Contexts that enhance victimization prevention: The effect of social responsibility on the WITS® program

by

Paweena Sukhawathanakul
B.Sc., University of Victoria, 2008

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of

MASTER OF SCIENCE

in the Department of Psychology

Supervisory Committee

Contexts that enhance victimization prevention: The effect of social responsibility on the WITS® program

by

Paweena Sukhawathanakul
B.Sc., University of Victoria, 2008

Supervisory Committee

Dr. Bonnie J. Leadbeater, (Department of Psychology)
Supervisor

Dr. Andrea Piccinin, (Department of Psychology)
Departmental Member

Abstract

Supervisory Committee
Dr. Bonnie J. Leadbeater, (Department of Psychology)
Supervisor
Dr. Andrea Piccinin, (Department of Psychology)
Departmental Member

Peer victimization, the experience of being socially excluded, emotionally mistreated or physically abused by peers, is a serious social issue in schools. Past research suggests that whole school, multi-component programs which aim to change school contexts are most effective in reducing victimization. However, the underlying mechanisms that are responsible for program effectiveness are not well understood. The current study examined how protective contexts influence young children's reports of victimization in early elementary school. Participation in the WITS® peer victimization prevention program, as well as classroom and individual levels of social responsibility, were tested as protective factors associated with declines in victimization over time. In a sample of 830 children, trajectories of physical and relational victimization were examined across Grades 1 to 3 with the use of latent multiple-indicator growth modeling. Children in the WITS® program (n = 422) showed more rapid declines in peer victimization over time compared to children in control schools (n = 418). Classroom levels of social responsibility were associated with declines in relational victimization for program children. Individual levels of social responsibility were associated with declines in physical victimization for program children. Implications for changing classroom norms through promoting social responsibility in the context of intervention and prevention are discussed.

Table of Contents

List of Tables

List of Figures

Acknowledgments

I would like to acknowledge the contributions and support of a number of individuals and institutions that have aided in the completion of this thesis. Dr. Richard B. May, the Sara Spencer Foundation and the University of Victoria have provided funding during the pursuit of this degree. My supervisory committee, Dr. Bonnie J. Leadbeater and Dr. Andrea Piccinin, have provided the training, support, and resources that have enabled me to complete this thesis.

Introduction

Peer victimization in schools is a serious social issue. According to the World Health Organization (WHO) Health Behaviours in School-aged Children (HBSC) survey, Canada ranks 27th and 28th out of 35 countries on measures of peer victimization (Craig & Harel, 2004). In the same survey, 17% of boys and 18% of girls reported being victimized at least twice during the previous school week (Craig & Pepler, 2003). Prevalence rates for elementary children are similar in other countries including the United States (Pellegrini & Long, 2002) and Finland (Kumpulainen et al., 1998), but can be as high as 50% in some Irish samples (O'Moore & Kirkham, 2001).

Children who are victimized are targets of peer acts of overt physical aggression, verbal assaults, or social exclusions (Kochenderfer & Ladd, 1996; Leadbeater & Hoglund, 2009; Sharp & Smith, 1994). Physical victimization includes hitting or other physical harms, as well as verbal harassment (e.g., threatening or teasing). Relational victimization consists of purposeful acts such as isolating individuals from social circles or spreading rumors (e.g., gossiping or acts of 'cyber-bullying' through the internet). Long term consequences of peer victimization include a range of psychosocial and behavioural adjustment problems such as lowered self-esteem, depressive symptoms, and aggression (Hawker & Boulton, 2000; Olweus, 1993; O'Moore & Kirkham, 2001).

Several victimization prevention programs have been widely implemented in schools in an effort to prevent these negative consequences of victimization. Whole school programs that aim to change the context of the school appear most effective in reducing victimization among older elementary school children (e.g., Leadbeater, Hoglund, & Woods, 2003; Leadbeater & Sukhawathanakul, in press; Olweus, 1993; Salmivalli, Kaukianen, & Voeten, 2005; Sharp &

Smith, 1994). These programs often approach the reduction of victimization from a systems level targeting risks at the individual, peers, school, family, and the community. Less research has addressed the protective factors that buffer peer victimization trajectories and enhance caring relationships in early childhood. Evaluations of how prevention programs interact with protective factors to influence victimization trajectories are also limited (Nation et al., 2003). However, previous studies have suggested that victimization can be influenced by school and classroom contexts (e.g., Kellam et al., 1998; Aber at al., 1998).

This study examines how protective contexts (i.e., prevention program participation in schools and classroom levels of social responsibility) influence young children's reports of victimization in early elementary school. In this study, we assessed the extent to which protective contexts including participation in a victimization prevention program and individual as well as classroom levels of social responsibility can influence victimization trajectories.

Effectiveness of School-wide Prevention Programs

Reviews of past research suggest that universal prevention programs that focus on general populations and incorporate a research-based framework can be effective in preventing mental illness and enhancing development in child and youth (Weissberg, Kumpfer, & Seligman, 2003; Nation et al., 2003). Such programs engage multiple systems and policies that effect children's development through the influence of families, schools, and communities. When these comprehensive 'whole-school' programs are coordinated with efforts to enhance children's competence, connections to others, involvement with their families and contributions to their community; they can augment context-based protective factors that both reduce problem behaviors and mitigate risks (Cicchetti, Toth, & Maughan, 2000). Hence, reviews of preventive programs for children (e.g., Weissberg, Kumpfer, & Seligman, 2003; Greenberg at al., 2003,

Baldry & Farrington, 2007; Smith, Scheider, Smith, & Ananiadou, 2004) advocate for the involvement of families, peers, schools, and communities in the implementation of programs. A common recommendation from these reviews is for better understanding of the impact of these constituents in the child's ecosystem on bullying and victimization. Nevertheless evaluations of mediating and moderating variables that potentially influence program effects are limited (Nation et al., 2003). By acquiring a better understanding of these influences, researchers can then gain insight into factors that influence implementation and maximize program impacts.

Some previous evaluations of whole-school programs show substantial reductions in bullying (e.g., Minton & O'Moore, 2005; Olweus, 1994; Salmivalli et al., 2005). However, others demonstrate relatively small to negligible effect sizes (e.g., Frey et al., 2005; Roland, 2000; see reviews by Merrell et al., 2008; and Smith et al., 2004). The variability in the efficacy of these prevention programs point to the need to evaluate factors that differentiate program outcomes more systematically.

In particular, research is needed to illuminate program components that are key to making the approach effective (Smith et al., 2004). Past research suggests that successful interventions depend in particular on the level of teacher and school-wide implementation of programs. Classrooms characterized by very high levels of initial teacher implementation of program components are associated with the most reductions in bullying problems (Aber et al., 1998; Salmivalli, Kaukianen, & Voeten, 2005; Olweus, 1991). The effectiveness of changing policies about bullying in schools depend on the overall diffusion and comprehensiveness of specific policy; such that lower comprehensiveness is associated with greater prevalence of peer victimization (Ordonez, 2007). Reviews also recommend monitoring and evaluating the

program's influence on teachers, classrooms, administrators, and parents, and the influence of these systems in reducing victimization in children (Smith et al., 2004).

Improving Contexts through Classroom Norms and Behavioural Expectations

Classroom characteristics can strengthen the positive effects of prevention programs. Kellam et al. (1998) found that peers' levels of aggression in first grade influences aggressive behaviours in later grades. Specifically, results from the longitudinal follow-up of the effects of the *Good Behavior Game* (GBG) intervention showed that highly aggressive children who were in classrooms with higher levels of aggression were at increased risk for being highly aggressive in sixth grade compared to highly aggressive children in classrooms with lower levels of overall aggression. The GBG intervention, applied precise classroom management methods to reduce the impact of aggressive classrooms on the developmental course of aggressive behaviours. The GBG was most effective in higher aggressive classrooms suggesting that the intervention reduced individual aggressive behaviours by reducing classroom aggression (Kellam et al., 1998; Kellam et al., 1994). Interventions directed at classroom socialization of behaviour rather than only targeting the individual child, such as the GBG, may be needed to reduce peer victimization.

Research also shows that classrooms that endorse maladaptive norms may place children at greater risk for victimization and these norms can interact with intervention effects. Aber et al. (1998) found that elementary and early middle school children in classrooms where the norm for the use of aggression was seen as "acceptable" reported higher average levels of aggressive strategies and fantasies. Normative beliefs were measured on a scale that ranged from low normative beliefs where the use of aggression was "perfectly ok" to high normative beliefs where the use of aggression was "really wrong" (Aber et al., 1998, p. 196). The positive effect of

a violence prevention program (the *Resolving Conflicts Creatively Program*) was also influenced by classroom contexts. Similar to Kellam and colleagues (1998), classrooms with greater normative beliefs that aggression was unacceptable (i.e., use of aggression is "really wrong") were more influenced by the positive effects of the intervention. However, these effects were only observed in classrooms with high program implementation by teachers (i.e., high lessons classrooms). Children in classrooms with normative beliefs that aggression was acceptable showed significant increases in aggressive strategies and fantasies, despite being in the high implementation classrooms. Moreover, aggression for children in classes with the other two intervention profiles (low lesson implementation classrooms and no lessons) increased significantly. Consistent with Kellam and colleagues (1998), these results show that intervention effects are dampened for children in the more 'high-risk' classrooms. These findings emphasize the importance of addressing the normative belief in classrooms. Interventions that target changing the overall context of the classrooms and schools (i.e., norms) rather than focusing only on enhancing individual skills (e.g., prosocial behaviors, social competence) may have a greater impact on preventing victimization.

There is also evidence that negative normative beliefs can influence bullying and peer victimization in preadolescent and adolescent samples. Marini, Dane, Bosacki, & Ylc-Cura (2006) found that normative beliefs legitimizing antisocial behaviours are associated with more frequent bullying in adolescence. Troop-Gordon and Ladd (2005) also found that as children enter preadolescence, their perceptions of their peers become more negative (i.e., more likely to perceive peers as being less prosocial). More negative peer perceptions predicted greater internalizing and externalizing problems over time (from grades 4 to 6), particularly for boys. Internalizing and externalizing problems were also significantly predicted by increases in peer

victimization. Troop-Gordon and Ladd (2005) argue that victimized children may come to interpret their peers' actions as more indicative of the general social disposition of their peers and of their own self-worth, thereby contributing to greater psychosocial maladjustment problems later in adolescence. Disruptive peer relationships in early childhood can also influence social perceptions negatively (e.g., viewing their social environments as more threatening) and in turn increase children's vulnerability to mental health problems. On the other hand, helping children develop healthy, *positive* behavioural norms and acting accordance with such norms within the classroom may discourage peer victimization by establishing values that are incompatible with these behaviours.

