2012-06-12

Clarifying the Relationship Between Bullying and Fear of Victimization: The Contribution of Collective Efficacy

Karen R. Spence
Brigham Young University - Provo

Follow this and additional works at: https://scholarsarchive.byu.edu/etd

Part of the Sociology Commons

Clarifying the Relationship Between Bullying and Fear of Victimization:

The Contribution of Collective Efficacy

Karen R. Spence

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of

Master of Science

John P. Hoffmann, Chair
Mikaela Dufur
Stephen Bahr

Department of Sociology

Brigham Young University

August 2012

ABSTRACT

Clarifying the Relationship Between Bullying and Fear of Victimization:
The Contribution of Collective Efficacy

Karen R. Spence
Department of Sociology, BYU
Master of Science

The rate of fear of victimization has declined in recent years but remains a prevalent problem among adolescents. Fear has been explained in past literature by three main theories: victimization theory, social integration theory, and social disorganization theory. However, the prediction of fear of victimization can be done more concisely by the contribution of collective efficacy, a concept that combines a community's feelings of social cohesion with a willingness to intervene for the common good. Using data collected from Philadelphia middle schools in 1993-1994, this study tested the direct and interacting effects of bullying and collective efficacy on fear of victimization with hierarchical linear modeling. The results indicated that bullying is positively related to fear of victimization, and collective efficacy is negatively related to fear of victimization. Contrary to the hypothesis, the moderating effect of collective efficacy on bullying and fear was not statistically significant. Implications for policy and future research are discussed.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

Approximately one in twenty-five adolescents (ages 12 to 18) in the United States is afraid of being attacked or harmed while at school (Dinkes, Kemp, and Baum 2009). While fear of victimization among youth is reportedly on the decline, it continues to be a significant problem. Thus, it is important that research continues to focus on how students can feel safer in the classrooms and hallways of their schools.

In sociological and criminological research, fear of victimization in schools and other institutions has been explained by both individual factors, such as prior victimization or exposure to bullying (Ousey, Wilcox, and Brummel 2008), and community factors, such as social disorganization or lack of social cohesion (Plank, Bradshaw, and Young 2009). Past studies have also established a strong link between incidence of bullying and fear of victimization (Astor et al. 2002); social disorder, social cohesion, and bullying (Bradshaw, Sawyer and O'Brennan 2009); and collective efficacy and fear of victimization (Plank et al. 2009). The role of collective efficacy—defined as "social cohesion . . . combined with [a] willingness to intervene on the behalf of the common good" (Sampson, Raudenbush, and Earls 1997:918)—is a new addition to this literature, but it has not been assessed in conjunction with both actual victimization experiences and fear of victimization. I propose that the prevalence of collective efficacy in schools moderates the association between bullying in schools—a key type of victimization experience—and fear of victimization.

Examining the process that leads to fear of victimization is important for several reasons. First, there is a clear connection between fear of victimization and stress, with stress being linked to many physical and psychological ailments. A constant state of fear and the stress that accompanies it results in poorer mental and physical health. Second, students are more attentive

1

during class if they are not distracted by a perceived danger waiting in the hallways. Staying focused in class increases the chances of learning, which leads to greater opportunities for academic and financial success in adulthood. Third, frequent experience with bullying often leads to avoidance or withdrawal behaviors, occasionally resulting in the child staying home from school altogether (Batsche and Knoff 1994). Success in school becomes much more difficult when the student is not present to learn. Fourth, providing policymakers with a better understanding of the relationship between collective efficacy, bullying, and fear of victimization may lead to improved safety measures and rules that improve the educational atmosphere and increase feelings of safety in school. For example, identifying the moderating role that collective efficacy has in the relationship between bullying victimization and fear of victimization may encourage policymakers to promote social cohesion between students and teachers and strengthen rules against victimization on campus.

The purpose of this study, therefore, is to explore whether collective efficacy moderates the association between bullying victimization and fear of victimization in schools, controlling for community and individual sociodemographic factors among adolescents in the United States. Victimization is measured by how often a student reports being a victim of bullying behaviors at school. Fear of victimization is measured by how often a student avoids activities out of fear while they are at school. The measure for collective efficacy is based on teacher and principal reports of social cohesion and informal social control. This moderating relationship will be analyzed with data from a survey of students, teachers, and principals in Philadelphia middle schools using a multilevel linear regression model.

BACKGROUND

Fear of Victimization

While the rate of fear has been on the decline over the past fifteen years, approximately 1 in 25 students in the United States still report that they fear being attacked or harmed while at school (Dinkes et al. 2009). Rates of fear of victimization for the general population approach 15% in the U.S. and in other westernized countries (Farrall and Gadd 2004). Researchers have found that this fear has a negative effect on an individual's physical, mental, and economic well-being. More specifically, fear of victimization is associated with a reduction in outdoor physical and social activities; increased levels of anxiety, depression, and distrust; and a loss of financial resources, especially in an effort to prevent victimization (Dolan and Peasgood 2007; Stafford, Chandola, and Marmot 2007; see also Hale 1996 for a review). While some may argue that fear of victimization can turn into problem-solving, preventative action, the majority of individuals who report feelings of fear are not able to resolve it (Jackson and Gray 2010).

Criminologists have focused on three major theories to explain fear of crime and victimization (Akiba 2008; Franklin, Franklin, and Fearn 2008). First, victimization theory states that those who perceive themselves as more vulnerable to crime are more likely to be afraid of crime (May and Dunaway 2000). While this theory accounts for the role that the media plays in promoting fear, such as in the reporting a violent attack in the community (Addington 2003), it also focuses on the strong role that prior victimization has on future fear of victimization. Individuals who are victims of crime are much more likely to fear becoming a victim in the future. This finding also holds true for adolescents in school, such that a student's experience as a bullying victim increases his or her fear of becoming a victim again (Alvarez and Bachman 1997; Astor et al. 2002; Wallace and May 2005).

Second, social disorganization theory posits that residential mobility, demographic heterogeneity, and low socioeconomic status in a neighborhood create disorder, which leads to a loss of social control, consequently leading to an increase in fear of victimization (Plank et al. 2009). Researchers have examined different forms of disorder and found that exposure to signs of physical and social disorder in a neighborhood increase levels of fear in the community (Sampson and Raudenbush 2004). When examining schools as communities, studies have shown that fear among youth increases with exposure to relational aggression (Goldstein, Young, and Boyd 2008); the presence or availability of drugs, alcohol, and gang activity (Alvarez and Bachman 1997); classroom disorder (Akiba 2010); and other signs of disorder at school (Skogan 1995).

