DISPARITIES IN SCHOOL RESOURCES, RESOURCE ALLOCATION, AND RISK OF PHYSICAL ASSAULT AGAINST PUBLIC SCHOOL EDUCATORS IN MINNESOTA

A DISSERTATION
SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL
OF THE UNIVERSITY OF MINNESOTA
BY

STARR KELLY SAGE

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

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AUGUST 2008

ACKNOWLEDGMENTS

The National Institute for Occupational Health and Safety (NIOSH) provided support, in part, for this effort (RO1 OH007816). In addition, support was also provided, in part, by the Regional Injury Prevention Research Center and Center for Violence Prevention and Control. Over the course of my doctoral program, I was provided with financial support, in the form of fellowships and scholarships, from the: Interdisciplinary Center for the Study of Global Change (funded by the MacArthur Foundation); William Randolph Hearst Foundation; The Nancy A. Robertson Endowed Graduate Fellowship in Injury Prevention; Minnesota Environmental Health Association; and Division of Environmental Health Sciences (EnHS). Each of these generous contributions supported my ability to focus on my long term goal of completing this project in a timely manner. Thank you for believing in me, as well as in the significance of my dissertation research project.

I owe a sincere debt of gratitude to each of my dissertation committee members. Professor Susan Gerberich: I thank you for going above and beyond what was expected of an advisor. You have always kept in mind what was best for my long term development. In addition, I thank you for actively engaging me in each stage of the research process. I could not have worked with a more committed, supportive, thoughtful advisor. I am also grateful to my other dedicated and insightful committee members: Professors Bruce Alexander, Timothy Church, Nancy Nachreiner, and Rhonda Jones-Webb.

Several members of the Division of EnHS also helped to make my experience in this program deeply rewarding. I am thankful to Professor Bill Toscano, Kathy Soupir, Karen Brademeyer, and Debb Grove for contributing to my successes. In addition, Rick ("Rick-i-pedia") Hoffbeck: your computer programming skills, sense of humor, and words of wisdom helped me to stay the course until the end. Andy Ryan, your statistical expertise, thoughtful guidance, and continued encouragement made the exploration of my research questions possible.

Over the course of my student life, I have been influenced by many educators. My interest in science was first piqued by my fifth grade teacher, Mr. Allen Muenzhuber, who took a genuine interest in cultivating my budding scientific interest. A few years later, Dr. John Schultz also encouraged me to begin to explore and understand the scientific method. I am indebted to both of you, as your wholehearted belief in my abilities gave me the confidence I needed to ultimately pursue an academic career in the sciences.

Several colleagues and classmates have made this long journey more enjoyable than it might have otherwise been without them. Much appreciation is owed to Mr. Rickey Hall who, even after his departure from the School of Public Health (SPH), has continued to inspire and support me. I'd also like to thank the members of the SPH Student Services Center staff, as each of you were readily available to provide much needed information and answer pressing questions. Drs. Mira Grice and Kathleen Ferguson Carlson: I have greatly appreciated your continued willingness to support those of us just behind you. You were always willing to help make the process easier for those of us who followed in your footsteps! Thank you! Kathy Koehler Raleigh, Chamika Hawkins-Taylor, Yolanda

Archibald, and Dr. Quintin Williams: I thank you for your willingness to lend an ear and a word of advice.

There are several other influential mentors and supporters from across the University of Minnesota and beyond to whom I am most thankful. These individuals include: Dr. Rusty Barceló, Sue Hancock, Tony Diggs, Patricia Jones-Whyte, Dr. Carlota Medus, Dr. Val Woodward, Dr. Sally Jorgenson, Amy Porter, Dr. Lisa Anderson Levy, Dr. Char Voight, Dr. Allen Issacman, Dr. Rose Brewer, Mary Tate, Dr. Noro Andriamanalina, Annette Kavanaugh, Greg Ruffa, Dr. Frank Hunte, and Hawona Sullivan Janzen. Each of you has supported me and contributed to my successes during the years since I began my studies at this institution. I am also grateful to the members of the Minnesota Association of Black Women in Higher Education (ABWHE), as the knowing words of encouragement I have received from each of you in the last year have been most valuable.

The constant support of friends and family has made the long journey through graduate school seem less arduous. To the close friends I have known and loved as family, I thank you for sticking through it with me. Ashley Shelby Benites: your brilliance and seemingly effortless ability to write beautifully has served to inspire me in my own little writing endeavor. Also, your tireless commitment to getting the science right, in turn, drove me to get my own science "right." Our friendship has served as an outlet to maintaining a level head through it all. *Kidz*?!? Heidi Lund, I cannot thank you enough for always being my "BFF." The many years of support and friendship from you have meant the world to me. Simanique Moody, we started this journey together, and I expect *both* of us to get out alive! Dr. Tiffany Davis, you have never failed to remind me

that we do this *all* in the name of the ancestors. I cannot thank you enough for helping me to keep it all in perspective. I believe it is safe to say, we have *finally* made Harriet proud! I'm grateful for your ever present encouragement – even in the darkest hour – which truly helped me to see the light at the end of the tunnel. Now, let *us* begin the Freedom Tour …

Griffin Sage – *yes*, your "favorite Auntie" has *finally* finished her book! I promise there will be no more missed soccer or football games because Auntie is busy furiously writing her chapters! To my sister, Dena Sage, I thank you for always being there and believing in my desire to pursue a Ph.D.! Support from you and Griffin has served as great motivator to see this through to the end, and I look forward to seeing you cross the graduation stage next! My grandparents, Harlan and Jeanette Appelquist, have shaped me in ways that I've only recently come to realize. Though they are no longer with me, I know they continue to guide and watch over me.

To my mother, Adora Sage, you have always been my strongest advocate, and your encouragement, support, and love for me has been unfailing. Quite simply, I am the person I am today because you have always been there to show me the way. In addition to the many gifts you have given me, you taught me to write in my own voice. You are my rock and I could not have done all of this without you. I did this, in part, to make you proud!

DEDICATION

For my mother.

With your support *all* dreams seem possible.

ORGANIZATION

The organization of this thesis provides initial chapters, including an introduction, as well as a comprehensive literature review and presentation of the research design and methodology. These chapters are followed by two major papers (Chapters 4 and 5) that report the major findings from the study; the papers are prepared for publication in peer-reviewed journals, thus, there is some redundancy pertinent to both the literature cited and methods presented. The final chapter provides a discussion of the potential implications of the study results, as well as the study validity and sensitivity analyses.

ABSTRACT

In the United States, those in the teaching profession have the fourth highest non-fatal violent victimization rate in the workplace. Educators working in schools commonly experience non-fatal, student-perpetrated school violence as work-related physical assault. These educators often also work in school environments which lack sufficient school resources. To investigate the relation between disparities in school resource levels, school resource allocations, and risk of physical assault (PA), a case-control study was conducted from the Minnesota Educators' Study (MES). In an effort to more thoroughly address the work-related violence research questions, school-level fiscal and demographic data from the Minnesota Department of Education (MDE) were utilized to complement the self-reported MES survey data.

The MES examined a randomly selected cohort of state-licensed Kindergarten through grade 12 (K-12) employed educators. From mailed questionnaires, response rates for both Phase I (comprehensive study on violent events and consequences) and Phase II (case-control study of risk for physical assault) were 84%. Cases experienced a work-related PA event in the previous 12 months; controls reported no assaults. The PA rate for educators was a minimum of 8.3 per 100 persons per year. Exposure data, including questions regarding perceived school resource levels, were collected for cases (month prior to event) and non-injured controls (randomly selected months). Based on the school in which they worked the most time, and available MDE school-level fiscal and demographic data, together with MES questionnaire data, analyses were conducted on 238 cases and 640 controls.

Initially, annual per student expenditure was utilized as the measure of schools' resource levels. Average per student expenditures for cases and controls were $9,204 (S.D. = $2621) and $8,686 (S.D. = $2155), respectively, and were higher in urban than either rural or suburban schools. Multivariate analyses using directed acyclic graphs (DAGs) to guide selection of confounders, suggested that increased spending (i.e., highest versus lowest quartile) was associated with decreased risk of physical assault (OR=0.82, 95% CI: 0.41, 1.62), although not statistically important. In considering the allocation of school resources (i.e., expenditures) to specific areas, an allocation greater than 5%, versus less than 0.04% of the total annual per student expenditure to student activities programming, was associated with a decreased risk of physical assault (OR=0.30, 95% CI: 0.12, 0.77).

In measuring school resource levels by educators' self-reported perceptions, multivariate regression analyses suggested that educators who reported that they lacked resources, to provide the necessary teaching tools and supplies for their students, experienced increased risk of PA (OR 1.70, 95% CI: 1.10-2.64). Participants were also asked about sufficiency of several specific types of school resources for which multivariate analyses suggested increased risk of PA with lack of each resource type. Important findings included increased risk of PA with lack of up-to-date technology (OR 1.53, 95% CI: 1.04-2.26), sports equipment and facilities (OR 1.73, 95% CI: 1.09-2.77), and musical equipment and facilities (OR 1.74, 95% CI: 1.07-2.83).

This study serves as a first step to better inform the nature of the relations between disparities in school resources, resources allocation, and PA. Several data sources were combined in an effort to explore the work-related violence research questions in a way

that had not previously been considered. Utilization of multiple data sources allowed for the primary exposure, school resource level, to be measured in two distinct ways: 1) actual expenditure dollar amounts allocated to school resources (MDE), and 2) educators' self-reported levels of school resources (MES). Results suggested through both exposure measurement methods, that there is a relation between disparities in or lack of access to school resources and physical assault; particularly notable, in this population, were the increased risks of physical assault with insufficient access to specific school resources, such as sports and extracurricular activities. Research to further explore the nature of the relations between disparities in school resources and spending, resource allocations, and physical assault will be important to the development of relevant prevention strategies.

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CHAPTER 1

INTRODUCTION

Existing literature on school violence has largely focused on addressing the social or individual behavioral determinants of student-on-student violence. There is a dearth of literature exploring the environmental factors that influence school violence. Further, few studies have addressed school violence as it pertains to educators who experience it as work-related violence within a school setting (Casteel et al., 2007). Therefore, one of the goals of the Minnesota Educators' Study (MES), from which the current study was conducted, was to identify relevant environmental risk factors for non-fatal work-related physical assault (PA) against educators. Ultimately, the goal of the current study was to examine several specific school resource-related factors (i.e., access to school resources and resource allocation) and PA risk for educators.

Previous studies have led to the identification of some potential risk factors for school violence, which educators experience as occupational violence. These factors include various characteristics of the school environments, teachers, and students, such as: location of the school – with urban teachers being the more likely victims of violent crimes (36 per 1,000 teachers), followed by suburban (21 per 1,000), and rural teachers (17 per 1,000) (Devoe et al., 2004); gender of the teacher – males versus female teachers have been reported as more likely to be victims of violent crimes (51 versus 22 crimes per 1,000 teachers) (Devoe et al., 2004); low socioeconomic status (SES) and a history of prior violence – two of the student characteristics associated with violent behavior (Saner, 1996).

Low socioeconomic status of individuals and urban school location are commonly cited as risk factors for the violent injuries that occur in schools. In general, resource-poor areas are often noted as being more prone to violence (Baker et al., 1992). Further, within the context of schools, much attention has been paid to the relation between per student education expenditures (utilized as a measure of school resource level) and positive or negative outcomes, such as student achievement or failure (Ludwig et al., 1999; Hanushek, 1996). This body of literature, however, is inconclusive and it remains unclear whether increases in school funding and resources are, in fact, associated with positive student outcomes, such as improved student achievement (Hanushek, 2006; Ludwig, 1999).

It is likely that there are associations between per student education expenditures (i.e., school resources) and other outcomes, such as violence. Yet, the relations between per student education spending or school resource level and school violence have yet to be explored. Therefore, the purpose of this study was to examine the relation between schools' economic resource levels (e.g., amount of annual per student expenditure) and risk of PA against educators. The long-term goal of this research is to better understand how school funding (i.e., school resource levels), and subsequent resource allocation, might impact work-related PA experienced by educators in Minnesota schools.