Several programs that promote social emotional learning show promise in reducing violence and increasing prosocial behaviours in the classroom (e.g., the '*Roots to Empathy*' program, Berkowitz & Bier, 2005; Schonert-Reichl, Smith, Zaidman-Zait, & Hertzman, under review; the '*Promoting Alternative Thinking Strategies Curriculum*' program, Greenberg, Kusche, Cook & Quamma, 1995; the 'M*aking Choices: Social Problem Solving Skills for Children'* program, Fraser et al., 2005). However to date, no study has examined the effects of programs on changing child and classroom norms or behavioural expectations about positive behaviours on children's trajectories of victimization. The extant literature focuses on individual social emotional characteristics that protect against individual's risk of victimization (Hawker & Boulton, 2000).

The protective nature of *collective* normative beliefs on victimization and behavioural expectations has only rarely been addressed (e.g., Aber et al., 1998). For example, prosocial behaviour and social competence are individual positive social skills that appear to reduce victimization (e.g., Crick & Grotpeter, 1996; Hoglund & Leadbeater, 2004). In this study, we

assessed the effect of classroom and individual levels of social responsibility on peer victimization trajectories. Social responsibility reflects behavioural expectations that may coincide with norms of tolerance and fairness, which could exert a protective influence on victimization trajectories. Specifically, we assessed levels of individual and classroom social responsibility that are endorsed by children and how these influence their victimization trajectories.

Social Responsibility

Social responsibility is defined as a normative belief or behavioural expectation of tolerance and fairness and an overall concern for the welfare of others (Wentzel, 1991). It is also defined as an adherence to social rules and role expectation (Ford, Wentzel, Wood, Stevens, Siesfeld, 1989). In social psychology, the norm of social responsibility requires us to help people who are in need regardless of what they may have done for us in the past or what they might do for us in the future (Berkowitz & Daniels, 1963).

Consistent with these theoretical perspectives, measures were developed by researchers of the WITS® program to assess social responsibility in young children (Leadbeater & Sukhawathanakul, in press). Curriculum objectives outlined in the British Columbia Ministry of Education Performance Standards: Social Responsibility Framework (2001) also guided the development of the assessment tool. This framework was introduced to guide teachings of socially responsible behaviour in the classroom and on the playground. A five-item social responsibility scale was used to reflect main themes of the Framework. To date, no other study has examined social responsibility and peer victimization in very young children, although the development of adolescent social responsibility has been studied in the context of family values

(Syvertsen, Wray-Lake, & Flanagan, 2010), religiosity (Gunnoe, Hetherington, & Reiss, 1999), and civic engagement (Cemalcilar, 2009).

Individual characteristics that contribute to social responsibility include pro-social behaviour and social competence (Ford et al., 1989). Prosocial behaviour is characterized by helping, sharing, caring behaviours (Crick & Grotpeter, 1996) and social competence (e.g., "gets along well with other children," "is aware of others' feelings," "is a leader in groups") typically refers to the social, emotional, and behaviours that children need for successful social development (Caldwell & Pianta, 1991). Prosocial behaviours and social competence are negatively correlated with physical and relational victimization (Crick & Grotpeter, 1996; Desjardins, et al., in press). However, social competence differs from social responsibility in that a socially competent child has the capability to understand and relate to others, but has no basis for doing so in a socially responsible manner (i.e., treating others in an inclusive or respectful way). Social responsibility reflects both an ability to relate with others and a collective code of conduct that supports tolerance and fairness for others

Nevertheless, prevention programs that aim to promote prosocial behaviour for children experiencing significant peer problems of rejection and bullying show promise in reducing victimization outcomes (Card, Isaacs, & Hodges, 2008). Such interventions may allow for more harmonious relationships by encouraging cooperation, empathy, appropriate anger management, and conflict resolution skills that in turn mitigate aggressive acts (e.g., the '*Good Behavior Game*,' Kellam et al., 1998; the '*Social Skills program*,' DeRosier, 2007; '*Child Development Project*,' Solomon et al., 1996). Positive peer interactions can also have implications for changing classroom's ecosystem to promote peer inclusion than can protect against risks associated with victimization (Doll, Song, Siemers, 2004; Hodges, Malone, & Perry, 1997).

Similarly, low levels of social competence have also been shown to predict higher levels of victimization in older elementary and middle school children (e.g., Haynie at al., 2001; Egan & Perry, 1998; Hodges, Malone, & Perry, 1997). In young elementary school children (first and third graders), Schwartz, Dodge and Coie (1993) found that the social behaviour of victims were often socially incompetent, making them vulnerable targets. These results suggest that social competence is a necessary skill that may help children interact more positively with their peers which could mitigate risks associated with victimization, but may not alone be sufficient to stop peer victimization where social norms are inconsistent with these positive behaviours (Velásquez, Santo, Saldarriaga, López, & Bukowski, 2010).

Classroom levels of social competence have also been studied as a moderator of program effects. For example, examining the effect of the WITS® program in children from grade 1 to 3 in a different sample, Leadbeater et al., (2003) found that individual levels of behavioural and emotional problems interacted with varying levels of classroom social competence to predict different levels of victimization reported by the child. Surprisingly, children who initially had higher levels of emotional problems reported more relational and physical victimization in classrooms that were characterized by higher levels of social competence. It appears that social competence and prosocial behaviours in the absence of positive classroom norms are not necessarily protective. Social responsibility represents a more collective effort to act in prosocial ways and fosters an overall positive classroom behavioural expectation of tolerance and fairness. When children are given opportunities to practice tolerance in the classroom, their emerging social skills may generalize to areas outside of the classroom (Doll, Song, Siemers, 2004). It is also possible that in the absence of positive social norms and behavioural expectations, social competence can be used aggressively. Research has shown that young children who have higher

social competence may be adept at manipulating social situations or more adaptive in using their prosocial skills along with coercive strategies in order to gain favourable outcomes for themselves at the expense of others (Hawley, 2002; Hoglund & Leadbeater, 2004). Social responsibility norms support beliefs that everyone in the classroom must show tolerance, fairness and support for the wellbeing of others. Therefore classrooms characterized by children who show higher levels of social responsibility (e.g., looking for chances to help others, being friendly to others) may serve as a protective factor in preventing victimization among children. The current study examined the impact of individual levels of social responsibility and exposure to classroom norms of social responsibility on young children's victimization trajectories.

The Current Study

In summary, whole school victimization prevention programs that aim to change schools and classrooms have been effective in reducing victimization among young children (e.g., Olweus, 1993; Salmivalli, Kaukianen, & Voeten, 2005; Sharp & Smith, 1994). The objective of the current study was to assess contextual factors that enhance program effects associated with longitudinal declines in peer victimization. The research enhances past work by considering the influence of individual levels of social responsibility and classroom levels of social responsibility on victimization trajectories.

There are two specific aims for this study. The first aim was to build on previous evaluations of the WITS® program by examining trajectories of victimization using a multiple-indicator latent growth model. Previous effectiveness evaluations of the WITS® program revealed decreases in rates of victimization over time (e.g., Leadbeater, Hoglund, & Woods, 2003; Giesbrecht, Leadbeater, & MacDonald, in press; Leadbeater & Sukhawathanakul, in press). It was hypothesized that participation in the WITS® peer victimization prevention

program would be associated with faster declines in physical and relational victimization. The second aim of this study was to test the extent to which variability in victimization trajectories were associated with differences in individual levels of social responsibility and classroom levels of social responsibility in both intervention and control schools, controlling for prosocial behaviors. Given that the WITS® program aims to reduce peer victimization and enhance social responsibility, it was hypothesized that individual levels of social responsibility and classroom levels of social responsibility would show a stronger inverse relationship with physical and relational victimization over time for children in intervention and control schools.

Methods

Participants

Participants included 830 children in grades 1 to 3 from 67 classrooms in 11 schools in Western Canada. Baseline data were collected in the Fall of 2006 (T1) from six Program schools (N = 472) implementing the WITS® Program and five Control schools (N = 358) matched for size and socioeconomic status. Follow-up data were collected from 737 children (89%; 422 in program schools) in the fall of 2007 and from 732 children (88%; 418 in program schools) in the spring of 2008. The children ranged in age from 5 to 10 years (M = 6.9, SD = .86) at baseline. Children lost to follow up by wave 3 did not differ from those remaining in the study on initial levels of victimization or demographic variables (gender, family income and parental education).

Demographic information (i.e., parent's marital status, level of education, household income, children's living situation, and number of schools attended since kindergarten) were gathered from parents at baseline. Reports indicated that 76% of children lived in a two-parent household. Forty-eight percent of mothers and 44% of fathers completed "some college or technical training" beyond high school, and 21% of mothers and 15% of fathers had earned a

bachelor's degree. Thirteen percent of children lived in a household with a total annual income of less than $30,000, and 28% of children lived in a household with a total annual income of $91,000 or more. Ninety-four percent of the children had attended a maximum of two schools in their lifetime, and 6% had attended three or more schools.

To focus our analyses on changes in victimization, a subsample of respondents who reported no victimization at any of the three time points were dropped from the sample. The final sample size for children who reported physical victimization at least once over the three time points was 737 (432 in program). The final sample size for relational victimization was 728 (423 in program). No demographic differences (age, gender, maternal education) were found comparing the subsample to the total sample.

Procedure

Teachers sent home parent consent forms to grades 1 to 3 children. Parents who provided written permission for their child to participate completed the demographic questionnaire and returned it to the school in a sealed envelope for pick-up by a research assistant. Data were collected from participating children in their classrooms. Teachers or a research assistant read items pertaining to children's experiences with physical and relational victimization aloud to their classes and children completed their ratings individually and privately. Teachers completed social responsibility ratings for each participating student in their classes.

Implementation fidelity

Implementation in program schools was assessed using teachers' ratings of their training, perceptions of school involvement with the program, and frequency of WITS® usage in their own classroom. Eighty percent of teachers responded to the teacher training question at baseline. Of these 35% of teachers reported receiving WITS® training through program workshops, and

39% reported previous experience having worked in a WITS® school. Program manuals with lesson plans and all resource pamphlets were provided to every teacher, each year of the program.