Third, social integration theory asserts that informal network and relationship ties help minimize the risk of fear (Adams and Serpe 2000), where the stronger an individual's ties are to others, the less likely he or she fears crime. This theory may serve as a mechanism through which social disorganization theory operates, but it focuses more specifically on the development of social bonds, rather than the context in which they develop. It has been supported by recent research that shows high levels of isolation (Wallace and May 2005) and low social capital (Sacco and Nakhaie 2007) contribute to increased levels of fear. Among adolescents, improved bonding between students and between students and teachers helps to reduce levels of fear in schools (Akiba 2010).

In this study, I propose that all three theories may be elaborated by addressing the role of collective efficacy in schools. Community-based theories have been used in the past to explain school phenomenon (see Plank et al. 2009), and this study builds on that research. As explained later, collective efficacy utilizes and expands aspects of social integration to elaborate the effects

of social disorganization on crime and fear of victimization. As I argue, this concept is especially useful for contextualizing the role of prior victimization on subsequent fear of being a victim.

Bullying and Fear in Schools

The most common form of victimization in schools is bullying, which includes but is not limited to name-calling, teasing, gossiping, theft, physical harm, and threats of physical harm. Victims of bullying are at a higher risk for anxiety and depression, low levels of self-esteem, fear of negative evaluation and future victimization, feelings of isolation, poor physical health, self-harm, and suicidal ideation (Abada, Hou, and Ram 2008; Astor et al. 2002; Morrison 2002; Slee 1994; Storch et al. 2004). Research has also shown that decreased levels of bullying are directly related to increased feelings of trust between students and teachers, as well as increased supervision from teachers during break periods (Olweus 1993; Smith and Birney 2005).

Although victims of bullying have generally poorer mental health and increased feelings of fear, research has shown that certain factors can act as a buffer to these effects. These factors include improved social relationships with other members of the community, positive peer associations, pro-social peer behaviors, and stronger bonds to teachers and parents (Finnegan, Hodges, and Perry 1998; Scholte et al. 2008; Storch and Masia-Warner 2004; Welsh 2001). Research has also shown that an improved school climate, such as one with clear school rules and fewer signs of disorder, can buffer the negative association between bullying victimization and fear (Van Dorn 2004; Welsh 2001). In sum, it appears that the relationship between victimization and fear is moderated by the individual's ability to have positive social interactions with others, especially in an environment with low levels of disorder. Fortunately, Sampson et al. (1997) have identified a singular construct for this concept in their analysis of crime in Chicago neighborhoods.

Collective Efficacy

In their theory of social disorganization, Shaw and McKay (1942) argued that social control served as a crucial mediator between social disorganization and delinquency, but most studies that use their theory to explain crime have overlooked this key factor. To compensate for this oversight, Sampson et al. (1997) introduced a concept identified as collective efficacy: "social cohesion among neighbors combined with their willingness to intervene on behalf of the common good" (918). They proposed that this new concept mediated the relationship between social disorganization and violent crime, thus providing a fuller indicator of community vitality than social control. In particular, individuals in areas with higher collective efficacy perceive a lower amount of violence in the community, net of the effects of the neighborhood's social composition; that is, increased collective efficacy lessens the negative effects of concentrated disadvantage and residential mobility in the neighborhood on reported violence. When applied to geographical neighborhoods, collective efficacy has been measured with responses regarding informal social control (e.g. neighbors taking action), formal social control (e.g. police arrests), social cohesion (e.g. bonding with neighbors), shared beliefs between neighbors, and trust in neighbors (Browning and Erickson 2009; Kirk and Matsuda 2011; Sampson 1999; Sampson et al. 1997).

This concept has also been applied to schools as communities to show that greater social disorder and less collective efficacy are directly associated with increased crime and victimization in schools (Bradshaw et al. 2009; Hernández 2009; Limbos and Casteel 2008; Payne, Gottfredson, and Gottfredson 2003; Plank et al. 2009). When studying collective efficacy in schools, researchers have examined social cohesion and shared expectations (especially among teachers and students); teacher supervision or informal social control; and trust between

teachers, students, principals, and parents (Olweus 1993; Plank et al. 2009; Sapouna 2010; Smith and Birney 2005; Williams and Guerra 2011). Williams and Guerra (2011) found that students who perceived greater collective efficacy in their school reported fewer experiences with bullying later in the academic year, especially when teachers were involved with intervention. Collective efficacy has also been associated with improved school performance among adolescents (Bowen and Bowen 1999).

Collective efficacy, generally considered a macro-level concept, has been shown to improve relationships at the individual level. Drawing from the literature on social control and social disorganization theories, it has been used as the mediating link between social disorganization and levels of crime in a community. However, when discussing the main theories that have been used to explain an individual's fear of victimization, collective efficacy has surprisingly been left out of the conversation. With social disorganization theory, it should follow that collective efficacy attenuates the impact of community disorder on levels of fear. For social integration theory, collective efficacy contributes the notion of "intervention," or informal social control, to the argument, which should further diminish the amount of fear felt by an individual, even with strong societal bonds at play. With victimization theory, as suggested by Welsh (2001), strong bonds and an improved school climate also help to moderate the effects of bullying on a student's fear of victimization. Unfortunately, research has failed to consider the potential that collective efficacy can more succinctly explain a reduction in fear of victimization in schools.

Hypothesis

Prior research has shown that the experience of criminal victimization is one of the strongest predictors of fear of victimization; this relationship also occurs among victims of

bullying in schools. However, while several studies have attempted to analyze fear of victimization among adolescents (Alvarez and Bachman 1997; Astor et al. 2002; Plank et al. 2009; Wallace and May 2005), none have yet accounted for the effects of collective efficacy in the school environment. Students who have been bullied in school may rely on the emotional bonds to their peers or teachers for support in helping them cope with their victimization experience. Additionally, trusting in the ability of the teachers and staff to intervene when a bully returns may help to calm their fears of being bullied again. In contrast, students who are in an environment where they are more socially isolated and less trusting of teachers and school administrators to come to their aid would be much more likely to fear victimization in the future. Figure 1 provides an illustration of the proposed model.