Toward this goal, data from the MES were combined with data collected by the Minnesota Department of Education (MDE). The MDE collects school-level data (e.g., detailed per student expenditures, student and school demographics, and test scores, etc.) from Kindergarten through grade 12 (K-12) public schools in Minnesota. These data were used to complement the self-reported questionnaire responses provided by educators

who participated in the MES. By utilizing both datasets, the main exposure of interest (i.e., school resource levels) was measured in two distinct ways as: 1) actual per student education expenditure dollar amounts as reported to the MDE, and 2) educators' perceptions of their resource levels as self-reported on the MES. Results of this novel study have the potential to influence school funding policies that may reduce violence against educators in schools.

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CHAPTER 2

BACKGROUND AND SIGNIFICANCE

Work-related Violence and Educators

The National Institute for Occupational Safety and Health (NIOSH) defines work-related violence as violent acts, including physical assault (PA) and threats of assault, directed toward persons at work or on duty (NIOSH, 1996). Between 1993 and 1999, 18% of all violent incidents reported in the National Crime Victimization Survey (NCVS) occurred in the workplace (Duhart, 2001). Such work-related violence, both physical and non-physical, has only recently been recognized as a major public health problem. And, as is the case with school violence literature, the body of existing literature (and media focus) on work-related violence largely addresses the relatively rare incidents of violence (0.1% of all violent work-related victimizations) that have resulted in fatal outcomes (i.e., homicides), rather than the more common non-fatal violence and associated risk factors (Duhart, 2001).

According to the NCVS, 1.7 million non-fatal work-related violent acts were reported annually between 1993 and 1999 (Duhart, 2001). During this same time period, across the nation's workforce, violent crime was experienced by individuals while working at a rate of 12.6 per 1,000 persons in the workforce per year (Duhart, 2001). Certain occupational groups and types of workplaces, however, have an elevated risk of work-related violence. For example, those working in law enforcement, medical, mental health, teaching, retail sales, and transportation occupations reportedly incur 38% of all work-related violent victimizations (Duhart, 2001). Between 1993 and 1999, teachers working in elementary, junior and high school, and special education experienced 8% of all

violent work-related victimizations (Duhart, 2001). More recently, during the 2003-2004 school year, educators, while working, reported 127,500 student-perpetrated PAs and an additional 253,100 threats of injury from students (Dinkes et al., 2007).

Potential Risk Factors for Work-related School Violence

Most previous studies of school violence have explored student-on-student violence and the associated behavioral determinants of such violence, rather than environmental determinants of school violence as it impacts educators in their occupational environments. Recently, however, one study specifically examined risk factors for or predictors of non-fatal injury for public school teachers working in Los Angeles, California (Casteel et al., 2007). For the purposes of this study, 460 public elementary, middle, and secondary schools in California were included in the multivariate analyses. According to Casteel et al. (2007), work-related teacher assault was associated with teaching staff's total years of educational service, educational level, and gender, such that risk of assault increased with educators' number of years of educational service and Masters or Doctoral-level education, as well as increasing percentages of male teachers and students (Casteel et al., 2007).

Several years ago, just prior to the school shooting at Columbine High School (1998), which resulted in 15 violent deaths, the Metropolitan Life Insurance Company (Met Life) surveyed, by telephone, 1,000 public school teachers about their experiences with violence in school settings. The results of this effort, which involved surveying teachers working with students in third through twelfth grades, were published in 1999 as the "Survey of the American Teacher: Violence in America's Public Schools – Five Years Later."

The Met Life survey served as a follow-up to an initial survey, carried out in 1993, which had also focused on the concerns of teachers, students, and law enforcement officials. In terms of participation, the authors cited an "86% teacher cooperation rate," which was determined by dividing the number of completed survey completes (1000) by the sum of the number of completed (1000), refused (145) and terminated (14) interviews (i.e., 1000/1159 = 86% cooperation rate) (Binns and Markow, 1999). Based on the numbers provided by the authors, however, the actual response rate was approximately 20% or 1,000 completed surveys of 4,894 call attempts. In spite of the low response rate, results of the 1999 Met Life survey may offer some insight into the experiences that teachers have had with violence in schools. For example, teachers were asked if they "had ever been the victim of a violent act in or around school" and 16% indicated that they had, compared with 11% of those who had responded to the previous survey that was administered in 1993. When asked about who had perpetrated the violence, teachers indicated that 90% of violent incidents were perpetrated by students, 5% by parents, and 4% by an unknown perpetrator. Teachers reported that none of their violent events were perpetrated by "another teacher/faculty member" or "another school employee" (Binns and Markow, 1999).

Results of the Met Life survey suggested other potential risk factors for school violence which included: school location; age of students; and gender of teacher. For example, teachers working in urban areas seemed to experience more violence than those working in suburban areas, 19% and 14%, respectively. Elementary teachers experienced more violence than secondary teachers, 16% versus 14%. Also, male teachers (18%) indicated a higher rate of violent acts than female teachers (14%) (Binns and Markow,

1999). Teachers surveyed by Met Life were also asked to provide their perspectives on the causes of school violence. The 1,000 educators surveyed, noted the following factors as perceived causes of violence at their schools: lack of parental supervision at home (77%); lack of family involvement (69%); peer group pressure (58%) and involvement with drugs or alcohol (32%) (Binns and Markow, 1999).

In the years since the Met Life survey, several other reports on school violence have been issued which may further inform our understanding of possible risk factors for violence in the schools. Annually, the Bureau of Justice Statistics and National Center for Education Statistics (NCES) issue a report, "Indicators of School Crime and Safety," which examines the crime that occurs both in schools and while teachers and students are in transit to and from school. The findings in this report are based on student, teacher, and principal accounts as well as data from the National Crime Victimization Survey, School Crime Supplement to the National Crime Victimization Survey, Youth Risk Behavior Survey, School Survey on Crime and Safety, and School and Staffing Survey (DeVoe et al., 2004). According to the "Indicators of School Crime and Safety" (2004), between 1998 and 2002, teachers reported experiencing about 234,000 nonfatal crimes in a school environment; 144,000 thefts and 90,000 violent crimes (rape, sexual assault, robbery, aggravated assault, and simple assault) (Devoe et al., 2004).

Between 1998 and 2002, senior high school and middle or junior high school teachers were more likely than elementary school teachers to experience violent crimes (primarily simple assaults) (Devoe et al., 2004). Senior and middle school teachers experienced 30 and 26 crimes per 1,000 teachers, respectively, while elementary teachers experienced 12 per 1,000 teachers (Devoe et al., 2004). Further, school location also impacted teachers'

likelihood of assault, with urban teachers experiencing 28 crimes per 1,000 teachers while rural and suburban teachers experienced 12 per 1,000 teachers (Devoe et al., 2004). In addition, during the 1999-2000 school year, 9% of all Kindergarten through grade 12 (K-12) educators were threatened with injury/violence by a student, and 4% were actually physically assaulted by a student (Devoe et al., 2004). Public school teachers also experienced more PAs (4%) than private school teachers (2%) (Devoe et al., 2004).

In the 2007 report on "Indicators of School Crime and Safety," public school teachers also reported more threats of injury and assaults; 7.5% of public and 2.3% of private teachers were threatened with injury by a student, while 3.7% and 1.6%, respectively, were actually physically attacked (Dinkes et al., 2007). Further, school location (i.e., city, suburban, town, and rural) also influenced the likelihood of student-perpetrated threats and assaults. Of the public school teachers working in city, suburban, town, and rural schools, 11.6, 6.6, 5.6, and 4.8 percent experienced threats of injury from a student during the previous 12 months (Dinkes et al., 2007).

Consistent with previous reports, the most recent "Indicators of School Crime and Safety" report indicated that during 2003-2004, elementary school teachers experienced more physical attacks from students (3.5% of teachers) than secondary teachers (2.3% of teachers) (Dinkes et al., 2007). In contrast, 5.8% of elementary teachers, and 8.0% of secondary teachers reported threats with injury from a student. Over the same time period, male compared to female educators also experienced an elevated level of student-perpetrated threats (i.e., 8.5 versus 6.3 percent, respectively) (Dinkes et al., 2007).

Across the country, teachers experienced threats and assaults at different rates. The percentage of public school teachers, across all states, who reported having been

threatened in the previous twelve months ranged between 4 and 18 percent (Dinkes et al., 2007). Meanwhile, teacher reports of actual assaults or physical attacks ranged from 1 to 7 percent (Dinkes et al., 2007). In Minnesota (MN), 4.5, 4.5, and 3.6 percent of teachers working during the years 1993-1994, 1999-2000, and 2003-2004, respectively, reported that they had been physically attacked by a student during the previous 12 months. Further, for the same time periods, respectively, 9.6, 9.5 and 8.2 percent of Minnesota's teachers reported they had been threatened with injury by a student during the previous twelve months (Dinkes et al., 2007). As with previous reports, these data were also based on a compilation of reports from the NCES and several other agencies.

In 2006, the School Survey on Crime and Safety (SSOCS) was administered to a nationally representative random sample of 3,565 K-12 public school principals (78% response rate). The goal of the SSOCS was to determine the frequency of violent incidents occurring in schools by surveying school principals. Based on univariate analyses of the SSOCS, the overall rate of recorded violent incidents occurring in schools seemed to vary by the age and grade level of the students enrolled in a particular school (Noelle et al., 2007). The rates of violent incidents (i.e., physical attack or fight with or without a weapon, threat of physical attack, robbery with or without a weapon, rape, and sexual battery other than rape), in primary, middle, and high schools were 25, 52, and 26 incidents per 1000 students, respectively (Noelle et al., 2007).

Result results of the SSOCS indicated several other possible risk factors for school violence. Responders to the SSOCS were asked to identify to what extent thirteen different factors (e.g., inadequate funds, lack of or inadequate alternative placement or programs for disruptive students, lack of adequate teacher training, fear of litigation, etc.)

had limited their efforts to reduce school violence (Noelle et al., 2007). The three most common factors identified as limiting, "in a major way," their schools' efforts to reduce or prevent crime were: a lack of alternative placements or programs for disruptive students (19%); inadequate funds (17%); and federal, state, or district policies on disciplining special education students (11%) (Noelle et al., 2007). Thus, having inadequate funds, or a lack of resources, has been noted by many K-12 school principals as a factor that influences their ability to reduce or control school violence.

Several other characteristics of violent students have also emerged in the school violence literature. In general, males are more likely to be involved in the violent incidents that occur in schools and are more likely to be both perpetrators and victims of these acts (Warner et al., 1999). Males are also most commonly described as the perpetrators of work-related violence (Flaherty, 2001). Students enrolled in special education instruction have incurred a higher rate of discipline for serious misconduct incidents than their regular instruction classmates (i.e., 50 versus 15 per 1,000 students) (Skiba and Peterson, 1999). Conversely, children in special education, due to their unique emotional and behavioral problems, are also more likely to be the victim of violence than non-special education students (Warner et al., 1999).

Most previous studies (summary of aforementioned studies in **Table 1)** have largely examined the dynamics of student-on-student violence and ignored the risk factors for violence that is directed at educators (Casteel et al, 2007; Ruff et al., 2004). Existing studies, though limited, have suggested that work-related violence in schools is a significant problem for teachers. This is an important area for consideration, given the present teacher shortage and the research finding that one in every five teachers, who

chooses to leave the teaching profession, identifies their dangerous working environment (i.e., school environment), as their reason for leaving (Hoffman, 1996). In addition, the NCES has reported on the need for between 1.7 and 2.7 million new teacher hires, between 1998 and 2008, in order to accommodate for losses due to teachers' retirements and increases in student enrollments (Hussar, 1999). Identification of modifiable risk factors might encourage more individuals to enter the teaching field or, for those who have already chosen to teach, stay in the profession.

Lack of Resources and Violent Injury Outcomes

In general, areas with access to fewer resources are typically more hazardous than areas rich in economic, human, and social capital. Low-income populations are more likely to be exposed to toxic wastes, water pollution, high levels of ambient noise, as well as poorer quality housing, work and school environments (Evans and Kantrowitz, 2002). Higher rates of violence and injury also often occur in these resource-poor, low socio-economic status (SES) environments (Krug et al., 2002; Winett, 1998; Baker et al., 1992).

