefactors. Brainstorm with other teachers/parents about what could be used for prizes.

4. **Anna is always losing the game for her team and the other students are getting angry with her.** This is a real concern and should not be overlooked. Because of the nature of the game, students can be subjected to bullying or harassment from other students. It is important to watch for this and react quickly. Be proactive by addressing the issues of bullying and harassment in the school overall. If you see that one child is

being harassed, remove that child from the game and give the child individual goals to meet to receive reinforcement. Be sure to address harassment or bullying immediately and ensure the safety of all students. It also helps to change the configuration of teams often.

5. **I would rather notice the kids being good than misbehaving.** This is an excellent alternative way to play the game. In this case, set a few rules for good behavior and notice when the students are following the rules. Then set a criteria (in this case a high goal) for the number of times you want to see those behaviors occurring in your classroom. Then split the class into two teams and notice things like attending, raising hands, waiting quietly, and give points to the team for demonstrating those behaviors. In this case, the team with the most points WIN.

6. **How long can one "game" last?** It is best to start with a short time period (10-20 minutes) until the class gets used to playing and monitoring their behavior. You can gradually increase the time period to include an entire school day. It is best if students can be rewarded each day for winning. But remember, they don't have to win expensive prizes. They can win points toward some bigger prize like a pizza party or movie night at the end of a few weeks.

More questions? Please contact me at

Julene Nolan, MS
School Psychologist Doctoral Candidate
Minnesota State University – Mankato, MN USA
Julene.nolan@mnsu.edu
jules@julesnolan.com
001 507 382 5404