(Figure 1 about here)

Using schools as the focal communities, I examine whether collective efficacy has a negative effect on fear of victimization, and whether the negative relationship between experience of victimization and fear of victimization is moderated by collective efficacy, such that students who are bullied are less likely to be afraid of victimization when they attend schools with higher levels of collective efficacy. Using data collected from middle schools in Philadelphia, PA, I also control for the effects of age, sex, race, and signs of disorder at the school. I use hierarchical linear modeling to account for these effects at both the student and school levels.

METHODS

Data

To test the model, I used data collected in 1993–1994 from middle schools in the Philadelphia School District. Middle schools in this district represent grades 6 through 8, thus

8

including adolescents ages 11 (or younger) to 14 (or older). These data were designed to explore school culture and climate and their effects on school disorder, violence, and academic performance at both the community and school levels. The data used for this study are in four parts. The first part contains data collected from surveys that were administered to the principals of 11 of the 42 middle schools in the district (N=11). These principals were asked questions pertaining to the physical structure of their schools, as well as safety and security measures enforced on campus. Parts 2 through 4 are also based on responses from 11 of the 42 middle schools in the district. Each of the eleven schools surveyed, on average, 45 teachers and 618 students.[1] Part 2 contains teacher responses to the Effective School Battery survey, which asked questions pertaining to the teacher's job satisfaction, training opportunities, and fear of crime at school, for example (N=493). Part 3 includes the students' responses to the Effective School Battery survey, related to their experience at the school and relationships with their teachers and administrators. Part 4 includes the students' responses to questions about victimization and delinquent behavior at school, such as self-reports of theft, drug use, and weapon possession. There were 7,197 students who responded to both parts three and four. This study uses data from the principals and teachers for information obtained at the school level and from parts three and four for information at the student level. Tables 1 and 2 provide the descriptive statistics for each measure created, as described below.

---

[1] The eleven middle schools were selected based on a broad range of "disruption" measures, income levels, and regional representation ("City of Philadelphia"). Teachers and students were sampled within the schools, with a 66.44% response rate and a 65.44% response rate, respectively; no effort was made to match the students who responded to the survey with the teachers who also completed the survey.

Measures

Outcome Variable

Fear of victimization is measured by responses to the Student Victimization Survey. First, the students were asked how often they avoid after-school activities because they are afraid of being threatened or attacked, and they responded on a scale of 0 (never) to 2 (often). Second, the students were asked to respond if they had ever (1=yes, 0=no) done the following out of fear that someone might attack or harm them: stay home from school; cut a class; bring a weapon (i.e. gun, knife, brass knuckles, razor blade, spiked jewelry, mace, other) to school; avoid the locker room, gymnasium, or parking lot; or not report to the principal that someone had attacked them. Responses were combined to create a single variable measuring bullying experiences using polychoric principal components analysis (PCA) in Stata/SE 12. A polychoric correlation matrix was used in the analysis to account for the ordinal structure of the data (see Holgado-Tello et al. 2010). Using this matrix, a confirmatory factor analysis (CFA) then displayed the loadings of each variable for the bullying factor (see Table 1). A mean factor score was saved for each respondent, such that higher values indicate a greater fear of victimization at school. To create a more normal distribution, the square-root values of fear were created to use as the outcome variable in the linear regression model.

Explanatory Variable

Victimization, or bullying, is measured at the individual level, using responses from the Student Victimization Survey, administered to students in the eleven middle schools (N=7,559). Students were asked to respond on a scale from 0 (never) to 2 (often) on how often the following bullying behaviors happened to them while at school in the current school year: the student was hit or pushed, had something stolen from their locker or desk, had something directly taken from

them by force, was threatened, was cursed at, threatened or attacked coming to school, and threatened or attacked going home from school. These responses were combined using polychoric PCA and CFA. The factor loadings for each variable are also available in Table 1. A mean factor score was saved for each student respondent. These scores range from 0 to 2.47, with a higher value indicating greater victimization from bullying.

(Table 1 about here)

Moderating Variable

Collective efficacy is measured at the school level, based on the responses of the principals (N=11) and teachers (N=493) of the surveyed middle schools. This concept is measured at the school level, rather than the student level, because teachers and principals are more involved with the structure of the school as a community, and therefore have a better perception of the cohesiveness of the school as a whole and of the school's willingness to intervene at the sign of trouble. Additionally, teachers are the connective tissue between the learning environment and the students, where they stand to influence both directly. In the survey, teachers were asked a variety of questions about the level of social cohesion among the different groups involved with the school. First, cohesion among different groups in the school is measured on a scale of 1 to 3 (1=not well, 3=very well) concerning how well the following groups get along: students of different races, students of different nationalities, and teachers and administrators. These responses were combined using polychoric PCA and CFA. The mean factor scores were then saved and aggregated to the school level using the school identifier.

Second, teachers were asked to elaborate whether the teachers and administrators worked well together. Where 0=false and 1=true, they reported that administrators and teachers collaborate toward making the school run effectively, there is little administrator-teacher tension

11

in this school, teachers feel free to communicate with the principal, and it is hard to change

established procedures here (reverse-coded). These responses were also combined using

polychoric PCA and CFA. The mean factor scores were also saved and aggregated to the school

level using the school identifier.

Third, the principals reported on "willingness to intervene" by indicating which groups

were used by the school for security purposes; a variable was created to indicate total number of

groups used. Groups may have included administrators and/or faculty members, security guard(s)

employed by school or district, police on a regular patrol outside the school, police stationed in

school, students from the school as monitors, parents as monitors or security guards, and

janitor(s) as watchmen. The principals were also asked if each group had been dependable when

used for security purposes (1=yes, 0=no). The mean score was taken by dividing the total

number of dependable groups by the total number of groups. This measure was then

disaggregated by the school identifier to merge with the teacher data.

Control Variables

Descriptive statistics for the control variables at the school and student levels are

available in Table 2. Signs of disorder in the school are measured by the principals' responses to

questions about the physical structure and care taken of the school, as well as the prevalence of

social disorder.[2] Physical disorder is determined by the condition of the building (1=excellent,

5=poor); how long it usually takes for broken windows to be replaced (1=less than one week,

4=more than one month); and how frequently the school itself has been a victim of theft, graffiti,

and vandalism (0=never, 2=frequently). These variables were combined based on a Cronbach's

---

[2] Signs of disorder were not measured using polychoric PCA and CFA due to the limited variability in responses
from the eleven schools in the sample.

alpha scale (α=0.739) that used the standardized mean score to create a single measure for signs of physical disorder in the school. Levels of physical disorder ranged from -1.215 to 0.982, with higher values indicating more evidence of physical disorder in the school.