Several frustration-aggression theories have been developed to explain this relation between lack of resources or poverty, and negative outcomes such as violence and injury. One such theory (i.e., Relative Deprivation Theory) focuses on an individual's psychological perception that the status of his or her self-identified group is 'less than' when compared to the larger majority or privileged group (Walker and Smith, 2002). Violence, then, is the result of this perceived 'relative deprivation' or frustration due to perceived lack of access to resources and status. Historically, such frustration-aggression theories have been used by some to explain school violence "as a legitimate protest

against unjust school structures, including segregation, economic and school funding inequities that have devastated primarily African American and Hispanic areas, inadequate resources in schools, and curricula devoid of multicultural content" (Casella, 2001). Ultimately, efficacious violence prevention efforts should seek to promote the reduction of inequities, thereby reducing violence (Krug et al., 2002).

In recent years, injuries, unintentional in particular, have been increasingly recognized as a significant cause of disability and morbidity, and loss of productive years of life (DHHS, 2004; Baker et al., 1992). There is consistent evidence of a 'social patterning' of injury risk, such that globally, less privileged groups and individuals experience a higher burden of injuries than their more advantaged counterparts (Laflamme, 2001). This relation persists not only in urban areas, but also among individuals living in rural areas. For example, there is indication that increasing levels of poverty (i.e., reducing SES) are also associated with rural students' direct exposure to violence in school (Carlson, 2006).

In general, those of lower SES or who reside in lower SES neighborhoods, bear a greater portion of the injury burden than those of higher SES (Sampson and Groves, 1989). There is, however, a differential relationship between injury and SES, where the strength of association depends on the type of injury, with a demonstrated association between fatal injuries (due to several causes) and low-SES being the strongest (Cubbin et al., 2000). Thus, there is an established association between violence and poverty or lack of resources among individuals and communities. This association, however, has not yet been explored within the context of schools (i.e., do schools' resource levels or lack of resources impact the violence that occurs in schools?).

School Resources and Student Outcomes

In the economics of education literature, the standard measure of school resources is the amount of annual per student expenditure. Other school input variables such as student to teacher ratios, have also been used to assess school quality; but, per pupil expenditures are generally utilized to gauge the quality of a school and the education provided to its' students. For decades, the relation between per pupil expenditures and student outcomes have been explored and the current state of this literature suggests no consensus on the relation between school inputs (i.e., school resources) and various outcomes such as test scores (Hanushek and Welch, 2006). The assumption that increased school inputs or resources in the form of more education dollars would lead to positive, more or better quality outcomes is intuitive; however, schools are not necessarily in the business of "maximizing profits" and efficient production (Hanushek and Welch, 2006).

Per pupil education expenditures have grown over time and, yet, research does not suggest that significant increases in outcomes are coincident with our investment in education. The relations between school spending (i.e., resources) and various school outcomes, both positive and negative, have potential policy implications, as our schools are publicly funded. Our collective goal should be to determine the best use of these resources in order to make our schools better and safer for the students, educators, and staff in these learning environments.

School Funding in Minnesota

Determination of how to equitably fund elementary and secondary public schools in Minnesota is the responsibility of the State legislature. This legislature has developed the Minnesota School Finance System to provide Minnesota's 343 independent school

districts and 125 charter schools (as of October 1, 2004) funds for their operating expenses. The majority of these funds are distributed to Minnesota schools through the General Education Revenue Program (GERP) (Strom, 2005). This funding mechanism entails a set of multifaceted funding formulas that are used in conjunction to determine the amount of funds (or resources) for which a school district is eligible during a given school year.

Historically, schools have been largely funded through property taxes which were generated in the local school district. During the 1970's, however, a new tax bill was introduced and passed, by the Minnesota legislature, which dictated that the main source of education funding would be state funds, rather than local property taxes. This bill was proposed as a result of litigation which had alleged that MN's K-12 students were receiving differential education, based the ability of the school district in which they resided to generate property taxes for education (i.e., property–rich districts were able to spend more per student on education). This pioneering legislation, which sought to equalize education funding and reduce property taxes by increasing income and sales taxes state-wide, fundamentally changed the way K-12 education was financed (Thorson and Anderson, 2007). As a result, it was dubbed the "Minnesota Miracle" education funding reform bill.

As a result of passage of the "Minnesota Miracle" legislation, today the state currently provides the large majority of the revenue for funding primary and secondary schools in Minnesota. The current MN GERP, which was developed in 1987 for implementation in the 1988-1989 school year, was intended, in part, to equalize the funding disparities between high and low property value districts, thereby, improving education for the

underserved. Since, its inception in 1989, the GERP has reportedly changed little (Strom, 2005).

In general, a school's funding is based on pupil counts and depends on a school district's funding needs in different areas as well as the extent of need (Strom, 2005). A complex set of formulas is utilized to determine the amount of money allocated to each school district. Ultimately, elementary and secondary schools in Minnesota are funded through a mixture of state-collected taxes (income and sales), as well as some locally collected property taxes (Crowe, 2005). Schools receive their primary revenue in three different forms: 1) State Education and Finance Appropriations (i.e., General Education Aid and Categorical Aids); 2) State Paid Property Tax Credits; and 3) Property Tax Levies) (Crowe, 2005).

For each school year, a school district's general education aid is the sum of several components: basic education; extended time (additional funds for students that participated in extended day/week school or summer school); basic skills (comprised of compensatory skills revenue – for remedial instruction, individualized instructions, truancy reduction programming, etc., and limited English proficiency [LEP] revenue – for providing limited English proficiency instruction); gifted and talented (for identifying and providing education programs to gifted students); operating sparsity (a school is allocated more funds if the school is isolated and, therefore, receives less basic education funds); transportation sparsity (funds that may be used for any operating purpose); operating capital (funds for eligible equipment and facilities needs); equity (funds intended to reduce disparity between the highest and lowest revenue districts (Minneapolis, St. Paul, and Duluth Districts are ineligible for these funds); and transition

funds (those intended to minimize the impact of formula changes on school districts) (Strom, 2005) (**Table 2**).

In addition to the general education revenues, schools also receive state aid funds through specific categorical aids which must be directed towards areas to which they were intended (e.g., special education or desegregation and integration efforts). Some districts receive State-paid property tax credits. Property tax credits given to residents reduces the amount of property taxes paid, so the state pays the difference between what was levied in property taxes and the amount actually received in property taxes (Crowe, 2005). The State allows districts to levy or tax the taxpayers within their district to generate additional funds for schools (property tax levies are generally determined as part of the formula that includes state aid) (Crowe, 2005). The large majority of funds allocated to schools are discretionary (74.1% in 2004-2005) or non-categorical aids, that may be allocated to program areas as determined by the districts' school boards (Melcher, T., personal communication, 11/13/07).

All of these State funds are appropriated to individual district's school boards that then determine how to allocate the funds among the schools and programs within their respective districts, within the constraints of certain legislative restrictions (Strom, 2005). According to Minnesota statues, a given School Board allocates to the "site decision-making team" (i.e., a group of teachers, student representatives, school employees, and the school principal at each separate education site or school in the district), the funds that are to be spent at that school during a fiscal year. It is then the responsibility of this decision-making team to make a "determination of the use of the revenue" at the school site (School District Powers and Duties, 2007).

Schools can allocate their funds to several different areas. The State mandates that all Minnesota public and charter schools report their General Fund Expenditures per student, and these values are made publicly available on the Minnesota Department of Education (MDE) Website. The total per student expenditure amount, which varies significantly across school districts, is allocated or spent in ten different operating expense or program areas. These areas include:1) regular instruction (expenditures for elementary and secondary classroom instruction); 2) career and technical instruction (expenditures in secondary schools for job skill and career exploration); 3) special education instruction (expenditure for instruction of students with atypical conditions in need of special education); 4) student activities/athletics (expenditures for extra and co-activities); district level administration (expenditures for district-wide services); 5) district level administration (expenditures for district level administration, such as superintendent and school board office) 6) school level administration (expenditures for activities of administrators); 7) instructional support services (expenditures to help teachers provide instruction); 8) pupil support services (expenditures for student counseling, guidance, as well as health, psychological, and social work services); 9) operations, maintenance, and other (expenditures for operation, maintenance, and repair of district's buildings, grounds, and equipment); and 10) student transportation (expenditures for transporting students) (Minnesota Department of Education, 2005) (**Table 3**).

Much literature has been devoted to exploring the relations between per student expenditures (or school resources levels) and various student outcomes, such as student performance. Initially, the prevailing hypothesis was that more money spent per student (i.e., more or better school resources) would equate to better student performance.

Subsequent research, however, is inconsistent and there is no consensus on the nature of the relation between increased funding and improved student outcomes (Ludwig and Bassi, 1999; Hanushek; 1996).

Many cite as evidence, against a positive relationship between expenditures or resources and performance, the fact that real per pupil education spending has increased in recent decades; yet, performance on standardized tests has not changed (Figlio, 1999). A primary purpose of the current effort, however, was to consider not only if increased spending and resources might potentially reduce violence but, more importantly, to consider the potential impact of how resource allocation or allocating resources to the specific key school program areas may play a role in reducing school violence. Such an exploration of the relation between other non-traditional student outcomes, such as violence, and per student expenditure, school resources, and resource allocation, might offer more insight into the impact of school resources on those individuals in the school environment.

Preliminary Studies of Work-related Violence

The team of investigators collaborating on the MES effort has been previously involved in several major research efforts. These previous efforts, which served as the foundation for the current study, have included epidemiological study efforts to address major injury problems in several populations. Both descriptive and analytical efforts, including case-control studies, have been previously conducted.

Work-related Assaults in Minnesota

In 1992, a study was conducted to identify the magnitude of Minnesota's work-related assaults (LaMar et al., 1998). For the purposes of the study, all physical assault-related

Workers' Compensation claims that occurred in Minnesota during the year were examined. This included 712 non-fatal and six-fatal PA claims. Based on this study, the overall PA rate for all industries in Minnesota was determined to be 34 per 100,000 workers per year. Upon analyzing the data by industry, based on the two digit Standard Industrial Classification Code (SIC), it was shown that educational, social, and health services were among the three industries with the highest reported PA rates (352, 232, and 158 per 100,000 workers, respectively).

From the study it was evident that specific occupational groups were at higher risk of work-related PA. And, further study of these groups allows for the potential to identify specific risks factors that might better direct violence prevention strategies in the workplace.

Costs of Work-related Assaults in Minnesota

Several of the MES investigators published a cost-analysis study of Minnesota work-related assault (McGovern et al., 2000). The goal of this study was to identify the lifetime costs of PAs in Minnesota in 1992; 429 individuals were identified as having received Workers' Compensation wage replacement because they had missed more than three days of work due to a work-related PA.

The investigators utilized the 'human capital' method as described by Rice, McKenzie, and Associates in "Costs of Injury in the United States, A Report to Congress, 1989." This method was applied to estimate the lifetime costs of these assaults by modeling estimates of direct costs, morbidity costs, and mortality costs and, then, adjusting these estimates with the actual data that had been collected for the year of the assault incidents (i.e., 1992). The economic costs of the assaults can be estimated by

summing the three adjusted components. Based on this method of analysis, it was determined that the cost associated with 344 non-fatal work-related assaults was nearly six million dollars (inflated to the 1996 dollar value). An additional analysis by industry demonstrated an elevated risk for public administration (59.6/100,000 injury rate; $18,693 per case; $11.14 per employee) and services (39.9/100,000 injury rate; $16,373 per case; $6.53 per employee) workers. This study demonstrated the significant monetary impact of work-related injuries, which could be greatly reduced by the development and implementation of effective intervention strategies.

A further sub-study of 10 individuals considered the impact of work-related PA and resultant disability (McGovern et al., 2000). This sub-study utilized the qualitative case study methodology used by Rice, McKenzie, and Associates (1989) to ask individuals about the significance of the assault, as well as the impact of the event on the individual's quality of life including physical, emotional, social and role functioning. Via the case studies it was shown that four years after the work-related assault event, the individuals had been significantly affected and had experienced job changes, chronic pain, changes in function status, and depression.