To assess school levels of program implementation, teachers were asked to report how the program was made visible to children and parents in the school and class. Of the 60% of teachers who responded: 65% reported that the program was made visible to the school through the police deputizing ceremony, 65% through school wide assemblies, 69% by using the WITS® language, and 32% by displaying classroom posters in halls and classrooms. Teachers also rated how often (i.e., 'never,' '1-2 times,' '3-4 times,' or '5+ times') they used the WITS® program curriculum or activities in their classrooms. Teachers reported that they recognized a student for using her/his WITS®, five or more times (33%), read a book from the WITS® booklist 3-4 times (24%), displayed WITS® projects 1-2 times (26%), received a visit from a community police officer 1-2 times (56%), and received a visit from a student athlete 1-2 times (4%) in the past 3 months.

Measures

Peer Victimization was measured using an adaptation of the Social Experience Questionnaire (SEQ) (Crick & Grotpeter, 1996). Children rated how often they experienced *relational victimization* (e.g., "How often does another kid tell lies about you to make others not like you anymore?"), and *physical victimization* (e.g., "How often do you get pushed or shoved by another kid at school?"). Five items for each subscale were rated on a three-point scale depicted pictorially to help younger children understand the scaling (□ = never, ☐ = sometimes, ☐ = almost all the time). Victimization scores were positively skewed (ratios ranged from 8.34 to 24.00) and were transformed by taking the natural logarithm. Analyses using

the transformed variables yielded results similar to analyses with untransformed data. For ease of interpretation, analyses involving these measures were conducted with the untransformed data. The reliability was adequate for relational and physical victimization at each time point and the factor structure for the victimization subscales was invariant across program and control groups, boys and girls, grade, and time of assessment (Desjardins et al., in press). Children's self-reports of victimization were also correlated with parents' reports of physical and verbal victimization at all time points (*r*s ranged from .17 to .29, $p < .01$).

Prosocial behaviors were measured by children's reports of how often they received prosocial acts from their peers. This measure is a subscale of the SEQ which included five items (e.g., "How often do you get cheered up by another kid when you're sad or upset?") that children rated on the same 3-point scale (Crick & Grotpeter, 1996). Scores for items were summed at each time point to obtain a composite score of prosocial behaviors for each time point.

Children's social responsibility was measured using five items that were created based on the British Columbia Ministry of Education's *Performance Standards: Social Responsibility Framework* (BC Ministry of Education, 2001). Teachers rated children's social responsibility levels. The items were: "looks for chances to help and include others," "helps to solve peer conflicts," "is friendly, caring, and helpful to others," "knows when to seek help from an adult," and "accurately identifies and describes own and others' behaviors." Teachers rated children's social responsibility on a 4-point Likert scale (0 = 'not yet within expectations', 1 = 'meets expectations', 2 = 'fully meets expectations', and 3 = 'exceeds expectations'). Social responsibility slopes were estimated for each individual, resulting in a predicted score for every

individual[1]. That is, each individual's estimated social responsibility trajectories. These predicted intercepts and slopes were then used as covariates in the subsequent analyses.

Classroom levels of social responsibility were computed for each child by summing social responsibility scores of other children in the classroom (i.e., excluding scores for that child) and dividing by $n - 1$. This created a within-child level variable that reflected each child's exposure to classroom norms of social responsibility at each time point. A similar procedure for computing individual levels of exposure to classroom environments can be found in Hoglund and Leadbeater (2004). Correlations between children's individual social responsibility scores and their classroom levels of social responsibility at each time point were small but significant (*r*s ranged from .19 to .30, *p*s < .05) but were not predictive over time from one classroom setting to the next (i.e., children's social responsibility score at time 1 did not correlate with their classroom levels of social responsibility at time 2 and 3). Only classroom levels of social responsibility at time 1 was used to predict initial levels and changes in victimization.

Measurement Models and Factor Invariance

Confirmatory factor analysis (CFA) was used to examine the underlying factor structure of the victimization and social responsibility constructs. Previous research has confirmed that children in this sample were able to distinguish between physical and relational victimization (Desjardins et al., in press). Here, CFA research was used to assess the underlying factor structure of social responsibility and its distinctiveness from the victimization constructs. Invariance testing was used to assess whether the factor structure of the measures for victimization and social responsibility fit equally well across groups of program and control school children at each time period (Byrne, 2001).

[1] Predicted intercepts and slopes of social responsibility were computed using HLM software (Raudenbush & Bryk, 2002).

Following established guidelines (Bollen, 1989; Byrne, 2001; Cohen, 1994; Hu & Bentler, 1995; Kline, 2005; Schreiber, Stage, King, Nora, & Barlow, 2006; Thompson, 2000), the fit of our hypothesized model to the data was evaluated using the following fit indexes: χ^2**,** χ^2/df**,** Comparative-Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA). The χ^2 statistic provides an overall estimate of model fit; non-significant ($p < .05$) χ^2 values indicate good model fit. However, because results are dependent on sample size, χ^2 tends to be significant for large samples even if a model provides a reasonable approximation to the data. Remaining fit indices take this consideration into account. The χ^2/df index evaluates how much model fit is reduced by eliminating ≥ 1 parameter estimates; ratios of ≤ 3 are desirable. The CFI compares the obtained model fit to the fit of an independence model that assumes independence (i.e., covariances constrained = 0) among the variables in the model (Byrne, 2001). CFI values ≥ .95 generally indicate excellent model fit, while values between .90 to .94 are acceptable. Lastly, the RMSEA provides a fit index that is sensitive to model complexity; values ≤ .05 suggest good model fit, and values between .05 and .08 indicate reasonable fit.

The covariance matrices for victimization and social responsibility were analyzed with AMOS 17.0 Software (Arbuckle, 2008) and maximum likelihood procedures were used to estimate parameters. Missing values were estimated using full information maximum likelihood estimation (Kline, 2005). Factor and unique error loadings were all significant (*ps* <.05) at T1, T2, and T3, and the factor correlations were all significant at all time points (see Figure 1). Results indicated an acceptable fit (RMSEAs<.06, CFI values of .95 or higher) for a three-factor model for physical and relational victimization and social responsibility at T1 and T2. Fit indices for T3 were reasonable (RMSEA = .07, CFI = .93) according to the conventions outlined by Brown and Cudeck (1993).

In the invariance testing, conducted to assess the factorial invariance of the latent constructs across program and control groups at each time point, all path loadings were significant and model fit indices were adequate for the unconstrained models at all time points. A

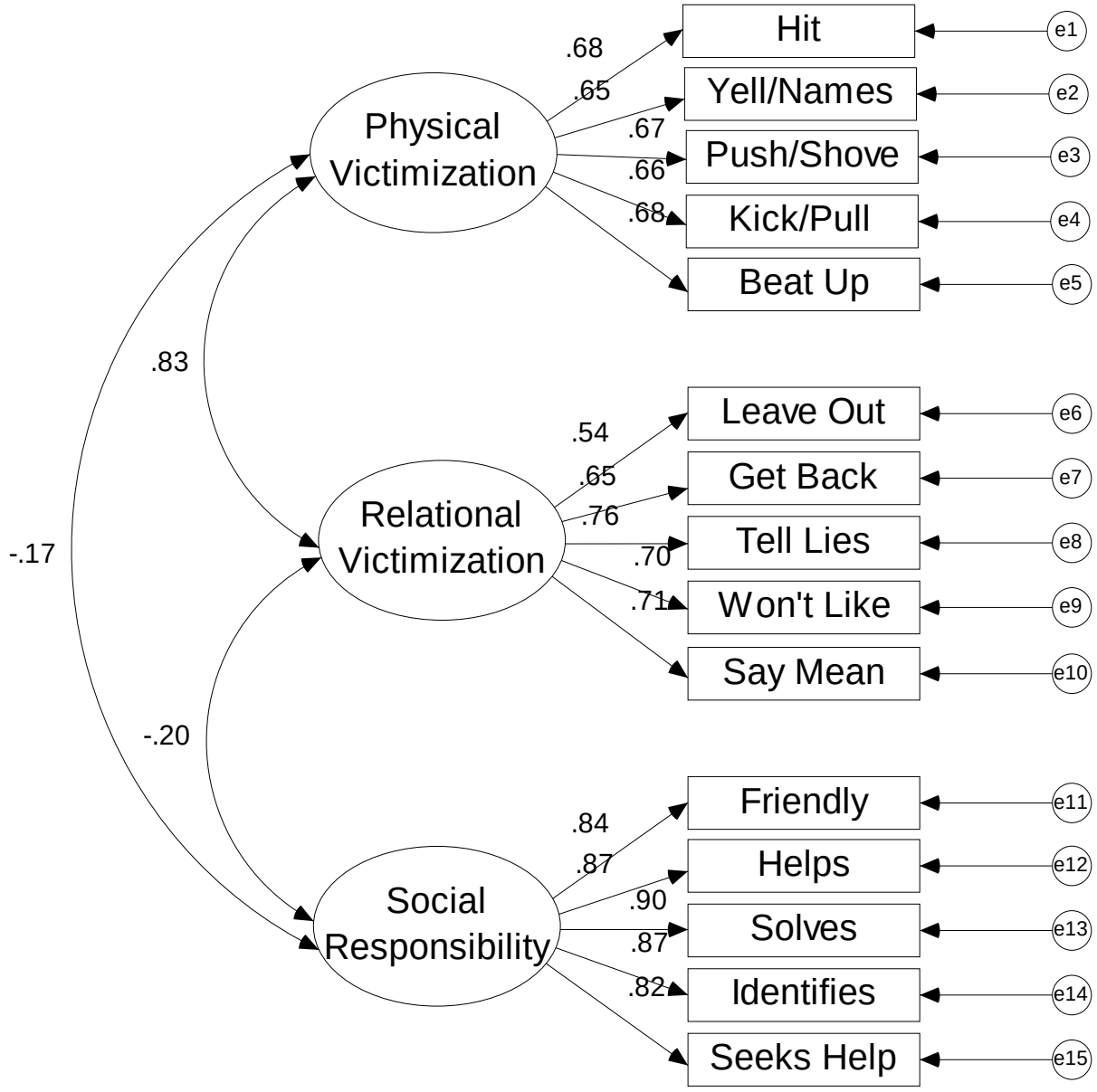

Figure 1. Three-factor model for confirmatory factor analysis of the 5-items for physical victimization, relational victimization, and social responsibility, respectively at Time 1. Standardized parameters are shown.

fully constrained model was tested in which all of the factor loadings, variances, and covariances were specified to be equivalent for program and control groups. All path loadings were significant and findings were consistent with the unconstrained model for T1, T2, and T3. The difference in chi square values between the models at T1 and T2 was not significant ($\Delta\chi^2 = 9.7$, $df = 18$, $p > .05$; $\Delta\chi^2 = 28.1$, $df = 18$, $p > .05$, respectively) indicating that the factor loadings, variances, and covariances for the model were invariant, or equal, across groups. For T3, the factor structure was equivalent ($\Delta\chi^2 = 20.2$, $df = 18$, $p > .05$), when the path for the item, 'Say Mean Things,' was unconstrained. In sum, with the exception of the one item in T3, fit of the three measurement models with the factor loadings constrained to be equivalent did not vary significantly from the unconstrained model indicating factorial invariance in the loadings across program and control school. In other words, victimization and social responsibility constructs were distinct at each time point.