(Table 2 about here)

Social disorder is measured by how frequently (0=never, 4=often) misbehavior occurs in public school places, such as the cafeteria, gymnasium, and auditorium. These variables were also combined based on a Cronbach's alpha scale (α=0.627) that used the standardized mean score to create a single measure for signs of social disorder in the school. Levels of social disorder ranged from -1.164 to 1.438, where higher values indicate more evidence of social disorder in the school.

At the individual level, basic demographic variables are measured via responses to the Effective School Battery Student Survey. Sex is coded such that 1=male and 0=female; approximately 50.6% of the students are male. Age ranges from 11 years or younger to 14 years or older (median age=12 years old). Dummy variables are created to represent four separate racial/ethnic groups: Black (46.2%), White (21.3%), Spanish-American (16.4%), and other race/ethnicity (14.7%).

Analysis

I examine this relationship with a two-level linear regression model, due to the multiple levels of analyses (school and student) present in the data and the continuous nature of the outcome variable. Before estimating the hypothesized model, I first computed the intraclass correlation coefficient (ICC) and consequently the design effect for the outcome variable to test that there was enough variability between schools to justify a multilevel analysis. The ICC value was 0.011, which indicated that 1.1% of variability in fear of victimization is between schools. I

13

then used the ICC to compute the value of the design effect, 7.39, which is greater than the benchmark value of 2 for multilevel analysis. Therefore, it is appropriate to continue with the study of students and schools as two separate levels of analysis.

The explanatory and outcome variables, bullying and fear of victimization, are measured at the student level; the moderating variable, collective efficacy, is measured at the school level, implying a cross-level interaction. The following equations are used to predict fear of victimization (Y_{ij}):

$$Y_{ij} = \beta_{0j} + \beta_{1j}X_{ij} + \beta_{2j}X_{ij} + \beta_{3j}X_{ij} + \beta_{4j}X_{ij} + e_{ij}, \text{ such that}$$

$$\beta_{0j} = \gamma_{00} + \gamma_{01}Z_j + \gamma_{02}Z_j + \gamma_{03}Z_j + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}Z_j + u_{1j}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

$$\beta_{4j} = \gamma_{40}$$

where β_{0j} represents the intercept and the school-level variables (collective efficacy [$\gamma_{01}Z_j$], physical disorder [$\gamma_{02}Z_j$], social disorder [$\gamma_{03}Z_j$]) and their direct effects on fear of victimization; β_{1j} represents the random slope of the association between bullying victimization, moderated by collective efficacy; β_{2j} represents sex as a control variable; β_{3j} represents age as a control variable; and β_{4j} represents race/ethnicity as a control variable, with the control variables showing a direct relationship with fear of victimization. Random effects include u_{0j}, which represents the random intercept in the model, u_{1j}, which accounts for the random slope in bullying, and e_{ij}, which represents the error term for the model.

In the first model, I examine only the direct effects of bullying and collective efficacy on fear of victimization. In the second model, I also include a variable testing the interaction

between collective efficacy and bullying to the variables in the first model. In the third and final model, I include the control variables at the school level (signs of physical and social disorder) and the individual level (sex, race, and age) to determine if they account for any portion of the association between bullying, collective efficacy and victimization. Figure 2 provides an illustration of the full and final model.

(Figure 2 about here)

Students that were missing a unique identifier (approximately 4.8%) or that were missing on all responses for the fear of victimization measure (approximately 5.5%) were excluded from the model (N=6,800). Of the remaining students in the analysis, 832 were missing responses on various questions related to fear and bullying, and 13 students had not reported their age. Upon further examination, these students did not share any particular demographic characteristics (i.e. race/ethnicity, sex, and grade level) and were found to be missing at random. Missing data was thereby accounted for using multiple imputation (see Baraldi and Enders 2010). With this technique, twenty additional data sets were created, each with unique imputed values; the analysis was carried out on each imputed data set as though the data are complete. Each regression produced different parameter estimates and standard errors, which were then combined into a single set of results. These findings were also compared to an analysis where missing data was removed listwise, and the results were comparable.

RESULTS

The first model tested the direct fixed effects of bullying and of collective efficacy on fear of victimization. As is consistent with victimization theory, bullying victimization and fear of victimization are positively related. Statistically adjusting for collective efficacy, we expect to see a 0.334 increase in the square-root of fear of victimization for every unit increase in

15

victimization through bullying ($p<0.001$). That is, as a student's experiences with bullying increase, so does that student's likelihood of fearing future victimization. Also consistent with past research, collective efficacy and fear of victimization are negatively related. When statistically adjusting for bullying, we expect there to be a 0.059 decrease in the square-root of fear of victimization for every unit increase in collective efficacy ($p<0.05$). In other words, as a student's experiences with collective efficacy increase, his or her likelihood of fear of victimization decreases. Since bullying and collective efficacy are on a similar standardized scale, it appears as though experience with bullying victimization has the largest impact on an adolescent's increased fear of victimization, but collective efficacy at the school level also affects the level of fear among students. Additionally, this model controlled for the random effect of bullying, suggesting that levels of bullying varied between schools as well as within schools. The chi-square test after the model showed that this effect was positive and statistically significant when controlling for collective efficacy ($p<0.001$).

The second model accounted for the potential moderating effect of collective efficacy on the relationship between bullying and fear of victimization. Controlling for this effect and the direct effect of collective efficacy, the impact of bullying is smaller, but still remains strong and positively associated with fear of victimization. We now expect a 0.286 increase in the square-root of fear of victimization for every unit increase in bullying victimization ($p<0.001$). Again, as a student's experiences with bullying increase, his or her fear of victimization also increases. When controlling for bullying and the moderating effect of collective efficacy, the direct association of collective efficacy on fear of victimization remains negative and statistically significant. We expect a 0.064 decrease in the square-root of fear of victimization for every unit increase in collective efficacy ($p<0.05$). Similarly, a student's likelihood of fear of victimization

16

decreases when the student has greater exposure to collective efficacy in his or her school. Contrary to the hypothesis, however, the moderating effect of collective efficacy, while positive, is not statistically significant. This shows that, within schools, bullying and collective efficacy play a vital role in predicting the level of fear of victimization among the students. However, collective efficacy does not influence the relationship between experiencing bullying and fear of victimization. The chi-square test for this model, in agreement with the previous model, showed that the random effect of bullying was positive and statistically significant ($p<0.001$). This indicated that bullying continues to differ between schools, even when controlling for the direct and moderating effects of collective efficacy.