The Minnesota Nurses' Study

The following studies used a similar study design to that of the current Minnesota Educators' Study (MES) in an effort to examine Minnesota nurses, an occupational group also noted as having increased rates of physical and non-physical violence (Duhart, 2001). These studies served as the basis for the MES and were designed and conducted by investigators at the University of Minnesota's Center for Violence Prevention and

Control. Several of these investigators were also involved in the design, development and implementation of the MES.

Risk Factors for Assault Among Nurses

This study was designed to examine the magnitude of the violence (physical and non-physical) within a retrospective cohort of registered and licensed practical nurses working in Minnesota in 1995 and 1996 (Lee et al., 1999). An additional goal of this study was to identify risk factors for violence against nurses by using a nested case-control design. Cases (n=63) were identified from those nurses who reported a work-related assault identified in the Workers' Compensation system that resulted in a loss of more than three days of work time. Three controls were selected for each of the identified cases and both cases and controls were mailed questionnaires regarding their various work-related exposures, including characteristics of co-workers and their general work environment. The time period of interest for the exposure was prior to and during the violent incident, for cases, and during a randomly selected time period when the nurse had worked, for controls.

Several risk and protective factors were identified as a result of this study. Risk factors for nurses' PA included working with patients with mental illness (OR 3.5, 1.4-8.6), and patients alone (i.e., patient to personnel ratio of >5 versus <2) (OR 2.54, 1.1-5.7). Protective factors included the presence of video monitors and security personnel (Lee et al., 1999).

Study of Risk Factors for Violence Among Nurses

In "An epidemiological study of the magnitude and consequence of work-related violence: the Minnesota Nurses' Study (MNS)," investigators identified nurses' rates of

physical and non-physical violence as well as consequences of these events (Gerberich et al., 2004). This was a two-phase study that examined a cohort of Licensed Practical Nurses (LPN's) and Registered Nurses (RN's) who were licensed to work in the state of Minnesota as of October 1st, 1998. A causal model was developed for the complex relationships among the host, agent(s), and vectors. This model was used to inform the development of an effective survey instrument to capture the pertinent exposures and outcomes. Directed acyclic graphs (DAGs), based on the causal model, were developed to aid in the selection of confounders to be controlled for in the multivariate analyses (Greenland et al., 1999).

Initially, a random sample of 6,300 nurses was selected from the population of nurses (n=79,218) and mailed the comprehensive questionnaire in order to identify those who had worked in the previous year and during which months (i.e., were eligible) – and whether or not they had experienced violence in the workplace during the study period. Nurses also provided demographic information and were asked to identify their physical violent incidents as single distinct events or a series of on-going events that occurred too many times to distinguish among events. Participants were provided with a definition of work-related violence as "the intentional use of physical force or emotional abuse, against an employee, that resulted in physical or emotional injury and consequences."

The nurses were 96% female; the most commonly identified consequence of PA was frustration (47%), and 9% of nurses who experienced PA reported that they had persistent problems because of the event. The adjusted rate for PA was 13.2 (12.2-14.3) per 100 persons per year, with the majority of PAs being perpetrated by patients/clients (96.8%) (Gerberich et al., 2004). Multivariate analyses of the Phase I data indicated increased risk

for PA for those nurses working primarily in nursing homes/long-term care/rehabilitation facilities (OR 2.59, 2.07-3.23), psychiatric/behavioral (OR 2.06, 1.47-2.82), emergency (OR 2.48, 1.39-4.18), and intensive care (OR1.5, 0.99-2.18) departments. Increased risks of PA were also associated with provision of direct patient care (OR 1.85, 1.35-2.54) and supervision of patient care (OR 1.75, 1.09-2.75).

The initial comprehensive phase of the study was also used to identify cases and controls for the case control study, Phase II. In Phase II, participants were mailed an additional questionnaire that sought to examine specific risk factors for work-related violence by comparing exposures between those who did and did not experience violent events. Cases (n=475) were those nurses who had reported at least one PA event during the study period while controls (n=1425), who did not report such an event, were randomly selected in a 3:1 ratio to cases. Questions included details about various exposures, including environmental exposures such as characteristics of the work environment (e.g., violence policies in the workplace?) and coworkers (e.g., support from coworkers or supervisors?). The data collection instrument questions for cases pertained to exposures that occurred prior to and during their violent incident, while controls were questioned about exposures that occurred during a randomly selected month in which they had worked. For each phase, participants were contacted up to four times with mailed packets that included survey instruments to increase response rates. The Phase I response rate was 78%, while the response rate for Phase II was 68% (Gerberich et. al, 2004).

The results of Phase II (i.e., case control study) were reported in "Risk Factors for Work-related Assaults on Nurses" (Gerberich et. al, 2005). Multivariate analyses of the

Phase II data indicated increased risks for working primarily in nursing homes/long-term care/rehabilitation facilities (OR 2.6, 1.9-3.6), psychiatric/behavioral (OR 2.0, 1.1-3.7), or emergency departments (OR 4.2, 1.3-12.8). Several environmental characteristics also influenced risk of PA. Those working in areas with lighting, "less than bright as daylight" compared to "bright as daylight," experienced higher risk of assault (OR 2.15, 1.58-2.83). Risk of assault was decreased for those "working with young populations" (OR 0.4; 0.2-0.99) or carrying cell phones/personal portable alarms that had been provided by the nurse (OR 0.3; 0.15-0.71).

Validation substudies, relevant to environmental exposures and health care treatment were conducted to determine potential measurement error. This included the employer validation sub-study relevant to self-reporting of the violence policies (exposure misclassification). Despite a response of only 49%, and some discrepancies between nurse and employer reporting, a separate study that utilized the MNS study database, identified sensitivity analyses results indicating that exposure misclassification would have had to be extreme to reverse the protective effect of key exposures of interest (zero tolerance and prohibited violent behavior policies) examined in this validation effort (Nachreiner et al., 2002). To enhance such validation efforts, future studies would ideally include a validation measure comparing nurses' perceptions to a physical review of policies, obtained from employers, to estimate the degree to which perception may vary from fact (Nachreiner et al., 2002).

A low response to the health care treatment validation sub-study was not unexpected, not only because of the sensitive nature of the problem being addressed but, also, because very small percentages of the specific PA event or ongoing event cases sought healthcare.

In addition, the recent heightened sensitivity of the public, pertinent to health care record access, likely contributed to the low response, particularly because they were requested to identify provider names for a specific period of time, whether or not they had incurred a work-related violent injury event. Of the health care records that could be compared with the nurses' reports, all but one were consistent in indicating they had received no treatment for work-related violence injuries during the specified period; one discrepancy existed when a nurse indicated "self-treatment" on the survey, but the health care provider reported treatment for a (possible) work-related violent event.

Future strategies need to be tested to optimize such validation efforts, with attention to the issues identified; similar procedures have been successful in prior studies of other populations, resulting in high response rates and correspondence between the health care provider and respondent reports (Gerberich et al., 1987; Gerberich et al., 1983).

Research Seminar – 'Violence in the Schools: Teachers and Victims'

Prior to developing the Minnesota Educators' Study survey instruments, a group of faculty, injury and violence prevention graduate students interested in the project, and six primary and secondary school teachers and/or administrators were brought together to generate ideas relevant to the research effort. The members of this group, representing various types and locations of schools, indicated a great need for an exploration of this problem and encouraged the investigators to further pursue the challenge of violence against teachers.

In the research seminar session, focus group techniques were used to facilitate the discussion. Responses to questions proposed by the facilitator; were then used to complement the background research which served as the foundation for developing a

general causal model of the driving forces behind the violence that teachers may experience. Several of the school representative members of this initial focus group have served on the Advisory Board for the Minnesota Educators' Study and have continued to be consulted throughout the current MES research effort.

Limitations of Previous Research on School and Work-related Violence

In summary, most of the school violence literature has focused on student-on-student violence, rather than on teachers who are commonly targeted. Our limited knowledge of the extent of the school violence as it impacts educators is largely based on cross-sectional surveys of teachers. A limitation of these cross-sectional studies of teachers is the self-reported nature of the questionnaires, as there may be recall bias. Also, different measures of violence as well as data collection methods have been utilized to explore school violence (Warner et al., 1999). These varying violence assessment techniques and definitions can influence both educators' and students' reports of incidence and prevalence of violent events (Warner et al., 1999). Further, variation in operationalization of the term "school violence" across studies has limited the validity of comparisons among studies of school violence. Rigorous scientific studies have not been conducted to consider various environmental risk and protective factors, such as school resources, that might impact teachers' risk of PA on the job.

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TABLE 1
Previous Studies Investigating School and/or Work-related Violence

Author(s), Title, Journal	*Year*	*Research Question/Goal*	*Population*	*Method*	*Design*	*Analyses*	*Conclusions**
Dinkes, Cataldi, Lin-Kelly, *Indicators of School Crime and Safety: 2007,* U.S. Department of Justice	2007	To examine several different indicators of school crime and safety. Areas of investigation in included: Violent deaths at school; Nonfatal student victimization; School environment; Fights, weapons, and illegal substances; Fear and avoidance; and Discipline, safety and security measures	Data were collected from multiple independent data sources (e.g., federal agencies and departments), including the Bureau of Justice Statistics, National Center for Education Statistics, and Centers for Disease Control and Prevention. Data collected from the perspectives of students, teachers, principals, and the general population.	Multiple sample designs, which depended on the collecting agency	Cross-sectional	Frequency and rate calculations	During 2003-2004 school year: Educators reported 127,500 student-perpetrated physical assaults and additional 253,100 injury threats 7.5% of public and 2.3% of private teachers were threatened with injury by a student, 3.7% and 1.6%, respectively, were actually physically attacked For public school teachers working in city, suburban, town, and rural schools, 11.6, 6.6, 5.6, and 4.8% experienced threats of injury from a student during the previous 12 months

*Selected relevant results/conclusions presented.

TABLE 1
Previous Studies Investigating School and/or Work-related Violence (continued)

Author(s), Title, Journal	*Year*	*Research Question/Goal*	*Population*	*Method*	*Design*	*Analyses*	*Conclusions**
Casteel, Peek-Asa, Limbos, *Predictors of Nonfatal Assault to Public School Teachers in Los Angeles,* American Journal Industrial Medicine	2007	To examine school characteristics that increase the odds of nonfatal teacher assaults as well as the impact of community-level crime on teacher assault injury	460 elementary, middle, and high schools in Los Angeles (All included schools were public, and schools that served primarily special education or alternative students were excluded)	Assaults were identified from the California Employers' Reports of Occupational Injury or Illness Schools were identified by data from the California Department of Education (these data were linked to injury and illness reports) Community crime rates were obtained from the Los Angeles Police Department	Retrospective cohort	Logistic regression	Teacher assault was positively associated with teacher's total years of teaching experience. In addition, schools with a higher percentage of teachers with Masters/Doctoral degrees were more likely to report an assault. Increasing percentages of male teaching staff and students were positively associated with schools reporting a teacher assault.

*Selected relevant results/conclusions presented.

TABLE 1 (continued)
Previous Studies Investigating School and/or Work-related Violence

Author(s), Title, Journal	*Year*	*Research Question/Goal*	*Population*	*Method*	*Design*	*Analyses*	*Conclusions**
Nolle, K., Guerino, and Dinkes, R., *Crime, Violence, Discipline, and Safety in U.S. Public Schools: Findings from the School Survey on Crime and Safety: 2005-06,* National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.	2007	For crime victims to describe the impact of crime and the characteristics of violent crimes they experienced	A nationally representative sample of 3,565 K-12 public school principals; 2,724 responders (78% response rate)	Mailed questionnaire regarding frequency of violent crime incidents at U.S. primary, middle and high schools	Cross-sectional	Frequency percentages from bivariate cross-tabulation procedures	The overall rate of violent incidents for all public schools was 31 incidents per 1,000 students. The high rate w as among middle school students; 25 per 1,000 primary students, 52 per 1,000 middle school students, and 26 per 1,000 high school students Three most common factors reported to limit "in a major way" schools' efforts to reduce or prevent crime were: a lack of alternative placements or programs for disruptive students (19%); inadequate funds (17%); and federal, state, or district policies on disciplining special education students (11%)

*Selected relevant results/conclusions presented.