O*verview of Analysis Strategy*

The longitudinal design and establishment of measurement invariance within the measures of victimization permits the use of a latent multiple-indicator multilevel (MIML) growth model to examine change in victimization over time (Desjardins et al., in press; Widaman, Ferrer, & Conger, 2010; Wu, Liu, Gadermann, & Zumbo, 2010).This approach models the growth curve of the latent variable created from multiple observed indicators via structural equation modeling (SEM) techniques, which entails an extra level (a measurement model) at the foundation of the model (Muthén & Muthén, 1998-2010). Adding a measurement model to the growth model allows one to partition random variance and systematic measurement

variance from the true score variance, thus providing a purer representation of change disaggregated from measurement error.

Unconditional MIML growth models were first fitted to estimate trajectories of physical and relational victimization in order to evaluate the overall change in victimization levels. We then examined whether between-person variations in the growth parameters were related to variations in the predictors sex, maternal education, and participation in the WITS® program. Next, we ran separate analyses for program and control children in order to examine the unique contributions of demographic predictors (i.e., sex and maternal education) and *classroom* levels of social responsibility on victimization trajectories. Finally, in order to assess the unique effects of *individual* levels of social responsibility on victimization trajectories, we regressed intercepts and slopes of social responsibility on victimization trajectories while adjusting for sex, and maternal education, and growth in prosocial behaviours.

Level One: Measurement model. The measurement model defines the scaling relationship between the latent variable (i.e., change in the latent variable over time) and the observed indicator. The following equation represents the first level in a MIML model[2]:

$$Y_{ijt} = \tau_{jt} + \lambda_{jt}F_{it} + r_{ijt} \quad (1)$$

Where Y_{ijk} is the observed responses on the victimization items for child *i* on observed indicators *j* at time *t*; τ_{jt} is the intercept of indicators *j* at time *t*; λ_{jt} is the factor loadings for indicators *j* at time *t* for child *i*'s factor (F_{it} = latent factor score across time points) at time *t*; and r_{ijt} is the random error for Y_{ijk}. Following recommendations set forth by Ferrer and colleagues (2008), we scaled the latent variables (F_{it}) in the growth model to a standardized metric. Under this specification, the latent variable has a mean of 0 and a standard deviation of 1 at time 1, and

[2] Notations and analyses were based on approaches developed by Muthén and Muthén (1998-2010).

the scale for the factors (means and SDs) of the remaining time points is set relative to the mean of 0 and SD of 1 at time 1 (see Ferrer et al., 2008 for a more detailed description).

Level Two Model: Latent growth model (intra-individual model). The second level equation captures the intra-individual change in the latent variables over time:

$$F_{it} = \eta_{0i} + b_t\eta_{1i} + \varepsilon_{it} \quad (2)$$

Where the latent factor score F for child i at time t equals the sum of the intercept growth factor (i.e., η_{0i} = the estimated initial status of the latent variable, when b_t equals 0), the change in the factor score given the assigned time parameters (i.e., η_{1i} = the estimated rate of change or slope growth factor in the latent variable), and the residual of F_{it}. In this study, time scores (b_t) are fixed to 0, 1, 1.5 to specify a linear growth curve for data collected after a 12-month and 6-month period.

Level Three Model: growth prediction model (inter-individual model). Level 3 represents the inter-individual differences in the growth of the latent variables over time.

$$\eta_{0i} = \alpha_0 + \gamma_0 X_i + \varsigma_0 \quad (3)$$

$$\eta_{1i} = \alpha_1 + \gamma_1 X_i + \varsigma_1 \quad (4)$$

Time invariant predictors (X_i) can be added to examine the relationship between the predictors and the intercept (η_{0i}) and the slope factor (η_{1i}). γ_0 and γ_1 are regression coefficients of the predictors. The following equations include predictors used in this study: sex, maternal education (MEDU) and participation in a victimization prevention program to predict changes in intercept and slope growth factors:

$$\eta_{0i} = \alpha_0 + \gamma_{01}\text{SEX}_i + \gamma_{02}\text{MEDU}_i + \gamma_{03}\text{PROGRAM}_i + \varsigma_{0i} \quad (3)$$

$$\eta_{1i} = \alpha_1 + \gamma_{11}\text{SEX}_i + \gamma_{12}\text{MEDU}_i + \gamma_{13}\text{PROGRAM}_i + \varsigma_{1i} \quad (4)$$

Separate analyses for program and control children were then conducted in order to assess the unique contributions of these demographic predictors on victimization trajectories. In addition to sex and maternal education, classroom levels of social responsibility (SR CLASSROOM) at time 1 was entered as a predictor of victimization intercepts and slopes to test whether the between-persons variation in the growth parameters were related to variations in classroom levels of social responsibility. The following equations were fitted to victimization for program and control children separately:

$$\eta_{0i} = \alpha_0 + \gamma_{01}\text{SEX}_i + \gamma_{02}\text{MEDU}_i + \gamma_{03}\text{SR CLASSROOM T1}_i + \varsigma_{0i} \quad (5)$$

$$\eta_{1i} = \alpha_1 + \gamma_{11}\text{SEX}_i + \gamma_{12}\text{MEDU}_i + \gamma_{13}\text{SR CLASSROOM T1}_i + \varsigma_{1i} \quad (6)$$

In the next model, we tested whether individual levels of social responsibility predicted initial levels and change in victimization. In addition to sex and maternal education, we also entered growth in receipt of prosocial behaviors into the model in order to assess the distinct contribution of individual social responsibility on victimization trajectories over and above the contributions of prosocial behaviors. To test this, conditional parallel growth models were fitted to assess how growth in victimization were predicted by individual levels of social responsibility, adjusting for parallel growth in receipt of prosocial behaviors, gender, and maternal education. Specifically, in addition to the demographic variables, the predicted intercept, slope, and interaction between the intercept and slope of social responsibility were added in as predictors of growth in victimization. Only the predicted intercept of social responsibility was permitted to predict differences in the intercept of victimization, as only the intercept in social responsibility would be useful in predicting initial levels of victimization due to the temporal ordering of variables (i.e., it would not make sense that changes in social responsibility would predict initial levels of victimization).

In order to adjust for prosocial behaviors on victimization trajectories in the specification of the conditional parallel growth model, the intercept and slope of prosocial behaviors were added as predictors of initial levels and growth in victimization. Specifically, the slope of prosocial behavior was regressed on the slope of victimization. The intercept of prosocial behavior was regressed on the intercept of victimization[3].

Results

Mean levels, standard deviations, and psychometric properties for all variables at each time point are presented in Table 1. Correlations between the variables at each time point are provided in Table 2 . Full information maximum likelihood (FIML) was used to estimate model parameters under the assumption that missing data were missing at random (Kline, 2005).

Unconditional Baseline Growth Model: Examining changes in victimization over time

Multiple-indicator multilevel growth models were fitted using Mplus (Muthén & Muthén, 1998-2010). Quadratic trends were not estimated due to the limited number of time points. To examine changes in victimization over time, unconditional baseline multiple indicator growth models were fitted to victimization factors. Intercept and slope growth factors were allowed to covary in order to the determine the association between initial levels and rates of change.

The baseline multiple indicator growth model for physical victimization fit the data well (X^2 = 141.00, df = 89, CFI = .97, χ^2/df = 1.58, RMSEA = .03). Significant variance existed in the intercept (σ^2 = .63) but not in the slope (σ^2 = .20) growth factors. The average slope was

[3] Within-person regressions between prosocial behaviours and victimization at each time point were constrained to be equal. Prosocial behaviour residual variances at each time point were constrained to be equal. In order to have the same set of control variables for prosocial behaviours, an identical set of covariates that was used to predict changes in victimization (i.e., the demographic variables, the predicted intercept, slope, and interaction between the intercept and slope of social responsibility) were also regressed onto the slope prosocial behaviours.

significantly different from zero (η_{1i} = -0.36), indicating that physical victimization decreased over time. The intercept and slope growth factors were not significantly correlated.

Table 1.

Psychometric Properties and Mean Levels (Standard Deviations) of Physical Victimization, Relational Victimization, Receipt of Prosocial Acts, and Social Responsibility for Girls (*N* = 391) *and Boys* (*N* = 392) *and Program (N = 455) and Control Children (N = 329)*

Variables	α	Range	Boys	Girls	Program	Control	Total
Physical Victimization							
T1	.79	0 - 10	2.62 (2.38) [a]	2.16 (2.19)	2.62 (2.35) [b]	2.07 (2.17)	2.39 (2.29)
T2	.76	0 - 10	2.39 (2.13) [a]	1.98 (1.98)	2.22 (2.06)	2.13 (2.08)	2.19 (2.07)
T3	.77	0 - 10	2.17 (2.08) [a]	1.70 (1.77)	1.93 (1.92)	1.95 (1.98)	1.94 (1.95)
Relational Victimization							
T1	.77	0 - 10	2.53 (2.37)	2.53 (2.50)	2.68 (2.44) [b]	2.33 (2.41)	2.54 (2.43)
T2	.76	0 - 10	2.26 (2.20)	2.38 (2.26)	2.39 (2.22)	2.23 (2.24)	2.32 (2.23)
T3	.76	0 - 10	2.05 (2.27)	2.09 (2.13)	2.07 (2.23)	2.07 (2.17)	2.07 (2.20)
Prosocial Behaviours							
T1	.73	0 - 10	6.41 (2.31) [a]	7.15 (2.17)	6.74 (2.31)	6.83 (2.21)	6.78 (2.27)
T2	.76	0 - 10	6.34 (2.34) [a]	7.45 (2.10)	7.05 (2.26)	6.72 (2.33)	6.91 (2.29)
T3	.78	0 - 10	6.37 (2.31) [a]	7.52 (2.05)	6.98 (2.30)	6.89 (2.20)	6.90 (2.26)
Social Responsibility							
T1	.93	0 - 15	7.76 (3.36) [a]	9.10 (2.94)	8.74 (3.34) [b]	8.00 (3.19)	8.43 (3.27)
T2	.93	0 - 15	8.01 (3.24) [a]	9.01 (2.94)	8.67 (3.07)	8.28 (3.23)	8.50 (3.13)
T3	.93	0 - 15	8.03 (3.44) [a]	9.35 (3.08)	9.06 (3.30) [b]	8.17 (3.34)	8.69 (3.33)

Note: *N*s are based on children who have reported victimization in the past three time periods. T1 = Baseline, fall of first grade; T2 = Time 1, fall of grade 2; T3 = Time 2, spring of second grade. [a]Mean levels differ significantly ($p < .05$) between girls and boys. [b] Mean levels differ significantly ($p < .05$) between program and control children

Table 2.