The third and final model includes the variables in the previous two models and adds the control variables at the school and student levels. The relationship between bullying and fear of victimization was similar to the previous two models. Adjusting for the direct and moderating effects of collective efficacy and the control variables, we expect a 0.283 increase in the square-root of fear of victimization for every unit increase in bullying victimization ($p<0.001$). The direct effect of collective efficacy, while smaller in the third model than in the previous two models, remains statistically significant and negatively associated with fear of victimization. Adjusting for bullying, the moderating effect of collective efficacy, and the control variables, we expect that a 0.050 decrease in the square-root of fear of victimization for every unit increase in collective efficacy ($p<0.05$). Again, we see that even with these added school- and student-level controls, bullying and collective efficacy are additive effects in predicting fear of victimization among adolescents, but collective efficacy does not affect the relationship between bullying and fear of victimization. Once again, the chi-square test for the model showed that even after

17

controlling for these other effects, the random effect of bullying was positive and statistically significant, indicating that the effect differs between schools ($p<0.001$).

Additionally, the relationship between race/ethnicity and fear of victimization was also statistically significant. Statistically adjusting for bullying, the direct and moderating effects of collective efficacy, signs of disorder in the school, age, and sex, the model indicates a 0.036 increase in the square-root of fear of victimization for Spanish-American students compared to white students ($p<0.01$), as well as a 0.029 increase in the square-root of fear of victimization for students of another race compared to white students ($p<0.01$). However, there was no significant difference in predicting fear of victimization among Black students compared to white students. The moderating effect of collective efficacy, signs of social and physical disorder, sex, and age were not statistically significant in predicting the rate of fear of victimization. This implies that levels of fear of victimization for white students only differ from those who are Spanish-American and those that are of another, non-Black ethnic group.

Additionally, it shows that there is no statistically significant difference between students in schools with many signs of disorder versus fewer signs of disorder, between males and females, and between younger students versus older students. Due to the limited number of middle schools sampled, it is likely that there was not enough variation between the schools to yield significant predictors for disorder, gender, and age (especially with a limited age range in middle schools).

DISCUSSION

Fear of being victimized in schools has been declining in recent years; however, it still remains a prevalent problem among adolescents. Three main theories have been used to predict this fear in past literature, but little research has examined this concept in schools. This study

proposed a more efficient way to predict fear of victimization: first, by utilizing the dual-nature of collective efficacy to incorporate social integration and social disorganization theories; and second, by using collective efficacy in combination with the prevalence of bullying to incorporate victimization theory. I proposed that not only does experience with bullying and collective efficacy have a direct effect on fear of victimization, but also that collective efficacy moderates the relationship between bullying and fear of victimization. A multi-level analysis provided the opportunity to explore these explanations at both macro- (collective efficacy in schools) and micro-levels (experienced bullying among individual students).

In support of victimization theory, bullying victimization was shown to have a consistent direct, and positive association with fear, indicating that the more experience students have with being bullied, the more likely they are to be afraid of future victimization (Astor et al. 2002; Wallace and May 2005). The analysis also showed that while the occurrence of bullying varied between schools, the effect maintained statistical significance in positively predicting fear of victimization. This finding adds to previous research that bullying and fear are directly related. School policymakers should consider this relationship when trying to make their students feel safe at school. Improving efforts to reduce bullying in school is the most effective way to reduce levels of fear among the students. While it may not be realistic to eliminate bullying schools altogether, future research should examine how programs focusing on building social cohesion and trust may influence the rate of bullying schools. This may be done by examining how the relationship between collective efficacy and fear of victimization is mediated by bullying at the school level.

Additionally, collective efficacy was shown to have a negative and significant effect on fear of victimization, as is consistent with social integration theory and social disorganization

theory (Akiba 2010; Plank et al. 2009). This suggests that the more a school is able to provide a socially cohesive environment and reliably intervene when a security problem arose, the less likely the students at the school will fear victimization. This finding also suggests that feeling bonded to a school community and seeing that the community has social control over its environment will help to reduce fear among the students. Alternatively, the more students are aware of their schools' security measures and trust in their effectiveness, the more likely the students will feel safe at school. This is consistent with the notion that collective efficacy at the macro-level attenuates individual-level fear of crime among community residents (Browning and Erickson 2009; Sampson et al. 1997). To incorporate this finding, school administrators should promote activities that encourage bonding among the students and staff at school. School policymakers should also encourage teachers and administrators to participate in training and exercises that increase reliability in security protocol and patrol at the school. Additionally, future research should examine how micro-level measures of collective efficacy (i.e. a student's perception of collective efficacy in the school) affect an individual's levels of fear, in addition to testing the potential moderating effect of student-perceived collective efficacy.

Contrary to the hypothesis, however, the analysis showed that collective efficacy does not moderate the relationship between bullying and fear; that is, collective efficacy and experience with bullying independently influence fear of victimization among adolescents in school. Another interpretation of this finding suggests that collective efficacy may reduce fear uniformly for students, whether or not they had been bullied in the past. This is an important finding for school policymakers, as it shows that improving social control and social cohesion in schools will help to reduce fear in the school for all students equally. While it may not help reduce fear particularly among those who have been bullied, benefitting all students equally by reducing fear

is a notable policy goal that may improve learning; reduce anxiety, stress, and truancy among students; and improve the life-course outcomes (Akiba 2010; Batsche and Knoff 1994; Bowen and Bowen 1999). Future research should explore alternative potential modifiers of the relationships between bullying and fear, as well as between collective efficacy and fear, to determine if these effects on fear exist equally among all students in any scenario.

There were several limitations in the data that would not allow for an optimal test of the hypothesis. First, the data were collected in middle schools in several school districts in Philadelphia, PA, and while the city allowed for an oversampling of ethnic minorities and schools with higher levels of disorder, the results are difficult to generalize to a broader population of students. Future studies should examine the relationship between fear, collective efficacy, and bullying across a nationally representative sample from a broader variety of grades. In particular, future research should allow for middle and high schools to be included in the analysis to fully capture the adolescent experience.