TABLE 1 (continued)
Previous Studies Investigating School and/or Work-related Violence

Author(s), Title, Journal	*Year*	*Research Question/Goal*	*Population*	*Method*	*Design*	*Analyses*	*Conclusions**
DeVoe, Ruddy, Miller, et al., *Indicators of School Crime and Safety: 2002,* U.S. Department of Justice	2004	To examine several different indicators of school crime and safety. Areas of investigation in included: Violent deaths at school; Nonfatal student victimization (based on student reports); Violence and Crime at School (based on Principal reports); Nonfatal teacher victimization (based on teacher reports); and School Environment	Data were collected from multiple independent data sources (e.g., federal agencies and departments), including the Bureau of Justice Statistics, National Center for Education Statistics, and Centers for Disease Control and Prevention	Multiple sample designs, which depended upon the collecting agency	Cross-sectional	Frequency and rate calculations	1999-2000, nine percent of all elementary and secondary school teachers were threatened with injury by a student; four percent were physically attacked by a student Between 1996-2000, urban teachers were more likely to be victims of violent crimes than suburban and rural teachers (36 vs. 21 and 17, respectively, per 1,000 teachers) Between 1996-2000, teachers experienced a violent crime rate, while working, of 74 per 1,000 teachers per year

*Selected relevant results/conclusions presented.

TABLE 1 (continued)
Previous Studies Investigating School and/or Work-related Violence

Author(s), Title, Journal	*Year*	*Research Question/Goal*	*Population*	*Method*	*Design*	*Analyses*	*Conclusions**
Duhart, *Violence in the Workplace, 1993-1999,* Bureau of Justice Statistics Special Report	2002	For crime victims to describe the impact of crime and the characteristics of violent crimes they experienced	A nationally representative sample of about 86,000 U.S. households representing 156,000 persons age 12 or older	Surveys via telephone (National Crime Victimization Survey) regarding both reported and unreported violent crimes; Nationally representative sample of households in United States	Cross sectional	Frequency and rate calculations	Between 1993 and 1999, an average of 1.7 million violent victimizations per year were committed against persons 12 years of age or older while at work Workplace violence accounted for 18% of all crime during the seven-year period Violent crime was experienced by persons at work at a rate of 13 per 1,000 persons in the workforce Teachers, as an occupational group, had the third highest simple assault rate (14.9 per 1,000 persons in the workforce) of all occupations

*Selected relevant results/conclusions presented.

TABLE 1 (continued)
Previous Studies Investigating School and/or Work-related Violence

Author(s), Title, Journal	*Year Published*	*Research Question*	*Population*	*Method*	*Design*	*Analyses*	*Conclusions**
Binns and Markow, *The Metropolitan Life Survey of the American Teacher, 1999: Violence in America's Public Schools – Five Years Later*	1999	To examine the concerns of teachers, students and law enforcement officials regarding violence in public schools	1,000 teachers who taught 3rd - 12th grade students; approximately 20% response rate (1,000 completed surveys of 4,894 call attempts)	Questionnaires administered via telephone	Retrospective, cross-sectional (Follow-up to 1993 questionnaire)	Descriptive statistics, frequencies, etc.	16% of teachers "had ever been the victim of a violent act in or around school," compared to 11% of the 1993 respondents 90% of violent incidents were perpetrated by students, 5% by parents, and 4% by an unknown perpetrator Additional potential risk factors for school violence included: school location; age of students; and gender of teacher

*Selected relevant results/conclusions presented.

TABLE 1 (continued)
Previous Studies Investigating School and/or Work-related Violence

Author(s), Title, Journal	*Year*	*Research Question/Goal*	*Population*	*Method*	*Design*	*Analyses*	*Conclusions**
Saner and Ellickson, *Concurrent Risk Factors for Adolescent Violence,* Journal of Adolescent Health	1996	To examine risk and protective factors for different types of violent behavior in a sample of high school students	Over 4,500 high school seniors and drop-outs from California and Oregon	Self-reported survey	Six-year Longitudinal self-reported survey	Risk scales to show cumulative effects of multiple factors within substantive domains, logistic regression	Major risk factors for violence included: gender and deviant behaviors like using/selling drugs; committing nonviolent felonies, etc.; low academic orientation; lack of parental affection and support As the number of risk factors increased, so did the likelihood of engaging in violent behavior

*Selected relevant results/conclusions presented.

TABLE 1 (continued)
Previous Studies Investigating School and/or Work-related Violence

Author(s), Title, Journal	*Year Published*	*Research Question*	*Population*	*Method*	*Design*	*Analyses*	*Conclusions**
Gerberich, Church, McGovern, *et al., Risk Factors for Work-related Assaults on Nurses,* Epidemiology	2005	To identify risk factors for physical assault (PA) against MN nurses	6300 licensed nurses who worked in MN in previous 12 months, both RNs and LPNs; 78% response rate	Questionnaires were mailed to participants in two phases: Phase I collected comprehensive data on nurses' work environments and experiences with work-related violence; Phase II involved a case-control study to examine risk factors for work-related violence (results presented here are based on Phase II data)	Retrospective, cohort	Logistic regression with adjustment for non-response and unknown eligibility; confounder selection guided by directed acylic graphs	Multivariate analyses of the Phase II data showed increased risks for working primarily in nursing homes/long-term care/rehabilitation facilities (OR 2.6, 1.9-3.6), psychiatric/behavioral (OR 2.0, 1.1-3.7), or emergency departments (OR 4.2, 1.3-12.8). Working in areas with lighting, "less than bright as daylight" compared to "bright as daylight," increased risk of PA (OR 2.15, 1.58-2.83) Risk of PA was decreased for those "working with young populations" (OR 0.4; 0.2-0.99) or carrying cell phones/personal portable alarms (OR 0.3; 0.15-0.71)

*Selected relevant results/conclusions presented.

TABLE 1 (continued)
Previous Studies Investigating School and/or Work-related Violence

Author(s), Title, Journal	*Year*	*Research Question/Goal*	*Population*	*Method*	*Design*	*Analyses*	*Conclusions**
Gerberich, Church, Hansen, *et al.*, *An epidemiological study of the magnitude and consequences of work related violence: the Minnesota Nurses' Study,* Occupational and Environmental Medicine	2004	To identify the magnitude of and potential risk factors for violence within a major occupational population	6300 licensed nurses who worked in MN in previous 12 months, both RNs and LPNs; 78% response rate	Written questionnaires were mailed to participants in two phases: Phase I collected comprehensive data on nurses' work environments and experiences with work-related violence (results presented here are based on Phase I data); Phase II involved a case control study to examine risk factors for work-related violence	Retrospective, cohort	Basic descriptive statistics, event rates, logistic regression with adjustment for non-response and unknown eligibility	The adjusted rate for physical assault (PA) was 13.2 (12.2-14.3) per 100 persons per year (96.8% of PA was perpetrated by patients or clients) Risk of PA was elevated for those nurses working primarily in; nursing homes/long-term care/rehab. facilities (OR 2.59, 2.07-3.23); psychiatric/behavioral (OR 2.06, 1.47-2.82); emergency (OR 2.48, 1.39-4.18); and intensive care (OR1.5, 0.99-2.18) departments Increased risks of PA were associated with provision of direct patient care (OR 1.85, 1.35-2.54) and supervision of patient care (OR 1.75, 1.09-2.75).

*Selected relevant results/conclusions presented.

TABLE 2
General Fund Revenue Per Student Generated by Students Attending a Particular School Minnesota Department of Education (Report to Taxpayers Overview), 2005

General Fund Revenue per Student Generated By Students Attending This School:	Description of Revenue Category:
1. Basic General Education	Revenue generated by the basic general education per pupil formula allowance for general operation of the school district.
2. Extended Time	Revenue for extended day, extended week, summer school, or other programming authorized under the learning year program.
3. Compensatory	Districts receive additional funding for students eligible to receive free or reduced price lunches. The revenue is to meet the educational needs of pupils whose educational progress related to state or local content or performance standards is below the level that is appropriate for pupils at that age level.
4. LEP (Limited English Proficient)	Districts with eligible limited English proficient students to receive aid to recognize the additional costs of educating these students.
5. Sparsity	Funds added costs of operating geographically isolated small schools.
6. Operating Capital	Funding for capital expenditures facilities and equipment costs.
7. Operating Referendum	Additional money for school operations approved in a referendum.
8. Other General Education	Revenue from other components of general education revenue, including sparsity, training & experience, equity, transition, and enrollment options revenue.
9. Subtotal, General Education	Total of lines 1-8 above
10. Special Education	Funding to recognize a portion of the additional costs of providing required services to students with a disability.
11. First Grade Preparedness	School sites with the highest concentration of pupils eligible for free or reduced price lunches are eligible for funding to operate full day kindergarten programs or half day programs for four year olds.
12. Other Operating	All other general fund revenue not included in lines 1-11or 13.
13. Other Capital Expenditures	Revenue provided outside of general education revenue for capital expenditure facilities and equipment costs, including health & safety, building lease, and alternative facilities revenue. It also includes revenue approved in capital projects referendum.
14. Total – General Fund	Total of lines 1-13.

TABLE 3
10 General Fund Operating Expense Allocation Areas
Minnesota Department of Education, (Report to Taxpayers Overview), 2005

10 General Fund Expenditure Allocation Areas:	Expenditures To Be Used for the Following School Programming Efforts:
1. Regular Instruction	Expenditures for elementary and secondary classroom instruction, not including vocational instruction and exceptional instruction.
2. Career and Technical Instruction	Expenditures in secondary schools for instruction that is related to job skills and career exploration. Includes expenditures for home economics, as well as industrial, business, agriculture, and distributive education.
3. Special Education Instruction	Expenditures for instruction of students who, because of atypical characteristics or conditions, are provided educational programs that are different from regular instructional programs. Includes expenditures for special instruction of students who are emotionally or psychologically disabled, or mentally retarded; for students with physical, hearing, speech, and visual impairments; and for students with special learning and behavior problems.
4. Student Activities/Athletics	Expenditures for all student extra and co-activities and student sports programs. They may or may not be offered for school credit.
5. District Level Administration	Expenditures for district-wide services including school board, superintendent district office, and general administrative support including the costs of their immediate offices.
6. School Level Administration	Expenditures for activities of administrators and their offices responsible for a school, a group of schools or an instructional area.
7. Instructional Support Services	Expenditures for activities intended to help teachers provide instruction, not including expenditures for principals or superintendents. Includes expenditures for assistant principals, curriculum development, libraries, media centers, audio visual support, staff development, and computer assisted instruction.
8. Pupil Support Services	Expenditures for all non-instructional services provided to students, not including transportation and food. Expenditures for counseling, guidance, health services, psychological services, and attendance and social work services.
9. Operations, Maintenance and Other	Expenditures for operation, maintenance, and repair of the district's buildings, grounds, and equipment (includes expenditures for custodians, fuel for buildings, electricity, telephones, and repairs). Other expenditures include dues and memberships, judgments against the school district, and any other expenses not otherwise classified.
10. Student Transportation	Expenditures for transportation of students, including salaries, contracted services, fuel for buses, and other expenditures.

CHAPTER 3
RESEARCH DESIGN AND METHODS

Specific Aims

The purpose of this study was to examine the relation between schools' economic resources (e.g., amount of per student expenditure, allocation of these resources, and educators' perceptions of resources) and the risk of physical assault against educators. The long-term goal of this research was to better understand how school resources and funding, and subsequent school resource allocation may impact the work-related physical assault experienced by educators in Minnesota schools. Toward this goal, the research objectives, or *specific aims*, were to:

1) Identify the relationship between the quantifiable level of per student expenditures (e.g., total annual state-reported General Fund Education expenditure per student) and physical assault against educators.