Zero-order Correlations of Aggregated Variables

Variable	Correlation										
	1	2	3	4	5	6	7	8	9	10	11
1. T1 Physical Victimization	---										
2. T1 Relational Victimization	.68**	---									
3. T1 Prosocial Behaviours	-.14**	-.14**	---								
4. T1 Social Responsibility	-.15**	-.19**	.16**	---							
5. T2 Physical Victimization	.45**	.39**	-.09*	.19*	---						
6. T2 Relational Victimization	.35**	.44**	-.09*	-.15**	.68**	---					
7. T2 Prosocial Behaviours	-.12**	-.14**	.42**	.15**	-.17**	-.21**	---				
8. T2 Social Responsibility	-.15**	-.19**	.14**	.49**	-.19**	-.13**	.20**	---			
9. T3 Physical Victimization	.38**	.35**	-.11**	-.21**	.49**	.39**	-.14**	-.21**	---		
10. T3 Relational Victimization	.31**	.39**	-.05	-.21**	.43**	.51**	-.17**	-.19**	.63**	---	
11. T3 Prosocial Behaviours	-.13**	-.16**	.33**	.15**	-.18**	-.24**	.54**	.20**	-.19**	-.22**	---
12. T3 Social Responsibility	-.17**	-.19**	.15**	.50**	-.17**	-.15**	.21**	.62**	-.23**	-.21**	.20**

Note. T = time point; * $p < .05$. ** $p < .01$.

The baseline multiple indicator growth model for relational victimization also fit the data well (X^2 = 111.03, *df* = 89, CFI = .99, χ^2/df = 1.25, RMSEA = .02). On average, relational victimization also declined significantly over time (η_{1i} = -0.11, $p < .01$). Significant variability existed in the intercept (σ^2 = .62) but marginally for the slope growth factor (σ^2 = .18, p = .08). The intercept and slope growth factors were also not significantly correlated.

Conditional Model with Demographic and Context Predictors: Sex, maternal education, participation in the WITS program, and classroom levels of social responsibility

Next, conditional latent factor growths models were fitted to test whether the between-persons variations in the growth parameters in the unconditional baseline models were related to demographic and contextual differences. Models for both physical and relational victimization had acceptable fit (physical: X^2 = 202.03; *df* = 128; CFI = .96; χ^2/df = 1.58; RMSEA = .03; and relational: X^2 = 160.18; *df* = 128; CFI =.99; χ^2/df = 1.25; RMSEA = .02). Unstandardized estimates are provided in Table 2. For physical victimization, gender and participation in the WITS peer victimization prevention program were significantly related to initial levels and changes over time. Specifically, a significant association of sex (0 = males; 1 = females) with the initial status of physical victimization (estimate = -.25), indicate that at time 1, girls report less physical victimization than boys. Children who participated in the WITS peer victimization prevention program (0 = control; 1 = program) reported more physical victimization at baseline (estimate = .24). On average, both sex and maternal education were not associated with changes in physical victimization over time (estimates <.01 and .06 respectively). However, participation in the WITS program predicted faster declines in physical victimization over time (estimate = -.21).

Table 3.

Latent growth model with gender, maternal education, and participation in the WITS program predicting trajectories of victimization for children in all schools

Growth parameter and effect of predictor on victimization	Physical victimization	Relational victimization
Intercept growth factor of victimization		
Sex	-0.25**	-0.06
Maternal education	-0.13	-0.02
Participation in the WITS program	0.24**	0.22**
Slope growth factor of victimization		
Sex	<-0.01	-0.01
Maternal education	0.06	-0.01
Participation in the WITS program	-0.21**	-0.13*
Variance components		
Intercept growth factor	0.46**	0.62**
Slope growth factor	0.13	0.18

Note. Control schools = 0; program schools = 1. * $p<.05$. ** $p<.01$

For relational victimization, sex and maternal education were not associated with initial levels or changes over time. Participation in the WITS program predicted higher initial levels (estimate = .22) and faster declines in relational victimization (estimate = -.13).

Next, in order to identify differential effects on program and control schools, separate conditional growth models were fitted to data for program and control groups separately[4].

[4] Unconditional growth models were also fitted separately for control and program groups. For physical victimization, the variance of the intercept and slope for the control group were not significantly different from 0. The mean slope was -.23, p <.001 and the intercept and slope were not significantly correlated. In the program group, the variance of the intercept and slope were both significant (σ^2 =.81 and 0.32, ps <.01 respectively) and the mean slope was -.44, p <.01. The intercept and slope were significantly negatively correlated, r = -.30, p < .05. In relational victimization, the variance of the intercept in the control was significant (.50, p <.01) but the slope variance, mean, and covariance with the intercept was not. In the program group, the variance of the intercept and slope were significant, .74, .25, ps < .001 respectively. The mean slope was -.16, p <.001 and the intercept and slope were significantly negatively correlated, r = -.26, p < .05.

Classroom levels of social responsibility were added in to the model in addition to demographic variables to assess the effects of classroom social responsibility on victimization trajectories. Demographic variables were significant in the control group (but not program) for both physical and relational victimization (see Table 3). Specifically, gender and maternal education were significantly associated with initial levels of physical victimization (estimates = -.46 and -.41 respectively), such that girls and children with mothers who had some form of post-secondary education had lower levels of physical victimization at baseline. Similarly girls reported lower initial levels of relational victimization (estimate = -0.27). Classroom levels of social responsibility were not associated with intercepts and slopes of victimization in the control group. However, greater classroom levels of social responsibility were associated with faster declines in relational victimization for program children (-0.07).

Table 4.

Latent growth model with gender, maternal education, and classroom levels of social responsibility predicting trajectories of victimization for children in control and program schools

Growth parameter and effect of predictor on victimization	Physical victimization		Relational victimization	
	Control	Program	Control	Program
Victimization Intercept				
Sex	-0.46**	-0.17	-0.27*	-0.44
Maternal education	-0.41*	0.01	-0.18	0.64
Classroom levels of social responsibility at time 1	-0.01	-0.01	-0.01	0.17
Victimization Slope				
Sex	0.06	-0.04	0.11	-0.09
Maternal education	0.21	0.01	0.05	-0.02
Classroom levels of social responsibility at time 1	0.09	-0.01	0.01	-0.07**

* $p<.05$. ** $p<.01$

Conditional model with intercepts and slopes of individual social responsibility

The estimated average growth parameters of the final fitted model of victimization, adjusting for gender, maternal education, social responsibility, and growth in prosocial behaviors are presented in Table 4. In the control group, gender and maternal education continued to be negatively associated with the intercept of physical victimization (-.41 and -.44, *p*s <.05 respectively). The intercept of social responsibility was also negatively associated with the intercept of physical victimization (-0.21, $p < .5$), such that higher initial levels of social responsibility predicted lower initial levels of physical victimization in the control group. No variables were associated with initial levels of relational victimization in the control group.

Similarly, none of the variables were associated with baseline levels of physical victimization in the program group. However, the intercept of prosocial behavior was marginally negatively associated with lower baseline levels of relational victimization, such that children in the program group who reported greater receipt of prosocial behaviors at baseline reported lower initial levels of relational victimization, -.75, $p = .08$. The intercept of social responsibility was also negatively associated with the intercept of relational victimization (-0.08, $p < .01$), showing that children with higher initial levels of social responsibility reported lower victimization scores than children with lower initial levels of social responsibility.

The slope of physical victimization was negatively associated with the predicted intercept of social responsibility in the program group. Specifically, after adjusting for gender, maternal education, and growth in prosocial behavior, the predicted intercept of social responsibility predicted steeper declines in physical victimization over time (-.06, $p < .05$). None of the variables were associated with baseline levels and changes in relational victimization in both program and control groups.

Table 5.

Latent growth model with gender, maternal education, prosocial behaviours, and social responsibility predicting trajectories of victimization for children in control and program schools

Growth parameter and effect of predictor on the parameter on victimization	Physical victimization		Relational victimization	
	Control	Program	Control	Program
Victimization Intercept (Grade 1)				
Sex	-0.41*	-0.03	-0.17	0.22
Maternal education	-0.44*	0.04	-0.15	0.14
Intercept of prosocial behaviour	0.08	-0.07	0.01	-0.12
Intercept of social responsibility	-0.12*	-0.05	-0.10	-0.08**
Victimization Slope				
Sex	-0.14	0.06	0.13	-0.05
Maternal education	0.25	-0.03	0.08	-0.04
Slope of prosocial behaviour	0.39	-0.05	-0.17	-0.09
Intercept of social responsibility	0.08	-0.06**	0.02	-0.02
Slope of social responsibility	0.32	-0.17	0.09	0.03
Interaction between intercept and slope of social responsibility	-0.07	0.02	-0.03	<-0.01
Variance components				
Intercept growth factor	0.05	0.74**	0.04	0.91**
Slope growth factor	-0.20	-0.32**	-0.08	-0.34**

* $p<.05$. ** $p<.01$

Discussion

The overarching goal of the current study was to examine protective contexts that can influence trajectories of victimization. Specifically, we tested whether participation in the WITS® program and levels of social responsibility predicted declines in victimization. Results from the latent multiple indicator growth models revealed that on average, victimization declined significantly over time. Trajectories of physical and relational victimization also differed by schools, such that children in schools that participated in the WITS® prevention program reported steeper declines in victimization over time. Moreover, classroom levels of social responsibility were associated with steeper declines in relational victimization trajectories for program children compared to control children. Similarly, individual initial levels of social responsibility were associated with faster declines in physical victimization in program children. Initial levels of social responsibility were also associated with baseline levels of victimization, such that higher initial levels of social responsibility predicted lower levels of physical victimization in control children and lower levels of relational victimization in program children. Gender and maternal education was significantly associated with baseline physical victimization in control children. That is, girls and children whose mothers had some form of post-secondary education reported lower levels of physical victimization at baseline. Each of these findings and their implications will be described next.