Second, as with prior research, the data does not provide multiple measures for the dual-nature of collective efficacy. It is common for surveys to ask respondents questions related to social cohesion, but few ask about the community's "willingness to intervene for the common good." In the future, researchers should collect data that appeals to both aspects of collective efficacy to more accurately measure the concept.

Third, the data were collected between 1993 and 1994. While this allowed for the theory to be tested, it is difficult to know whether the results apply to contemporary school environments. Researchers should consider these concepts when collecting current data so that the study might be replicated in today's environment. Additionally, longitudinal data would

provide a clearer picture of how the relationships between bullying, collective efficacy, and fear operate over time.

CONCLUSION

This study examines the associations among bullying, collective efficacy, and fear of victimization in middle schools. Although several studies have examined these variables, few, if any, have considered whether collective efficacy affects the well-established association between bullying and fear. The results do not support the hypothesis that collective efficacy at the school-level attenuates this association. However, collective efficacy does have a direct, negative effect on fear of victimization. This has important policy implications since improving the community spirit and security of schools not only reduces fear, but it also benefits student learning and improves the chances of success over the life course.

REFERENCES

Abada, Teresa, Feng Hou, and Bali Ram. 2008. "The Effects of Harassment and Victimization
on Self-rated Health and Mental Health among Canadian Adolescents." *Social Science & Medicine* 67:557-567.

Adams, Richard E., and Richard T. Serpe. 2000. "Social Integration, Fear of Crime, and Life
Satisfaction." *Sociological Perspective* 43(4):605-629.

Addington, Lynn A. 2003. "Students' Fear after Columbine: Findings from a Randomized
Experiment." *Journal of Quantitative Criminology* 19(4):367-387.

Akiba, Motoko. 2008. "Predictors of Student Fear of School Violence: A Comparative Study of
Eighth Graders in 33 Countries." *School Effectiveness and School Improvement* 19(1):51-
72.

------. 2010. "What Predicts Fear of School Violence Among U.S. Adolescents?" *Teachers
College Record* 112(1):68-102.

Alvarez, Alex and Ronet Bachman. 1997. "Predicting the Fear of Assault at School and While
Going to and from School in an Adolescent Population." *Violence and Victims* 12(1):69-
85.

Astor, Ron Avi, Rami Benbenishty, Anat Zeira, and Amiram Vinokur. 2002. "School Climate,
Observed Risky Behaviors, and Victimization as Predictors of High Schools Students'
Fear and Judgments of School Violence as a Problem." *Health Education & Behavior*
29(6):716-736.

Baraldi, Amanda N. and Craig K. Enders. 2010. "An Introduction to Modern Missing Data
Analyses." *Journal of Schools Psychology* 48:5-37.

Batsche, George M. and Howard M. Knoff. 1994. "Bullies and Their Victims: Understanding a

    Pervasive Problem in the Schools." *School Psychological Review* 23(2):165-174.

Bowen, Natasha K. and Gary L. Bowen. 1999. "Effects of Crime and Violence in

    Neighborhoods and Schools on the School Behavior and Performance of Adolescents."

    Journal of Adolescent Research 14(3):319-342.

Bradshaw, Catherine P., Anne L. Sawyer, and Lindsey M. O'Brennan. 2009. "A Social

    Disorganization Perspective on Bullying-Related Attitudes and Behaviors: The Influence

    of School Context." *American Journal of Community Psychology* 43:204-220.

Browning, Sarah and Patricia Erickson. 2009. "Neighborhood Disadvantage, Alcohol Use, and

    Violent Victimization." *Youth Violence and Juvenile Justice* 7(4):331-349.

Dinkes, Rachel, Jana Kemp, and Katrina Baum. 2009. "Indicators of School Crime and Safety:

    2009." Edited by National Center for Education Statistics Institute of Education Sciences,

    U.S. Department of Education and Bureau of Justice Statistics Office of Justice Programs,

    U.S. Department of Justice. Washington, D.C.

Dolan, Paul and Tessa Peasgood. 2007. "Estimating the Economic and Social Costs of the Fear

    of Crime." *British Journal of Criminology* 47:121-132.

Farrall, Stephen and David Gadd. 2004. "Research Note: The Frequency of the Fear of Crime."

    British Journal of Criminology 44:127-132.

Finnegan, Regina A., Ernest V. E. Hodges, and David G. Perry. 1998. "Victimization by Peers:

    Associations with Children's Reports of Mother-Child Interaction." *Journal of*

    Personality and Social Psychology 75(4):1076-1086.

Franklin, Travis W., Cortney A. Frankling, and Noelle E. Fearn. 2008. "A Multilevel Analysis of the Vulnerability, Disorder, and Social Integration Models of Fear of Crime." *Social Justice Research* 21:204-227.

Goldstein, Sara E., Amy Young, and Carol Boyd. 2008. "Relational Aggression at School: Associations with School Safety and Social Climate." *Journal of Youth and Adolescence* 37:641-654.

Hale, C. 1996. "Fear of Crime: A Review of the Literature." *International Review of Victimology* 4:79-150.

Hernández, Teodoro. 2009. "A Socio-Ecological Perspective on Bullying: A New Synthesis." *Revista Internacional de Sociología* 67(3):631-654.

Holgado-Tello, Francisco P., Salvador Chacón-Moscoso, Isabel Barbero-García, and Enrique Vila-Abad. 2010. "Polychoric Versus Pearson Correlations in Exploratory and Confirmatory Factor Analysis of Ordinal Variables." *Quality and Quantity* 44(1):153-166.

Jackson, Jonathan and Emily Gray. 2010. "Functional Fear and Public Insecurities About Crime." *British Journal of Criminology* 50:1-22.

Kirk, David S. and Mauri Matsuda. 2011. "Legal Cynicism, Collective Efficacy, and the Ecology of Arrest." *Criminology* 49(2):443-472.

Limbos, Mary Ann and Carri Casteel. 2008. "Schools and Neighborhoods: Organizational and Environmental Factors Associated with Crime in Secondary Schools." *Journal of School Health* 78(10):539-544.