2) Identify the relationship between allocation of resources to various school program areas (e.g., pupil support services and student activities/athletics, etc.) and physical assault against educators.

3) Identify the relationship between educators' perceived levels of school resources (e.g., sufficient resources provided by the school or not) and physical assault against educators.

The three corresponding *hypotheses* under investigation are:

1) A high (versus low) level of quantifiable per student spending (i.e., annual per student expenditure) is associated with a decreased risk of physical assault against educators.

2) A high (versus low) percentage of the total student expenditure allocated to certain key school program areas (e.g., pupil support services and student activities/athletics) is associated with a decreased risk of physical assault against educators.

3) A high (versus low) level of reporting of sufficient educational and teaching resources provided by the school is associated with a decreased risk of physical assault against educators.

This study utilized data collected from the Minnesota Educators' Study (MES) as well as school-level data reported to the Minnesota Department of Education (MDE) by Minnesota's Kindergarten through grade 12 (K-12) schools. The goal of the first phase of the MES was to determine the scope of the violence problem for Minnesota educators and to recognize the consequences of violence, including physical and emotional. The current study was based on demographic data collected from the MES comprehensive study and exposure data collected from the nested case-control study (Phase II), as well as school-specific fiscal spending and demographic data from the MDE.

Research Overview

This study was conducted as part of the Minnesota Educators' Study, which examined the work-related violence that occurs in school settings. Such work-related violence can be defined as the "intentional use of physical force or emotional abuse, against an employee, that ultimately results in physical or emotional injury and consequences." Such consequences may take many forms, including: 1) medical or health care treatment; 2) loss of consciousness, loss of awareness, or amnesia for any length of time; 3) restriction of or interference with regular activities for at least four hours. Work-related violence may be either physical or non-physical, however, this study focused on physical assault as the primary outcome of interest.

Throughout the MES, study participants were repeatedly provided with a written definition of physical assault: "when one is hit, slapped, kicked, pushed, choked, grabbed, sexually assaulted, or otherwise subjected to physical contact intended to injure or harm." This definition of physical assault is consistent with prior literature (Gerberich et al., 2004) and the National Institute of Occupational Safety and Health (NIOSH) (1996).

Participants were provided with written definitions of violence, relevant to the study, at each phase of the MES.

The study population of educators was selected for study, in part, because it is one of the few at risk professions for which a comprehensive database of names and contact information is readily available (from the Minnesota Department of Education). An initial screening survey was mailed to the cohort in order to establish eligibility. This screening survey was followed by two additional mailed questionnaire-based phases: Phase I (comprehensive study) and Phase II (case-control study).

Data were collected on demographics and injury occurrence and consequences, through the comprehensive survey, while data on various work-related exposures were collected through the case-control survey. Data collected from the Phase I instrument were used to 1) determine the rates and consequences of physical assault, and 2) to study the potential associations of physical violence and several educator and environmental characteristics. Phase II, involved a nested case control design, to examine the relations between potential risk factors (e.g., actual and perceived amount of resources in the school environment and allocation of resources to various school program areas) and physical assault.

MES cases were those participants who reported at least one student-perpetrated physical assault event, while controls were those who reported no physical assaults but were working during the twelve-month Phase I study period. Three controls were selected for each case. Cases reported on their exposures in the month prior to their assault, while controls reported on exposures that occurred during a randomly selected month in which they were working. Consideration of the controls as such, provided for a

random sample of the person-time for the entire cohort. Therefore, odds ratios generated from multiple logistic regression models, can be interpreted as rate ratios of the effect of exposures of interest on educators' risk of work-related violence.

For purposes of the multivariate analyses, pertaining to the current study, only educators who indicated the name of the public school in which they worked the most time were included. In addition, it was also necessary that the school-level fiscal and demographic information (i.e., data contained on the individual MDE school reports) was available from MDE for each educator's school.

Study Population

Study Cohort and Target Population

The Minnesota Department of Education maintains a list of all educators that have been licensed to teach in the state of Minnesota. As of July 2004, this list contained the names of 320,333 educators, as well as key variables on each educator, such as, date of birth, license type, education level, and name of the school in which they held their primary teaching appointment for the most recent school year (note: this variable was not complete for all educators and was only as current as the date or school year of their most recent teaching license renewal). This all-inclusive list is comprised of *all* educators who have been licensed to teach in the state Minnesota. Therefore, for the purposes of this study, only those educators with a current or "unexpired" license were identified as potential participants. Of the persons in the license record, 116,661 (36%) had a license expiration date of 2003 or beyond (this included individuals without an expiration date).

In an effort to reduce the number of mailings sent to ineligible educators, educators were excluded if they had a 'lifetime license.' Based on a pilot study, most were found to

not be eligible; only 3% of eligible responders had a lifetime license – a type of license that is no longer offered by the Minnesota Department of Education. In the state database, 43,622 (14%) educators were indicated as having 'lifetime licenses,' which did not have expiration dates. Further, the pilot study suggested that many more educators were licensed than were actively teaching (i.e., about 50% of licensed educators had not taught in the previous year). Upon, considering the exclusion criteria, the target population for the MES was approximately 117,000 licensed educators who had license expiration dates within the eligible range.

Initially, a randomly selected cohort of 26,000 educators (for which up-to-date address were determined for 25,996) was selected from the target population and a screening survey was mailed to them, beginning in April, 2005, in order to establish eligibility. There were 6,469 eligible, responders to the initial screener questionnaire. Responders to the screening instrument (n=6,469) were mailed a Phase I questionnaire and, based on Phase I responses, 372 cases and 1116 controls were identified for MES Phase II. Ultimately, 299 cases and 867 controls completed the MES Phase II questionnaire. For the purposes of the current study, it was necessary to limit inclusion to educators working in public schools that were identified by name. Thus, 238 cases and 640 controls were included in the analyses.

Datasets: MES and Minnesota Department of Education (MDE)

This study involved linking data reported in the Minnesota Educators' Study by educators (i.e., demographic variables and environmental exposures as reported in the two phases) with school-specific fiscal (i.e., school spending/expenditures) and demographic data associated with each educator's primary workplace (i.e., the school in

which reported environmental exposures and potential physical assaults would have occurred). Each dataset offers its strengths; the MES data offers the educator's perceptions of his/her school-level resource level, while the MDE data provide a detailed indication of actual annual dollar amounts spent in total and on various school program efforts. In combination, the two datasets provided the unique opportunity to examine the work-related assault research questions in an innovative way. In order to combine the datasets, however, it was necessary to correctly identify the school in which each reporting educator had experienced his or her exposures and assault(s).

MDE School-Level Data

Since the 2003-2004 school year, the MDE has required building-level accounting reports of the per student expenditures for each specific school site (1,859 public schools as of October 1, 2004) in Minnesota's 343 school districts. Districts report to the MDE the amount of money spent on education per pupil in their district and at each specific school within their district. Spending across schools in a district may vary, as per pupil spending can vary by grade level. The MDE also maintains a detailed record of how these funds (i.e., school resources) are allocated to various school program areas, both at the district and school levels. These fiscal data are published annually on the Minnesota Department of Education website as part of the state's school report cards which are issued for K-12 schools in Minnesota. In the economics of education literature, per student expenditure, (and the associated fiscal allocation variables collected by MDE), is utilized as the standard measure of schools' resource levels (Crone, 1998).

MDE School Report Cards

Public schools in Minnesota report to the MDE, their school-level indicators of success or failure, as well as demographic variables, and the previously mentioned fiscal spending variables. This information is compiled into a five to seven page-long "school report card" for each public school (**Appendix C**). Each standardized school report card contains data on three main areas: student, school, and educator demographics; student test results; and school financial reports. These report cards were developed in 2004. Since their debut, these school-specific reports have been updated annually and are available electronically on the MDE's web site.

Information contained in the State's school report cards, includes standardized test (i.e., Minnesota Comprehensive Assessment) results; student demographic information (e.g., number of students in the school, ethnic background of the student body; and percentage of limited English proficient (LEP), special education, and free and reduced price lunch students). Also reported is information regarding the school and district teaching staff, such as the number of educators in the school and their educational attainment levels and compensation rates. The section of the school report cards that is most relevant to this study, however, is the "Report to the Taxpayers," which details per pupil education expenditures and allocations at each school (**Appendix C**).

Unfortunately, the MDE school report card data are not complete for all K-12 schools in Minnesota. A small number of Minnesota schools – often small schools/districts or special programs housed within a school district – do not report complete fiscal information to the MDE and, therefore, incomplete data are reported on the electronic school report cards. Other demographic variables/items might also be "missing" from a

particular school's report card. In addition, data might not be available if a particular school had been recently closed.

In November, 2007, the MES research team submitted a request to the MDE to obtain a database of all the relevant school report card fiscal and demographic variables (for the 2005, 2006, and 2007 school years) in a more readily accessible file format than the electronic pdf versions of the individual school report cards which are accessible on the MDE web site. Data from multiple school years were requested, as the educators in our MES reported on physical assaults that occurred over multiple school years (i.e., 2.7% occurred in 2003-04; 92.7% in 2004-05; and 4.6% in 2005-06). This request was made such that each educator could be correctly assigned to the appropriate school-level fiscal and demographic exposure variables that corresponded their assault year (or, for controls, the school year in which they reported on their exposures). The MDE provided the requested data, however, fiscal data for the 2004-2005 school year was not available and, therefore, these data were manually extracted from the online school report cards, and subsequently validated.

MDE School Identification System

The Minnesota Department of Education uses a set of three numbers to identify K-12 public schools in Minnesota. Each school is identified by its school, district, and district type number. School district numbers are assigned by the State, as are the district type numbers. For example, the MDE assigned the number 270 to the Hopkins School District as its district number, and its district type number is one, indicating that it is an "independent school" district. There are several different district type classifications, however, "Independent Districts and Schools" (type 1) is by far the most common class.

Each school within a district also has its own school number, which is determined and assigned by the district. The combination of the three numbers is used to uniquely identify each K-12 school in Minnesota. Therefore, the accurate determination of the school in which MES respondents worked (i.e., their unique school identifier), in turn, allowed for determination of the MDE expenditure and demographic data associated with the respective schools.

Identification of Each Educator's School

On the final question of the MES Phase II questionnaire, participants were asked to "indicate the name of the school in which [they had] worked the most time" during the month prior to their indicated target month (i.e., month of assault for cases, and randomly selected month for controls) (**Appendix B**, Question #61). Some members of the MES advisory board, who consulted with the research team throughout the study, were concerned that educators might not want to identify their primary school of employment as they were reporting on potentially sensitive information about work-related violence. For this reason, this question was initially pilot tested with a response rate of approximately seventy percent.

Ultimately, the response rate for this particular question on the full study was approximately 93% (1080/1157). Responses to this question, however, varied in their completeness with some respondents providing limited information, such as only the geographic area where their school was located, or a district number. In order to correctly identify the school in which they had worked the most time, educators needed to provide a specific school name (and often, also a district number in the case of schools with common names). Approximately, 80% of respondents (920/1157) provided sufficient

information in their response such that the specific school where they worked the most time could be identified.

In the case of educators who provided only partial school names, or perhaps identified only their district (~14%), their response was cross-referenced with the most recent school of primary employment as listed on the educator's record in the MDE licensure database. Determination of an educator's school was further confirmed by consideration of individual educator's responses to other questionnaire items. For example, if the MDE database indicated that a teacher worked at a particular school, other MES questionnaire variables such as, school location, type of school and grade levels taught, were examined to validate that the school listed in the original MDE database was correct. In some cases, a teacher would write-in only their district name/number and, based on an examination of their other MES questionnaire responses, it was clear the teacher worked in an elementary school. Often, as is the case with smaller districts in Minnesota, there maybe only one elementary school in a district, thus, aiding in the accurate identification of the teacher's school of employment.