Trajectories of Victimization and the WITS® Prevention Program

Consistent with previous research (Giesbrecht et al., in press; Hanish & Guerra, 2000; Olweus, 1994), our findings showed that average levels of physical and relational victimization decreased over time. Given that aggression tends to decline during early childhood and victimization often co-occurs with aggression (Brame et al., 2001; Côté et al., 2007; Leadbeater

& Hoglund, 2009), it is not surprising that victimization decreased over time in this sample. Nevertheless, this finding does not negate that some children may still increase in their victimization over time. Indeed, there is variability in victimization slopes, which suggest that there are individual differences in victimization growth. Other studies that have examined subgroups of victimized children have found that a significant cluster of children demonstrate chronic, increasing trajectories of victimization throughout early childhood. Using latent growth mixture models to estimate trajectories of mother-rated peer victimization in a longitudinal study involving preschool children (4.5 months of age to 7 years old), Barker et al., (2008) found that most of the children (71%) followed a low/increasing trajectory, 25% followed a moderate increasing trajectory, and 4% followed a high-chronic trajectory. In a slightly older sample, Kochenderfer-Ladd and Wardrop (2001) found that 14% of children were classified as victims at three or more time points during kindergarten to Grade 3. Leadbeater and Hoglund (2009) found that 20% of children showed curvilinear trajectories with initial decreases and then increases in internalizing over time while 7% percent of children followed a high stable trajectory. In their sample, these children in the higher risk internalizing clusters were more likely to be victimized. Thus, further examination of subgroups of victimized children in this sample is warranted.

Prevention programs that engage multiple contexts in children's ecology can reduce children's experiences of victimization by their peers (Merrell et al., 2008). The finding that participation in the WITS® prevention program was associated with steeper declines in victimization compared to control schools is consistent with other longitudinal evaluations of universal, multi-setting programs (Ryan & Smith, 2009). The positive effect of the WITS® prevention program on accelerating declines of victimization trajectories is consistent with previous evaluations of the program (Giesbrecht et al., in press; Leadbeater et al., 2003;

Leadbeater & Sukhawathanakul, in press). Our finding extends previous evaluations of the program by employing a multiple-indicator latent growth model to examine victimization trajectories. The major advantage of incorporating such a method of analysis allows researchers to account for measurement error, thus providing a more precise measure of victimization (i.e., true score change, support of construct validity, etc.). Few studies have examined measurement invariance of the victimization construct over time in younger elementary school samples (Desjardins et al., in press) and to date, no studies have employed a multiple indicator growth model in the victimization literature. Embedding a measurement model into a growth model provides a more methodologically sound and versatile framework for studying growth and change (Wu, Liu, Gadermann, & Zumbo, 2010). Statistical techniques such as HLM and SEM have been increasingly utilized in longitudinal research on victimization. Evaluations of prevention programs are encouraged to use these techniques to help understand treatment effects (Ryan & Smith, 2009). While studies of predictors and correlates of change using these methods have yielded valuable findings on trajectories of victimization, this paper introduced the combination of both these methods and provides empirical support on the usefulness of the approach.

Classroom Levels of Social Responsibility

There are a number of peer victimization programs that exist which have been effective in reducing victimization over time. For example, participation in the *Youth Matters* program was associated with greater declines in victimization among fourth graders (Jenson & Dietrich, 2007). However, the underlying mechanisms that are responsible for program effectiveness are not well understood. This study aimed to examine the protective effects of social responsibility (as promoted by the WITS® program) on victimization trajectories.

Consistent with hypotheses, greater classroom levels of social responsibility were associated with accelerated declines in relational victimization for program children. That is, victimization declined faster for program children who belonged to classrooms with highly socially responsible peers. This finding supports the conclusion that when social responsible behaviors are endorsed by peers, children are less likely to be relationally victimized. Previous studies have found that aggressive norms in the classroom that perpetuate aggressive behaviors can exacerbate the risks for victimization and compromise prevention effects (Aber et al., 1998; Kellam et al., 1998). Moreover, negative beliefs about peers (i.e., when children perceive the majority of their peers to be antisocial and less friendly) are associated with greater victimization over time (Troop-Gordon & Ladd, 2005). Conversely, our finding suggests that when a child is in a classroom where the majority of children support a socially responsible context, where there is a collective effort towards tolerance and fairness, they are less likely to be a victim of bullying. These social responsible behavioral expectations are characterized by attitudes that are less likely to be accepting of aggressive behaviors by peers and thus can encourage other children to engage in more peaceful conflict resolution strategies (e.g., ignoring the perpetrator or seeking help from an adult) when confronted with a bully situation.

As the protective effects of social responsibility classroom norms were more salient in program children, it is possible that the effectiveness of the program may operate through enhancing social responsible norms and behavioral expectations. Indeed, the positive significant correlations between individual and classroom levels of social responsibility indicate that children are more likely to be socially responsible themselves if the majority of the children in their classroom were socially responsible. Children are more likely to behave similarly to their peers through varying social learning mechanisms such as rewarding, punishing, and modeling

behavior (Aber et al., 1998; Barth et al., 2004). It may be that classroom composition influences children by providing behavioral norms or expectations. These standards of behavior, known as "injunctive norms" (Cialdini, Kallgren, & Reno, 1991; Henry, 2008; Henry et al., 2000), often governs the action of a child based on whether the majority of their peers support or discourage such behaviors. For example, if a child acts in opposition to the socially responsible norms and behavioral expectations of their peers, their actions are likely to disrupt the functioning of the classroom and their peers will be more likely to discourage such behaviors. This dynamic feedback process is important in guiding how an individual learns to conduct themselves based on the norms of their setting.

According to Henry and colleagues this feedback mechanism is not a passive process by which children imitate the actions of their peers, but rather direct their behaviors according to the social conventions (i.e., not "what is", but how we "ought to be"). Therefore, behavioral choices are not exclusively influenced by the observed behaviors of their classmates but by the morality of aggressive behaviors based on the classroom context. Using urban elementary school samples (grades 1-4) and a cross-validation sample of early adolescent samples (6th graders), Henry et al., (2000) found that injunctive norms rather than descriptive norms (i.e., norms that merely *describe* what people will do) predicted aggressive behaviors over time. Children tended to conform to the normative expectations of their classroom (i.e., injunctive norms) and readjust their behavior when norms changed in a new classroom context. Moreover, when classmates and the teacher make salient injunctions against aggressive behavior, aggression diminished. The authors concluded that children are more likely to be influenced by the moral climate of the classroom regarding aggressive behaviors than by the observed behavior of classmates. They also recommend that prevention programs aimed at reducing aggressive behaviors should direct

their efforts at changing classroom norms, such as through a social responsibility curricular, as well as individual normative beliefs (Henry et al., 2000).

In this study, declines in victimization for WITS® program children were associated with classroom and individual levels of social responsibility. Given that the WITS® prevention program was integrated into (not added onto) the British Columbia language arts and social responsibility curriculum guidelines with the intent of changing classroom contexts, children in program schools may have learned to endorse more socially responsible behaviors that were specifically targeted towards preventing peer victimization. For example, school police liaisons help initiate the program each fall in a "deputizing ceremony" where the children pledge to help each other and to keep each other safe from bullying. This public, community-endorsed gesture of the collective promise to maintain the welfare of others (from not only uniformed community members but also school staff, university athletes, and parents) provides children with a positive role model for which to emulate in their own classrooms. Our findings shed some light on a potential mechanism that could explain how the program was effective in accelerating declines in victimization. This study joins a number of other studies that demonstrate that programs which focus on changing classroom contexts can help offset the risks for victimization (e.g., Kellam et al., 1998). Nonetheless, an important caveat to note is that the protective effect of exposure to norms of social responsibility was only demonstrated in relational victimization. Further investigation is needed to understand the unique contribution of social responsibility on the type of victimization.

Individual Levels of Social Responsibility

While levels of exposure to classroom norms of social responsibility were associated with steeper declines in relational victimization for program children, individual levels of social

responsibility were associated with faster declines in physical victimization. That is, children in program schools who were rated as highly socially responsible children by their teachers at baseline reported less physical victimization over time. Findings also revealed that children who were more socially responsible at grade 1 reported receiving more prosocial behaviors from their peers at baseline.

The finding that growth in social responsibility and the interactions between slopes and intercepts did not predict change in victimization over time is not surprising. In an earlier study with the same sample, we found that average levels of social responsibility did not increase over time although program schools had consistently higher levels of social responsibility than control schools at each time point (Leadbeater & Sukhawathanakul, in press). It may be that increases in social responsibility were not large enough to exert significant influences on victimization trajectories.

It is also possible that initial levels of individual social responsibility may have exerted a stronger influence on victimization trajectories than changes (slopes) in social responsibility because children may have already developed socially responsible beliefs. During the early school years, children may form their beliefs about the appropriateness of behaviors based on the beliefs of their peers. Aggressive injunctive norms, for example, tend to exert influences on aggressive behavior by changing personal normative beliefs about aggression which are developed in early childhood (Henry et al., 2000; Troop-Gordon & Ladd, 2005). Perhaps personal beliefs of social responsibility are strengthened in the early school years and continue to exert a protective influence over the course of elementary school. Additionally, the finding that declines in victimization and its inverse relationship with social responsibility were seen only in the program group suggests that the WITS® prevention program may prolong the protective

effects of being socially responsible in first grade. The WITS® program had already been in place prior to the evaluation of the program schools. Thus, children in program schools may already be highly socially responsible at the start of the evaluation because social responsibility against victimization has been previously normalized in classroom and school settings.

It is important to note that even after adjusting for growth in prosocial behaviors, social responsibility still exerted an influence on victimization trajectories. That is, children who were rated as highly socially responsible by their teachers during first grade were more likely to experience greater declines in victimization regardless of whether they received prosocial behaviors from their peers. Thus, children who are more socially responsible may have developed personal normative beliefs and behavioral expectations that perpetuate positive attitudes toward tolerance and fairness. These socially responsible children may be more popular in their classroom and less likely to be bullied. It is surprising that receipt of prosocial behavior did not significantly influence victimization trajectories. Perhaps receiving positive acts from peers are not as pronounced as social responsibility. More research is needed to understand how prosocial behaviors in relation to social responsibility operate within a classroom context.

Limitations

There are several limitations to this study. First, the study relied on teacher-reported measures of social responsibility. While CFA results supported the internal validity of the construct, it is nonetheless limited to teacher's perception of their students which can be susceptible to social desirability biases. Teacher reports are also limited to only what they can observe in their school settings which may not be fully representative of the students' characteristics. Future studies should employ multi-method, multi-informant approaches to make this measure more psychometrically robust.