May, David C. and R. Gregory Dunaway. 2000. "Predictors of Fear of Criminal Victimization at School Among Adolescents." *Sociological Spectrum* 20(2):149-168.

Morrison, Brenda. 2002. "Bullying and Victimization in Schools: A Restorative Justice

  Approach." *Australian Institute of Criminology: Trends & Issues in Crime and Criminal*

  Justice 219:1-6.

Olweus, Dan. 1993. *Bullying at School: What We Know and What We Can Do*. Oxford:

  Blackwell Publishers.

Ousey, Graham C., Pamela Wilcox, and Sara Brummel. 2008. "Déjà vu All Over Again:

  Investigating Temporal Continuity of Adolescent Victimization." *Journal of Quantitative*

  Criminology 24:307-335.

Payne, Allison Ann, Denise C. Gottfredson, and Gary D. Gottfredson. 2003. "Schools as

  Communities: The Relationships among Communal School Organization, Student

  Bonding, and School Disorder." *Criminology* 41(3):749-778.

Plank, Stephen B., Catherine P. Bradshaw, and Hollie Young. 2009. "An Application of

  'Broken-Windows' and Related Theories to the Study of Disorder, Fear, and Collective

  Efficacy in Schools." *American Journal of Education* 115(2):227-247.

Sacco, Vincent F. and M. Reza Nakhaie. 2007. "Fear of School Violence and the Ameliorative

  Effects of Student Capital." *Journal of School Violence* 6(1):3-25.

Sampson, Robert J. 1999. "Systematic Social Observation of Public Spaces: A New Look at

  Disorder in Urban Neighborhoods." *The American Journal of Sociology* 105(3):603-51.

Sampson, Robert J. and Stephen W. Raudenbush. 2004. "Seeing Disorder: Neighborhood Stigma

  and the Social Construction of 'Broken Windows'." *Social Psychology Quarterly* 67:319-

  42.

Sampson, Robert J., Stephen W. Raudenbush, and Felton Earls. 1997. "Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy." *Science*, August 15, 277:918-924.

Sapouna, Maria. 2010. "Collective Efficacy in the School Context: Does It Help Explain Victimization and Bullying Among Greek Primary and Secondary School Students?" *Journal of Interpersonal Violence* 25(10):1912-1927.

Scholte, Ron H. J., Geertjan Overbeek, Giovanni ten Brink, Els Rommes, Raymond A. T. de Kemp, Luc Goossens, and Rutger C. M. E. Engels. 2008. "The Significance of Reciprocal and Unilateral Friendships for Peer Victimization in Adolescence." *Journal of Youth and Adolescence* 38:89-100.

Shaw, Clifford R. and Henry D. McKay. 1942. *Juvenile Delinquency in Urban Areas: A Study of Rates of Delinquents in Relation to Differential Characteristics of Local Communities in American Cities*. Chicago, IL: University of Chicago Press.

Skogan, Wesley G. 1995. "Crime and the Racial Fears of White Americans." *Annals of the American Academy of Political and Social Science* 539:59-71.

Slee, Phillip T. 1994. "Situational and Interpersonal Correlates of Anxiety Associated with Peer Victimization." *Child Psychiatry & Human Development* 25(2):97-107.

Smith, Page A. and Larry L. Birney. 2005. "The Organizational Trust of Elementary Schools and Dimensions of Student Bullying." *International Journal of Education Management* 19(6):469-485.

Stafford, Mai, Tarani Chandola, and Michael Marmot. 2007. "Association between Fear of Crime and Mental Health and Physical Functioning." *American Journal of Public Health* 97(11):2076-2081.

Storch, Eric A. and Carrie Masia-Warner. 2004. "The Relationship of Peer Victimization to

    Social Anxiety and Loneliness in Adolescent Females." *Journal of Adolescence*

    27(3):351-362.

Storch, Eric A., Deborah A. Roth, Meredith E. Coles, Richard G. Heimberg, Erica A. Bravata,

    and Jason Moser. 2004. "The Measurement and Impact of Childhood Teasing in a

    Sample of Young Adults." *Journal of Anxiety Disorders* 18(5):681-694.

Van Dorn, Richard A. 2004. "Correlates of Violent and Nonviolent Victimization in a Sample of

    Public High School Students." *Violence and Victims* 19(3):303-320.

Wallace, Lisa Hutchinson and David C. May. 2005. "The Impact of Parental Attachment and

    Feelings of Isolation on Adolescent Fear of Crime at School." *Adolescence* 40(159):457-

    474.

Welsh, Wayne N. 2001. "Effects of Student and School Factors on Five Measures of School

    Disorder." *Justice Quarterly* 18(4):911-947.

Williams, Kirk R. and Nancy G. Guerra. 2011. "Perceptions of Collective Efficacy and Bullying

    Perpetration in Schools." *Social Problems* 58(1):126-143.

Table 1. Measurement Models for the Explanatory, Mediating, and Outcome Variables, N(6,800)

Variable	Standardized factor loading	% variance explained*
Collective Efficacy – Level 2		54.62%
Students of different races get along	0.503	
Students of different nationalities get along	0.533	
Teachers and administrators get along	0.814	
Administrators and teachers collaborate	0.822	
Little administrator-teacher tension	0.790	
Teachers feel free to communicate with principal	0.828	
Administration supports teachers	0.873	
Dependable security	0.375	
Fear of Victimization – Level 1		51.93%
Avoid after-school activities for fear of attack/harm	0.609	
Stay home for fear of attack/harm	0.709	
Cut class for fear of attack/harm	0.700	
Bring weapon for fear of attack/harm	0.474	
Avoid locker room for fear of attack/harm	0.841	
Avoid gymnasium for fear of attack/harm	0.802	
Avoid parking lot for fear of attack/harm	0.745	
Afraid to report an attack to principal	0.436	
Bullying Victimization – Level 1		53.09%
Hit or pushed	0.626	
Something taken from locker/desk	0.512	
Something taken directly from student by force/threat	0.745	
Threatened at school	0.744	
Cursed at student at school	0.497	
Threatened/attacked coming to school	0.773	
Threatened/attached going home from school	0.765	

*Percent of variance explained by the latent variable is based on a polychoric principal components analysis

Source: School Culture, Climate, and Violence: Safety in Middle Schools of the Philadelphia Public School System, 1990-1994

Table 2. Descriptive Statistics for Control Variables, N(6,800)