Exclusion of Private School Educators

All of the public schools in Minnesota are funded via the formulaic State General Education Revenue Program. Private schools in Minnesota, however, are funded by different mechanisms (i.e., tuition fees, private donations, etc.), and private schools' demographic and fiscal information is not publicly available from the Minnesota Department of Education. The large majority of Minnesota's educators and students work and receive their education in public school environments. There are approximately 828,304 students enrolled across the 1,859 K-12 public schools in the state of Minnesota;

while 86,835 students were enrolled in Minnesota's 532 private schools (as of October 1st, 2004) (MDE, 2005). The current study analyses do not include educators working primarily in private schools, as the funding mechanisms for these school are not comparable to other K-12 public schools.

Inclusion in the current study necessitated that an educator worked in a public K-12 school in Minnesota, and also sufficiently identified the public school in which they worked. Of the 1157 (i.e., 299 cases and 867 controls) educators who completed Phase II questionnaires, 1047 (90.5%) indicated they worked in a public school (i.e., public, public alternative, public charter, or public magnet). Meanwhile 97 educators (8.4%) indicated they had "worked the most" in the past year in a private school setting (i.e., private parochial or private non-parochial) (note: Nine educators failed to report in which type of school they worked the most time). Further, of the 1157 Phase II responders, 926 (79%) educators sufficiently identified the school in which they worked the most time. Of these 926 responders, 48 were excluded because they worked primarily in a private school. Ultimately, the current analyses included 808 educators (cases = 238 and controls = 640) who worked as licensed educators in identifiable K-12 public schools in Minnesota.

MES Contact Procedures

Initially, prior to Phase I, a randomly selected group of educators was identified to participate in a pilot study (n=300). The goal of the pilot study was to test the data collection instruments and methods. Based on pilot study results, it was determined that a large screening effort would be necessary to identify sufficient numbers of eligible (i.e., currently licensed and working) educators.

The screening questionnaire was followed up by mailed administration of both the comprehensive (Phase I), and subsequent case-control (Phase II) MES questionnaires. At each stage of the questionnaire mailings (pilot, Screening, Phase I and Phase II), participants were contacted up to four times (i.e., if no response to an initial mailing, up to three subsequent mailings were sent). Further, in the case where responses were unclear, inconsistent, or missing, participants were mailed letters (up to two times) requesting clarification of their response options.

Participants were informed, in a cover letter mailed with every questionnaire received, that their participation in the study was completely voluntary; they were also advised that, as a participant, they could choose to cross out any questions they did not wish to answer. Participants were also informed that refusal to participate in no way affected their relationship with any of the institutions involved in the research study. In addition, they were informed that any data provided would only be used in summary form to examine group-level characteristics and would never be used to identify any individuals or institutions.

Data Collection

Pilot Study

A pilot study was conducted to determine the efficacy of the study methods, as well as adequacy of the data collection instruments and accompanying materials (cover letters and information sheets) for each study phase. The pilot study materials were initially mailed in November 2004; however, 19 educators could not be contacted due to invalid addresses, despite rigorous methods employed. Of the initial randomly selected 300 pilot surveys, there were 163 responses (54%); 29 (18%) of these responders held lifetime

licenses, and only 101 (34% of 300) were eligible (four eligible responders had designated lifetime licensure). From this initial pilot effort, it was determined that a large proportion of educators maintained lifetime licenses but were not actively working. Among eligible responders, physical assault and non-physical violence rates of 9/100 and 31/100 persons per year, were identified.

Due to a lower than expected response rate and a low proportion of eligible subjects, it was determined that a large screening study was necessary to identify and recruit adequate numbers of subjects for the study. For the screening phase of the study, those with identified lifetime licenses were subsequently considered ineligible and deleted from further sampling. Minor modifications were made to the specially designed instruments and associated materials prior to implementation of the comprehensive and case-control components.

Screening Study

Initially, a random sample of 26,000 educators was selected from the target population of roughly 117,000 educators. From the random sample of educators' addresses submitted to the National Change of Address system, 25,996 valid and up-to-date addresses could be determined. These educators were mailed a screening survey (in two batches). Those contacted were initially mailed the screening survey in April, 2005. In order to be selected to receive this survey, educators had to have a license expiration date of 2003 or later (or a missing expiration date) and not be a lifetime license holder (exclusion criterion).

Questions on the one-page screening survey enabled verification of the identity of the intended respondent, requested the date on which this survey was completed, and

whether, or not, the respondent had worked as a licensed educator (K-12) in the past 12 months in the state of Minnesota. Respondents were deemed eligible if they indicated having worked as a licensed K-12 educator for any amount of time in the state of Minnesota, in the past 12 months. The response rate for this survey was 32% (8,316 of 25,996).

Phase I – Comprehensive Study

After establishing eligibility, participants were mailed a 17-page questionnaire, intended to determine the overall rates and consequences of physical assault and non-physical violence for Minnesota educators (**Appendix A**). Initial mailing of comprehensive study instrument occurred in June, July and August 2005. In an effort to improve recall, participants were asked only to recall general exposures and physical assault events for the previous twelve months. In addition, educators were instructed to provide information only about the school in which they worked or spent the most time in the past 12 months.

Initially, participants were asked to confirm whether they had worked in the twelve months prior to the date they completed the instrument. Respondents were then asked about characteristics of themselves as well as their work environments. Questions asked of the educators included: hours worked per month; the type (public, private, etc.), and location (urban, suburban, or rural) of school; primary professional activity; average age of students with whom the educator worked; number of hours of student contact per day; number of years as a licensed educator; topics taught; and typical class size, etc. Participants also provided demographic and socioeconomic information about

themselves, such as: level of education; gender; date of birth (age); household income; ethnic background; and marital status.

Participants were further asked about whether or not they had experienced work-related physical assault and non-physical violence, and to what extent, during the past 12 months. They were also asked to differentiate between discrete events of physical assault and multiple, on-going events, and provide details of the individual events. Such information included: the date and time and location of the assault; number of perpetrators; details about the perpetrator(s) (i.e., educator's relationship to, gender, age, race, and impairment status); types of objects used in the assault; and types of physical injury incurred and treatment sought. Questions were also posed to determine the outcomes of physical assault, such as restrictions of activities, lingering symptoms or feelings, absences from or changes in work, and whether the incident was reported.

Of the 8,316 eligible educators who returned sufficiently completed screening surveys, a random sample of 6,469 educators was sent the initial comprehensive questionnaire (in four batches of staggered mailings). Among the eligible responders who were mailed a Phase I questionnaire (n=6,469), 78% (n=5,038) returned a full survey while 6% (n=377) returned a short one-page questionnaire.

Phase II - Case-Control Study

Upon determining if a physical assault had occurred, the cases and controls could, then, be identified. Cases were those who reported at least one physical assault event in the past 12 months; for those who reported more than one event, within the prior 12-month period, the most remote event was utilized for analyses (note: This instrument was initially mailed in April, 2006, however, there were several batched mailings and follow-

up occurred over several months) (**Appendix B**). Ultimately, individual Phase II questions specifically pertained to each educator's specified reference month for assault (i.e., month prior to the target month in which their assault had occurred).

Controls, those who did not report any physical assault events, were randomly selected at a ratio of 3:1. Each control was randomly assigned a reporting month during which they had reported working. This sampling method ensured that the distribution of sampled calendar months represented the distribution of months worked.

For this phase of the study, the goal was to examine the potential associations between work-related physical assault and various exposures. Thus, this questionnaire again asked educators to provide demographic information as well as details about their school environments and their roles at the schools where they worked the most time. Questions focused on the month, or a time period, just prior to the case event or selected control month and, again, included: basic demographic information for the educator and school; topics and types of students taught; hours of student contact; potential stressors; presence of violence policies and assault deterrents (e.g., video monitors, metal detection devices, etc.) and perceptions of effectiveness regarding these items.

Participants were also asked whether various types of resources (e.g., up-to-date books and technology, human resources for students, necessary teaching tools for students, sports and musical equipment) were sufficient as provided by the school, and whether personal out-of-pocket purchases for classroom supplies had been made. Additional questions regarding school resources included two questions that inquired as to whether or not the school had:1) "sufficient economic resources to provide students with an environment in which their educational needs were being met;" and 2) "sufficient

economic resources to provide [the educator/respondent] with the necessary tools and supplies to teach your students effectively." In order to consider general school resource levels, educators were also asked to indicate if any school programs had been recently cut at their school and the percentages of students at their schools who were recipients of free or reduced price lunches. These questions were utilized to address Aim 3, whereby the primary exposure of interest was school resource level as measured by educators' responses to these questionnaire items.

In Phase II, respondents were asked to provide the name of the school where they worked the most hours during the study period. As previously mentioned, this question was critically important for the current analyses as it was necessary to identify specific school names in which educators worked. This allowed for identification of the relevant per student expenditure, fiscal and resource allocation dollar amounts that applied to each educator's working environment. Once district and school names were identified, detailed fiscal information pertaining to spending at the educators' individual schools could be obtained via the Minnesota Department of Education.

Of the 4,885 educators who sufficiently completed Phase I questionnaires, 1,488 educators were mailed the initial case-control questionnaire. Of these, 372 were identified as cases and 1,116 as controls. The response rate for Phase II was 78% (1166 of 1488); 1166 educators completed the entire long-form version of the Phase II questionnaire. Participants who did not respond after repeated contacts were mailed a short one-page version of Phase II, which was intended to determine the number of times they had experienced work-related assault during their target month. An additional 79 educators (5.3%) returned this short Phase II questionnaire (**Appendix B**).

Given that the current study analyses were limited only to those educators for which their primary school of employment was known, it is should be noted that 1080 of 1,116 (93%) responding educators provided some response to Phase II, question #61 (i.e., "indicate the name of the school in which you worked the most time"). Of these, 1001 (86%) of the responses could be linked to a specific school district number, while 926 (80%) provided enough information about their school of appointment to enable correct identification of their unique school number or specific school site. Several of these 926 educators worked in schools with other MES participants, as the 926 educators represented just 682 different school locations.

Case and Control Selection

Case Selection

Based on results of Phase I, cases (n=372) for Phase II of the MES were defined as all educators who reported having experienced at least one work-related physical assault event within the eligible 13-month period (i.e., including the month in which the survey was completed and 12 months prior). Of the 372 cases identified in Phase I, 299 returned a full Phase II survey. The research team decided to limit inclusion in the analyses to only those cases of student-perpetrated violence, thus the 290 educators who reported on their experiences with student-perpetrated violence were included.

For the purposes of the MES, work-related was defined as "any activities associated with your job or events that occur in your work environment." In the case of individuals reporting more than one event, the date of their earliest event was used to determine their case status. Physical assault was defined for participants as the "intentional use of physical force or emotional abuse, against an employee, that resulted in physical or

emotional injury and consequences." Physical violence included "physical assault, threat, sexual harassment, verbal abuse, and bullying."

Dates for physical assaults reported by educators occurred between July 2004 and December 2005. Thus, the educators' target months (or Phase II response time frame) potentially occurred during one of three different school years (i.e., 2003-2004, 2004-2005, or 2005-2006). This had significance, because the MDE school report cards are published annually (i.e., by school year) and, thus, these fiscal and demographic variables were necessarily matched according to the school year in which the violent event(s) occurred for each educator.

For the purposes of these analyses, only those educators working in public schools were included (**Figure 1**). Also, educators who did not identify the school in which they worked the most time were excluded, as their school-level MDE data could not be determined. In addition, there were several participants for which fiscal MDE data, pertaining to their primary school of employment, was not available (n=70). After consideration of these exclusion criteria, 238 cases were included in these analyses, of which 30 were missing MDE fiscal data. Thus, 238 of the 299 case educators (79.6%) who completed Phase II were included in these analyses.

Control Selection

For the MES, controls (n=1,116) were those educators who did not report, in the Phase I data collection, that they had experienced a physical assault in the 13-month period prior to and including the survey date. Controls were selected at a ratio of 3:1 to cases; 867 of the control educators who were mailed a Phase II questionnaire returned full completed surveys. For comparison purposes, each of the selected control educators

had one month randomly selected from their pool of eligible months (i.e., months in which they worked during the eligible 13-month range).

Again, the current analyses were limited to public school educators for whom their primary school of employment could be determined. In addition, inclusion also necessitated that MDE school report card data be readily available. Thus, 640 controls were included in these analyses, for which 40 were missing MDE fiscal data. Ultimately, 640 of the 867 control educators (73.8%) who completed questionnaires were included in the current analyses.