In addition to child reports, it would also be worthwhile to obtain a measure of social responsibly from parents' perspectives. Few studies have directly examined associations between social responsibility and family contexts, particularly in young children. Gunnoe, Hetherington, and Reiss (1999) found that parental religiosity positively predicted adolescent social responsibility, both directly and indirectly through authoritative parenting practices. Thus, parents may play an active role in channeling beliefs that foster social responsibility. More research is needed to understand how norms of social responsibility are transmitted through varying layers of a child's ecology (e.g., school, family, neighborhood).

Another limitation involves our measure of classroom levels of social responsibility. Classroom exposure to social responsibility was calculated from classroom means based on average individual measures. This approach is not a pure measure of classroom levels of social responsibility as it can be susceptible to sample sizes. Further, classroom social responsibility in this study only measures the relative endorsement of socially responsible *behaviors* within a classroom rather than capturing classroom *normative beliefs about social responsibility*. Perhaps a more accurate method of measuring social responsibility classroom normative beliefs and behavioral expectations is to assess the relative endorsement of behaviors based on the distribution of approvals and disapprovals within a classroom. Henry (2008) offers several methods for measuring norms in a classroom which include creating indices for the intensity of a particular norm (i.e., how strongly individuals in a social system feel about the norm), calculating the potential cost and benefit of behavioral change (i.e., a ratio of the degree of disapproval or approval over all behaviors), and assessing the degree of consensus about a norm (i.e., average variance around all behaviors).

There are also limits to the generalizability of the findings in this study. The study was conducted among Canadian children from an urban, mid-size city so it is difficult to infer whether results would generalize to remote and rural areas. Research suggests that youth differ in their reports of victimization depending on their geographic locations (Leadbeater, Sukhawathanakul, Sklar, & Smith, 2010). Randomized control trials are needed to evaluate the effectiveness of the program across varying contexts.

Conclusion

Trajectories of peer victimization can be changed by protective contexts. Participation in the WITS® prevention program accelerated declines in victimization over time. Classroom and individual levels of social responsibility were associated with faster declines in victimization program children beyond the contributions of receiving prosocial behaviors from peers. This study extends previous evaluations of the WITS® prevention program by identifying components of the program that could account for declines in victimization. Social responsibility may be one of the key active ingredients in this multi-component and multi-setting program. Subsequent research should consider the effect of classrooms on trajectories of victimization when assessing the impact of prevention programs.

References

Arbuckle, J. L. (2006). Amos (Version 7.0). Chicago: SPSS.

Aber, J.L., Jones, S.M., Brown, J.L., Chaudry, N. and Samples, F., 1998. Resolving conflict creatively: Evaluating the developmental effects of a school-based violence prevention program in neighborhood and classroom contexts. *Development and Psychopathology 10*, 187–213.

Baldry, A., & Farrington, D. (2007). Effectiveness of programs to prevent school bullying. *Victims & Offenders*, *2*(2), 183-204.

Barker, E., Boivin, M., Brendgen, M., Fontaine, N., Arseneault, L., Vitaro, F., et al. (2008). Predictive validity and early predictors of peer-victimization trajectories in preschool. *Archives of General Psychiatry, 65*(10), 1185-1192.

Barth, J. M., Dunlap, S. T., Dane, H., Lockman, J. E., & Wells, K. C. (2004) Classroom environment influences on aggression, peer relations, and academic focus. *Journal of School Psychology, 42,* 115-133.

Beaver, K. M., Wright, J. P., & Maume, M. O. (2008). The effect of school classroom characteristicscs on low

Berkowitz, M., and Bier, M. (2005) What Works in Character Education: A Report for Policy Makers and Opinion Leaders. Character Education Partnership. St Louis: MO

Berkowitz, L. & Daniels, L. R. (1963). Responsibility and dependency. *Journal of Abnormal and Social Psychology, 66,* 664-669.

Bollen, K. A. (1989). *Structural equations with latent variables.* NY: Wiley.

Boulton, M. J., & Smith, P. K. (1994). Bully/victim problems in middle-school children: Stability, self-perceived competence, peer perceptions and peer acceptance. *British Journal of Developmental Psychology, 12*, 315-329.

Brame, B., Nagin, D. S., & Tremblay, R. E. (2001). Developmental trajectories of physical aggression from school entry to late adolescence. *Journal of Child Psychology and Psychiatry, 42*(4), 503-512.

British Columbia Ministry of Education. (2001). *BC performance standards. Social responsibility: A framework*. Victoria, BC: British Columbia Ministry of Education. Retrieved May 20, 2009, from http://www.bced.gov.bc.ca/perf_stands/social_resp.htm

Bronfenbrenner, U., & Morris, P. (1998). The ecology of developmental processes. *Handbook of child psychology: Volume 1: Theorectical models of human development (5th ed.)* (pp. 993-1028). Hoboken, NJ US: John Wiley & Sons Inc.

Brown, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), Testing structural equation models (pp. 136-162). Newbury Park, CA: Sage.

Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming.* Mahwah, NJ: Lawrence Erlbaum Associates.

Cialdini, R. B., Kallgren, C. A., & Reno, R. R. (1991). A focus theory of normative conduct: A theoretical refinement and re-evaluation. *Advances in Experimental Social Psychology, 24*, 201-234.

Caldwell, S. & Pianta, R. C. (1991). A measure of young children's problem and competence behaviours: the Early School Behaviour Scale. *Journal of Psychoeducational Assessment, 9 (1)*, 32-44.

Card, N., Isaacs, J., & Hodges, E. (2008). Multiple contextual levels of risk for peer victimization: A review with implications for prevention and intervention efforts. *School violence and primary prevention* (pp. 125-153). New York, NY US: Springer Science + Business Media.

Cemalcilar, Z. (2009). Understanding individual characteristics of adolescents who volunteer. *Personality and Individual Differences, 46*, 432-436.

Cicchetti, D., Toth, S. L., & Maughan, A. (2000). An ecological-transactional model of child maltreatment. In A. J. Hameroff, M. Lewis, & S. M. Miller (Eds.), *Handbook of developmental psychopathology* (pp. 689–722). New York: Plenum Publishers.

Cohen, J. (1994). The earth is round ($p < .05$). *American Psychologist, 49*, 997-1003.

Côté, S., Vaillancourt, T., Barker, E., Nagin, D., & Tremblay, R. (2007). The joint development of physical and indirect aggression: Predictors of continuity and change during childhood. *Development and Psychopathology, 19*, 37-55.

Craig, W.M., & Harel, Y. (2004). Bullying, physical fighting and victimization -- Young people's health in context. In (Eds.), Currie, C., Roberts, C., Morgan, A., Smith, R., Settertobulte, W., Samdal, O., & Rasmussen, V.B. Health Behaviour in School-aged Children (HBSC) study: International report from the 2001/2002 survey, *Health Policy for Children and Adolescents*, No. 4. World Health Organization.

Craig, W., & Pepler, D. (2003). Identifying and targeting risk for involvement in bullying and victimization. *The Canadian Journal of Psychiatry / La Revue canadienne de psychiatrie*,48(9), 577-582.

Crick, N. R., & Grotpeter, J. K. (1996). Children's treatment by peers: Victims of relational and overt aggression. *Development and Psychopathology, 8*, 367-380.

DeRosier, M. (2007). Peer-Rejected and Bullied Children: A Safe Schools Initiative for Elementary School Students. *Bullying, victimization, and peer harassment: A handbook of prevention and intervention,* 257-276, New York, NY US: Haworth Press.

Desjardins, T., Yeung, R. S., Sukhawathanakul, P., MacDonald, S. W. S., & Leadbeater, B. J. (in press). The underlying factor structure of the Social Experience Questionnaire among early elementary school children. *Psychological Assessment*.

Doll, B., Song, S., & Siemers, E. (2004). Classroom Ecologies That Support or Discourage Bullying. *Bullying in American schools: A social-ecological perspective on prevention and intervention* (pp. 161-183).

Egan, S., & Perry, D. (1998). Does low self-regard invite victimization? *Developmental Psychology, 34*(2), 299-309.

Ferrer, E., Balluerka, N., & Widaman, K. F. (2008). Factorial invariance and the specification of second-order latent growth models. *Methodology, 4(1)*, 22-36.

Fraser, M., Galinsky, M., Smokowski, P., Day, S., Terzian, M., Rose, R., et al. (2005). Social Information-Processing Skills Training to Promote Social Competence and Prevent Aggressive Behavior in the Third Grades. *Journal of Consulting and Clinical Psychology, 73*(6), 1045-1055. doi:10.1037/0022-006X.73.6.1045.

Ford, M. E., Wentzel, K. R., Wood, D., Stevens, E., & Siesfeld, S. (1989). Processes associated with integration social competence: Emotional and contextual influences on adolescent social responsibility. *Journal of Adolescent Psychology, 4*, 405-425.

Frey, K. S., Hirschstein, M. K., Snell, J. L., Edstrom, L. V. S., MacKenzie, E. P., & Broderick, C. J. (2005). Reducing playground bullying and supporting beliefs: An experimental trial of the steps to respect program. *Developmental Psychology, 41*(3), 479-491.

Giesbrecht, G.F., Leadbeater, B., and MacDonald, S.W.S. (in press). Trajectories of peer

victimization in early elementary school children: Covariation with physical aggression and emotional dysregulation. *Development and Psychopathology*.

Goldbaum, S., Craig, W., Pepler, D., & Connolly, J. (2003). Developmental Trajectories of Victimization: Identifying Risk and Protective Factors. *Bullying, peer harassment, and victimization in the schools: The next generation of prevention* (pp. 139-156). New York, NY US: Haworth Press.

Greenberg, M. T., Kusche, C. A., Cook, E. T., & Quamma, J. P. (1995). Promoting emotional competence in school-aged children: The effects of the PATHS Curriculum. *Development and Psychopathology, 7*, 117-136.

Greenberg, M., Weissberg, R., O'Brien, M., Zins, J., Fredericks, L., Resnik, H., et al. (2003). Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning. *American Psychologist, 58*(6), 466-474.

Gunnoe, M. L., Hetherington, E. M., & Reiss, D. (1999). Parental religiosity, parenting style, and adolescent social responsibility. Journal of Early Adolescence, 19(2), 199-225.

Hanish, L. D., & Guerra, N. G. (2002). A longitudinal analysis of patterns of adjustment following peer victimization. *Development and Psychopathology, 14,* 69-89.