Variable	Range	Mean	St. Dev.
Level 2			
Social Disorder	-1.164 to 1.438	-0.002	0.797
Physical Disorder	-1.215 to 0.982	-0.039	0.698
Level 1			
Sex	1=Male, 0=Female	0.499	0.500
Age	11 years (or younger) to 14 years (or older)	2.084	0.956
Race/ethnicity			
Black		0.466	0.499
White		0.216	0.412
Spanish-American		0.161	0.368
Other race		0.146	0.353

Source: School Culture, Climate, and Violence: Safety in Middle Schools of the Philadelphia

School System, 1990-1994

Table 3. Regression Coefficients for HLM Regression Predicting Fear of Victimization, N(6,800)

Variable	Model 1 Coefficient	Model 1 Std. Error	Model 2 Coefficient	Model 2 Std. Error	Model 3 Coefficient	Model 3 Std. Error
Fixed Effects						
Bullying	0.334***	0.012	0.286***	0.061	0.283***	0.060
Collective Efficacy	-0.059*	0.025	-0.064*	0.026	-0.050*	0.023
Bullying * Collective Efficacy			0.033	0.040	0.033	0.039
Social Disorder					0.002	0.010
Physical Disorder					0.012	0.010
Sex					0.005	0.006
Age					0.000	0.003
Black					-0.012	0.009
Spanish-American					0.036**	0.012
Other race					0.029**	0.011
Constant	0.192***	0.038	0.200***	0.039	0.173***	0.037
Random Effects						
Bullying	0.031***	0.010	0.030***	0.010	0.029***	0.009
Constant	0.021***	0.006	0.021***	0.006	0.010***	0.007
Residual	0.246***	0.002	0.246***	0.002	0.246***	0.002

***$p<0.001$, **$p<0.01$, *$p<0.05$

Source: School Culture, Climate, and Violence: Safety in Middle Schools of the Philadelphia School System, 1990-1994
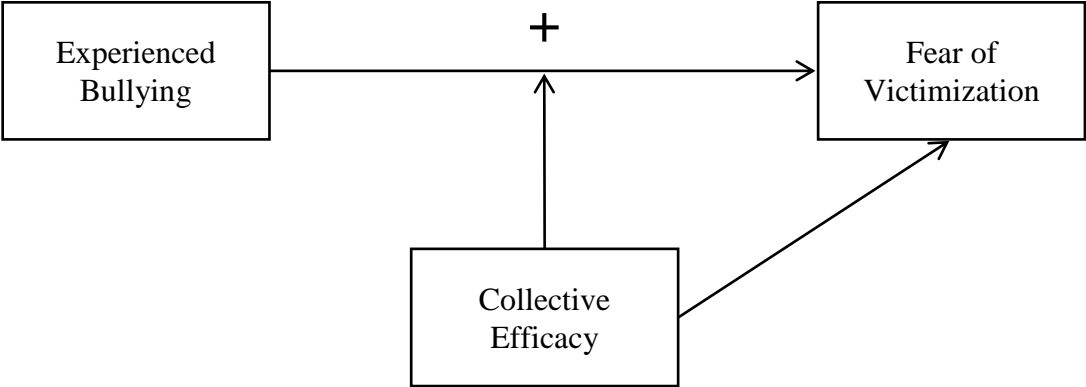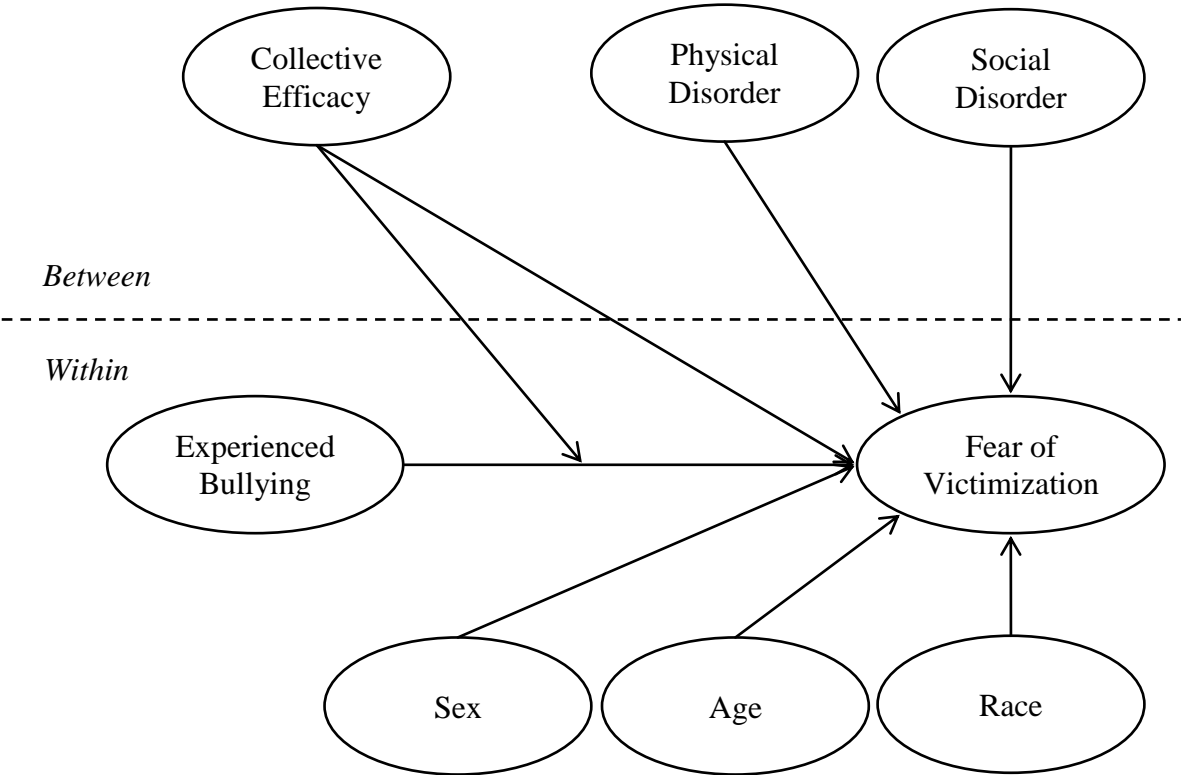
Figure 1. Theoretical Model

Figure 2. Analytical Model

Figure 3. Full Model Coefficients