Hawker, D.S.J. & Boulton, M.J. (2000). Twenty years' research on peer victimization and psychosocial maladjustment: A meta-analytic review of cross-sectional studies. *Journal of Child Psychology and Psychiatry, 41*, 441-455.

Hawley, P. H. (2002). Social dominance and prosocial and coercive strategies of resource control in preschoolers. *International Journal of Behavioral Development, 26,* 167-176.

Haynie, D., Nansel, T., Eitel, P., Crump, A., Saylor, K., Yu, K., et al. (2001). Bullies, victims, and bully/victims: Distinct groups of at-risk youth. *The Journal of Early Adolescence, 21*(1), 29-49.

Henry, D. B. (2008). Changing classroom social settings through attention to norms. In B. Shinn & H. Yoshikawa (Eds.) *Toward Positive Youth Development: Transforming schools and*

community programs. (pp. 40-57). NY: Oxford University Press.

Henry, D. B., Guerra, N., Huesmann, R., Tolan, P., VanAcker, R., & Eron, L. (2000). Normative influences on aggression in urban elementary school classrooms. *American Journal of Community Psychology, 28(1),* 59-80.

Hodges, E., Malone, M., & Perry, D. (1997). Individual risk and social risk as interacting determinants of victimization in the peer group. *Developmental Psychology, 33*(6),

Hoglund, W., & Leadbeater, B. (2004). The effects of family, school, and classroom ecologies on changes in children's social competence and emotional and behavioral problems in first grade. *Developmental Psychology, 40,* 533-544.

Hu, L., & Bentler, P. M. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 76-99). Thousand Oaks, CA: SAGE publications.

Jenson, J. M., & Dieterich, W. A. (2007). Effects of a skills-based prevention program on bullying and bully victimization among elementary school children. *Prevention Science, 8*(4), 285-296.

Kochendeftfer, E.J. and Ladd, G.W. (1996). Peer victimization: Cause or consequence of school maladjustment? *Child Development, 67*,1305-1317.

Kochenderfer-Ladd, B., & Wardrop, J. L. (2001). Chronicity and instability of children's peer victimization experiences as predictors of loneliness and social satisfaction trajectories. *Child Development, 72,* 134-151.

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,* 165-185.

Kellam, S., Rebok, G., Ialongo, N., & Mayer, L. (1994). The course and malleability of aggressive behavior from early first grade into middle school: Results of a developmental epidemiology-based preventive trial. *Journal of Child Psychology and Psychiatry, 35*(2), 259-281. doi:10.1111/j.1469-7610.1994.tb01161.x.

Kline, R. B. (2005). *Principles and practice of structural equation modeling (2nd ed.).* NY: Guilford Press.

Kumpulainen, K., Räsänen, E., Henttonen, I., Almqvist, F., Kresanov, K., Linna, S., Moilanen, I., Piha, J., Puura, K., & Tamminen, T. (1998). Bullying and psychiatric symptoms among elementary school-age children. *Child Abuse and Neglect, 22,* 705-717.

Ladd, G. W. (1996). Shifting ecologies during the 5 to 7 year period: Predicting children's adjustment during the transition to grade school. In A. J. Sameroff & M. M. Haith (Eds.), *The five to seven year shift: The age of reason and responsibility* (pp. 363-386). Chicago, IL: University of Chicago Press.

Ladd, G. W., & Kochenderfer-Ladd, B. (2002). Identifying victims of peer aggression from early to middle childhood: Analysis of cross-informant data for concordance, estimation of relational adjustment, prevalence of victimization, and characteristics of identified victims. *Psychological Assessment, 14*, 74-96.

Leadbeater, B., Hoglund, W., & Woods, T. (2003). Changing contents? The effects of a primary prevention program on classroom levels of peer relational and physical victimization. *Journal of Community Psychology*, *31*, 397-418.

Leadbeater, B. and Hoglund, W. (2009). The effects of peer victimization and physical aggressive on changes in internalizing from first to third grade. *Child Development*, 80(3), 843-859.

Leadbeater, B. J. & Sukhawathanakul, P. (in press). Multi-component programs for reducing peer victimization in early elementary school: A longitudinal evaluation of the WITS® Primary program. *Journal of Community Psychology*.

Leadbeater, B. J., Sukhawathanakul, P., Sklar, N., & Smith, A. (2010). *Peer victimization in rural and urban communities: Understanding and addressing differences.* Under review.

Marini, Z., Dane, A., Bosacki, S., & Ylc-Cura. (2006). Direct and Indirect Bully-Victims: Differential Psychosocial Risk Factors Associated With Adolescents Involved in Bullying and Victimization. *Aggressive Behavior, 32*(6), 551-569. doi:10.1002/ab.20155.

Merrell, K., Gueldner, B., Ross, S., & Isava, D. (2008). How effective are school bullying intervention programs? A meta-analysis of intervention research. *School Psychology Quarterly, 23*(1), 26-42.

Minton, S. J., & O' Moore, A. M. (2008). The effectiveness of a nationwide intervention programme to prevent and counter school bullying in Ireland. *International Journal of Psychology & Psychological Therapy, 8*(1), 1-12.

Muthén, L. K. & Muthén, B. O. (1998-2010). *Mplus user's guide* (6th ed.). Los Angeles, CA: Muthén & Muthén.

Nation, M., Crusto, C., Wandersman, A., Kumpfer, K., Seybolt, D., Morrissey-Kane, E., et al. (2003). What works in prevention: Principles of effective prevention programs. *American Psychologist, 58*(6), 449-456.

Olweus, D. (1991). Bully/victim problems among schoolchildren: Basic facts and effects of a school-based intervention program. In D. Pepler & K. Rubin (Eds.), *The development and treatment of childhood aggression* (pp. 411-448). Hillsdale, NJ: Erlbaum.

Olweus, D. (1993). Bully/victim problems among schoolchildren: Long-term consequences and

an effective intervention program. In S. Hodgins, & S. Hodgins (Eds.), *Mental disorder and crime.* (pp. 317-349). Thousand Oaks, CA US: Sage Publications, Inc.

Olweus, D. (1994). Annotation: Bullying at school: Basic facts and effects of a school based intervention program. *Journal of Child Psychology and Psychiatry, 35*, 1171-1190.

O'Moore, M. & Kirkham, C. (2001). Self-esteem and its relationship to bullying behaviour. *Aggressive Behavior, 27*, 269-283.

Ordonez, A. (2007). Prevalence of bullying among elementary school children as a function of the comprehensiveness of anti-bullying policies and programs in the school. (Doctoral Dissertation, Ball State University).

Pellegrini, A. D. & Long, J. D. (2002). A longitudinal study of bullying, dominance, and victimization, during the transition from primary school through secondary school. *Behavioral Journal of Developmental Psychology, 20*, 259-280.

Roland, E. (2000). Bullying in school: Three national innovations in Norwegian schools in 15 years. *Aggressive Behavior, 26*(1), 135-143. doi:10.1002/(SICI)1098-2337(2000)26:1<135::AID-AB11>3.0.CO;2-3.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: Sage.

Salmivalli, C., Kaukiainen, A., & Voeten, M. (2005). Anti-bullying intervention: Implementation and outcome. *British Journal of Educational Psychology*, 75(3), 465-487

Schonert-Reichl, K.A., Smith, V., and Zaidman-Zait, A. Effectiveness of the Roots of Empathy Program in Fostering the Social-emotional Development in Primary Grade Children. (under review)

Schonert-Reichl, K.A., Smith, V., Zaidman-Zait, A and Hertzman, C. Impact of the Roots of Empathy Program on Emotional and Social Competence Among Elementary School-aged Children: Theoretical Developmental and Contextual Considerations. (under review).

Schreiber, J. B., Stage, F. K., King, J., Nora, A., & Barlow, E. A. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research, 99*(6), 323-337.

Schwartz, D., Dodge, K., & Coie, J. (1993). The emergence of chronic peer victimization in boys' play groups. *Child Development*, *64*(6), 1755-1772.

Sharpe, S. and Smith, P.K. (eds.) (1994). *Tackling bullying in your school: A practical handbook for teachers.* London: Routledge.

Smith, J., Schneider, B., Smith, P., & Ananiadou, K. (2004). The effectiveness of whole-school antibullying programs: A synthesis of evaluation research. *School Psychology Review, 33*, 547-560.

Solomon, D., Watson, M., Battistich, V., & Schaps, E. (1996). Creating classrooms that students experience as communities. *American Journal of Community Psychology*, *24*(6), 719-748.

Syvertsen, A. K., Wray-Lake, L., & Flanagan, C. A. (2010, June). *Adolescent social responsibility: The role of parents' values and behaviors*. Poster presented at the Society for Prevention Research meeting, Denver, CO.

Thompson, B. (2000). Ten commandments of structural equation modeling. In L. G. Grimm, & P. R. Yarnell (Eds.), *Reading and Understanding More Multivariate Statistics* (pp. 261-283). Washington D.C.: American Psychological Association.

Troop-Gordon, W., & Ladd, G. (2005). Trajectories of Peer Victimization and Perceptions of the Self and Schoolmates: Precursors to Internalizing and Externalizing Problems. Child Development, 76(5), 1072-1091. doi:10.1111/j.1467-8624.2005.00898.x.

Tremblay, R. E., Nagin, D. S., Séguin, J. R., Zoccolillo, M., Zelazo. P. D., Boivin, M., Pérusse, D., & Japel, C. (2004). Physical aggression during early childhood: Trajectories and predictors. *Pediatrics, 114*, 43-50.

Velásquez, A., Santo, J., Saldarriaga, L., López, L., & Bukowski, W. M. (2010). Context-dependent victimization and aggression: Differences between all-girl and mixed-sex schools. *Merrill-Palmer Quarterly: Journal of Developmental Psychology*, *56(3)*, 283-302.

Weissberg, R., Kumpfer, K., & Seligman, M. (2003). Prevention that works for children and youth: An introduction. *American Psychologist*, *58*(6), 425-432.

Wentzel, K. R. (1991). Social competence at school: Relation between social responsibility and academic achievement. *Review of Education Research, 61(1),* 1-24.

Widaman, K.F., Ferrer, E., & Conger, R.D. (2010). Factorial invariance within longitudinal structural equation models: Measuring the same construct across time. *Child Development Perspectives, 4*, 10-18.

Wu, A. D., Liu, Y., Gadermann, A. M., Zumbo, B. D. (2010). Multiple-indicator multiple growth models: A solution to multiple methodological challenges in longitudinal studies.