Data Analyses

The goal of the data analyses was to estimate the association between the exposures of interest (i.e., annual per student expenditures, allocation of school resources/expenditures to various program areas, and educators' perceptions of school resource levels) and the outcome of interest, work-related violence, while controlling for potentially confounding factors. Initially, univariate analyses were utilized to consider the relations between individual components of the exposure variables of interest and work-related physical assault. Next, multivariate modeling of the relations between the exposures of interest and the outcome were conducted (Breslow and Day, 1980). Bias can result when all confounders are not controlled for, while over-controlling for factors that are not confounders leads to imprecise estimates; therefore, a conceptual model (**Figure 2),** as well as causal models or DAGs for each of the exposures of interest (**Figures 3-5**) facilitated selection of variables to control for (i.e., potential confounders in each of the multiple logistic regression models) (Hernan et al., 2002; Maldonado and Greenland,

2002; Greenland et al., 1999). Attempts were also made to evaluate validity relevant to information bias through a health care validity sub-study.

Generalized estimating equations (GEEs) were used to account for correlated observations among educators working within the same schools, as the respondents represented hundreds of schools (n=682) (Liang and Zeger, 1986). Given the nested nature of the data, it was deemed likely that there may be correlations among individual respondents working in the same public schools. Therefore, hierarchical modeling techniques were used to address potential correlations between respondents within the same schools.

Aim 1: School Resources (i.e., per student expenditure) and physical assault

In order to address study Aims 1 and 2, it was necessary to rely on MDE data that were not reported in the Minnesota Educators' Study. For Aim 1, the outcome variable of interest was reported physical assault (yes or no) during the study period, while the primary exposure of interest was the level of total annual per student expenditure as reported to the MDE. This annual spending variable was operationalized as the total dollar General Fund operating expenditure per student per year at a given school. Primary exposure data (i.e., annual expenditure amounts) were matched to represent the year in which each educator had reported their responses on the Phase II questionnaire.

Logistic regression analyses were used to examine the relation between the amount of per student expenditure and physical assault. The level of per student expenditure was considered as a categorical variable (i.e., quartiles of spending). **Figure 3** identifies a DAG for the relations between physical assault and this exposure of interest. This model was used in the selection of potentially confounding variables to control for in the

analyses. For example, multivariate analyses included control for: school type; school location; school size; grades taught at school; per home property tax amount (district-level); student race/ethnicity; percent special education students; percent limited English proficiency students; and percent free/reduced price lunch students.

Aim 2: Allocation of per student expenditure and physical assault

For the purposes of Aim 2, the exposure of interest was the nature of school resource allocations. The MDE provides a breakdown of the manner by which each school has allocated its annual total expenditures into 10 different program areas (i.e., regular instruction; career and technical instruction; special education instruction; student activities/athletics; instructional support services, pupil support services; district level administration; school level administration; operations, maintenance and other; and student transportation expenditures). The relations between the proportion of the total annual expenditure allocated to each of these areas and physical assault against educators were examined through logistic regression analyses.

Initially, each component was considered univariately; then, multivariate analyses considered the relations between each of the exposures and physical assault, while controlling for relevant variables. Particular attention was paid to several of the program areas (i.e., pupil support services and student activities) that, based on previous research, may potentially demonstrate an impact on violence. The DAG (**Figure 4**) identifies the variables that were controlled for, including: per student expenditure; percent students receiving free or reduce percent lunch; several school characteristics; and student demographics variables, etc.

Aim 3: Educators' perception of school resources and physical assault

Evaluation of Aim 3 relied on self-reported exposure and outcome data from the case-control portion of the MES. The outcome of interest, again, was reported physical assault, while the exposure of interest was the school resource level, reported by the teacher, at his/her primary school of employment. On the Phase II questionnaire, educators were asked several questions, intended to serve as indicators of the general level of resources at their school (**Appendix B**). These questions included, whether the educators thought their schools had sufficient: economic resources to meet students educational needs; economic resources such that the teacher could effectively teach; and resources of several different types (e.g., books, technology, human resources for students, etc.). Educators were also asked if they had made personal out-of-pocket purchases of educational resources for students (e.g., crayons, books, or other supplies) and if any school programs had been recently cut due to a lack of resources or funds.

First, logistic regression analyses were utilized to consider the relation between each of these "exposures" and work-related assault. Multivariate regression analyses further explored these relations while controlling for confounders (**Figure 5**). These variables included: educator demographics; percent students receiving free or reduced price lunches; several school characteristics; and student demographic variables, such as school size and location, and grade levels taught.

Bias Evaluation

Information bias

The validity of any epidemiologic study is potentially jeopardized by errors in measurement of both exposures and outcomes of interest. Measurement errors of this

kind have been noted as significant because of the large amount of bias that may result (Dosemeci et al., 1990; Flegal et al., 1991). In this study, participants were relied upon to self-report their work-related violent events as well as their work-related exposures, thus, introducing the opportunity for significant error in measurement or bias. In order to account for such bias due to recall of events, the time period participants were asked to recall for the case-control study was a specific one-month period prior to the identified case event or the month randomly selected for the control. This method has been used in previous studies that have examined work-related assaults (Gerberich et al., 2005; Lee et al., 1999).

A sub-study was implemented to validate the reported work-related assault occurrence/treatment. A request for permission to contact health care providers was mailed to a sample of both cases and controls who were asked to provide the name(s) and contact information for any healthcare provider(s) they may have utilized for the period including the 13 month window plus six months prior and six months after. Providers were, then, asked to indicate whether or not an injury due to work-related violence was treated by them, and to provide information on the injury, using a simple check-off form. Ideally, this information could have been used to adjust the estimates of odds of physical assault by calculating a re-weighting factor, based on a comparison of medical record documentation versus self-reported physical assault (Mongin, 2001).

Unfortunately, due to a low response rate, results of this health care validity sub-study were not as informative as anticipated. Just 52 of 150 (35%) selected educators, responded in some way (i.e., 25 educators signed consent forms); 32 different health care providers returned completed forms for these 25 educators. Most health care providers

confirmed and validated the MES educators' reports of treatment or non-treatment (i.e., 18 (controls = 8, and cases = 10). Health care providers, however, returned conflicting reports for seven of the MES cases who had indicated that they had received treatment for a work-related injury. In these cases, doctors reported that no treatment had been provided during the specified period. It is possible that the health care providers may not have noted the treatments in the medical records, as most often these teachers had minor injuries and ongoing/multiple events, and worked with special education students. The low response rate is likely due, in part, to a climate in which individuals are, understandably, reluctant to grant researchers access to their medical records. Also, many of the MES educators who did not experience an incident, and, therefore, did not receive treatment, may not have appreciated the significance of their enrollment in the sub-study.

In addition, a validation sub-study of specific relevant exposures was also considered. Information, as reported by the MES participants, such as "percentage of students at your school ... receiving free or reduced price lunch?" was validated against the actual percentage of free/reduce price lunch students at a particular school, as indicated on the MDE the school report cards (these data are typically reported by a demographic data coordinator or administrator representative from each district or school site). There was reasonable agreement between the educators' responses and MDE reports (i.e., weighted Kappa coefficient = 0.7).

Selection bias

Selection bias should always be considered in epidemiology studies. For the cases identified in this study, all educators indicating an incidence of physical violence from Phase I were, then, included in Phase II as a case. There is a potential for bias if the cases

and selected controls were not, in fact, a random sample of the cases and controls of the larger cohort population. To account for this, Bootstrap methods, or re-weighting, was utilized to adjust for the potential biases due to non-response, as well as unknown eligibility of non-responders (Mongin, 2001; Efron and Tibshirani, 1993). Characteristics of educators such as, age, gender, basic skills training, highest degree obtained, and zip code, obtained from the Minnesota Department of Education's original list of licensed educators, were used to make these adjustments (Mongin, 2001).

Human Subjects' Protection

The Minnesota Educators' Study was approved by the Institutional Review Board (IRB) at the University of Minnesota (Study #9912S28741). The protocol for this specific study was also approved by the IRB (Study #0605E85666, 5/20/2006).

Possible risks the participants might incur were negligible. While participants may view divulging sensitive information about their work-related injuries as a potential risk, they were informed that all information they provided would be kept confidential. They were also advised that they could refuse to answer questions, which they considered sensitive, by placing an X through the relevant questions.

In order to maintain confidentiality of data, the following steps were undertaken: 1) surveys mailed to the research center were stored in locked filing cabinets; 2) any computerized files related to the study were stored on password-protected computers; 3) only researchers involved in the study had access to computerized and paper files containing data; 4) data were stripped of identifiers once the whole data set had been collected; 5) written reports contained no information which could be used to identify individuals or institutions.

One benefit to participants was having the opportunity to play a role in the acquisition of knowledge, which will be used to develop relevant strategies to reduce violence for their occupational group. As an added incentive, at the conclusion of the data collection, 250 of the responders were selected randomly, from those who indicated that they wished to participate in the drawing, to receive a $100 savings bond. Participation was not required for eligibility for the savings bond. This incentive method has been shown to increase participation in previous studies carried out by the investigators (Gerberich et al., 2005).

Summary

Few studies have explored the nature of work-related violence as it is experienced by educators. This study sought to examine the relations between several school resource factors and risk of work-related physical assault, by examining a large cohort of at-risk (i.e., working) educators. Given the nature of the outcome of interest, as is the case with many large epidemiologic studies, both the MES outcomes and exposures were self-reported, which has the potential to bias results. The design of this study however, allowed for the MES data to be complemented by quantitative data collected by the Minnesota Department of Education. Such data provided by the MDE also allowed for validation of several key self-reported variables. In addition, sensitivity analyses were also performed to determine the magnitude and direction of bias due to the presence of an unknown confounder. Ultimately, results of this study can inform school policy or intervention efforts that may potentially serve to reduce school violence, thereby, keeping our educators and others safer in school environments.

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TABLE 1
Definitions of Variables Used in Causal Models and Directed Acyclic Graphs

Variable	Variable Definition	As Measured By
School type	Type of school: public, public alternative, public charter/magnet	MES Phase II, Q1
School location	Location of school: rural, urban, suburban	MES Phase II, Q2
School size	Number of students enrolled at the school	MES Phase II, Q3
Student:teacher	Ratio of students to teachers, or number of students assigned to each educator at the school	MES Phase II, Q4
Overcrowding	Overcrowding in the classrooms of other school settings	MES Phase II, Q5
Grade levels taught	Grade levels taught at the school: K-12	MES Phase II, Q6
School resource level (i.e., educator's perception of resource level)	Educator's self-reported level of school resources	MES Phase II, Q17 – sufficiently equipped with economic resources to met students educational needs, Q18 – sufficiently equipped with specific resources: up-to-date technology, up-to-date books, human resources for students, other necessary teaching tools and supplies, sports equipment and facilities, and musical equipment and supplies, Q19 – sufficient economic resources for necessary tools and supplies for teaching students, Q20 – made personal out-of-pocket purchases for your students

		educational resources, Q21 – aware of any activities or programs cut due to lack of resources in last 12 months.
Work related physical assault	Educator reported physical assault	MES Phase I, Q19
Education	Educator's education level	MES Phase II, Q54
Income/SES	Educator's annual household income in year prior to target month	MES Phase II, Q56
Age	Age of educator	MES Phase I, Q80
% Free/reduce price lunch students	Percent of student body eligible for free/reduced price lunches	MDE school report card value (see Appendix C)
% Special education students	Percentage of student body enrolled in special education classes	MDE school report card value (see Appendix C)
% LEP students	Percentage of student body enrolled in limited English proficiency (LEP) classes	MDE school report card value (see Appendix C)
SES surrounding area	Average property tax paid per home in the school district	MDE school report card value (see Appendix C)
School resource level (per student expenditure)	Total annual per student expenditure	MDE school report card value (see Appendix C)
Student demographics	Student race	MDE school report card value (see Appendix C)

FIGURE 1
MES Selection, Response and Eligibility Counts

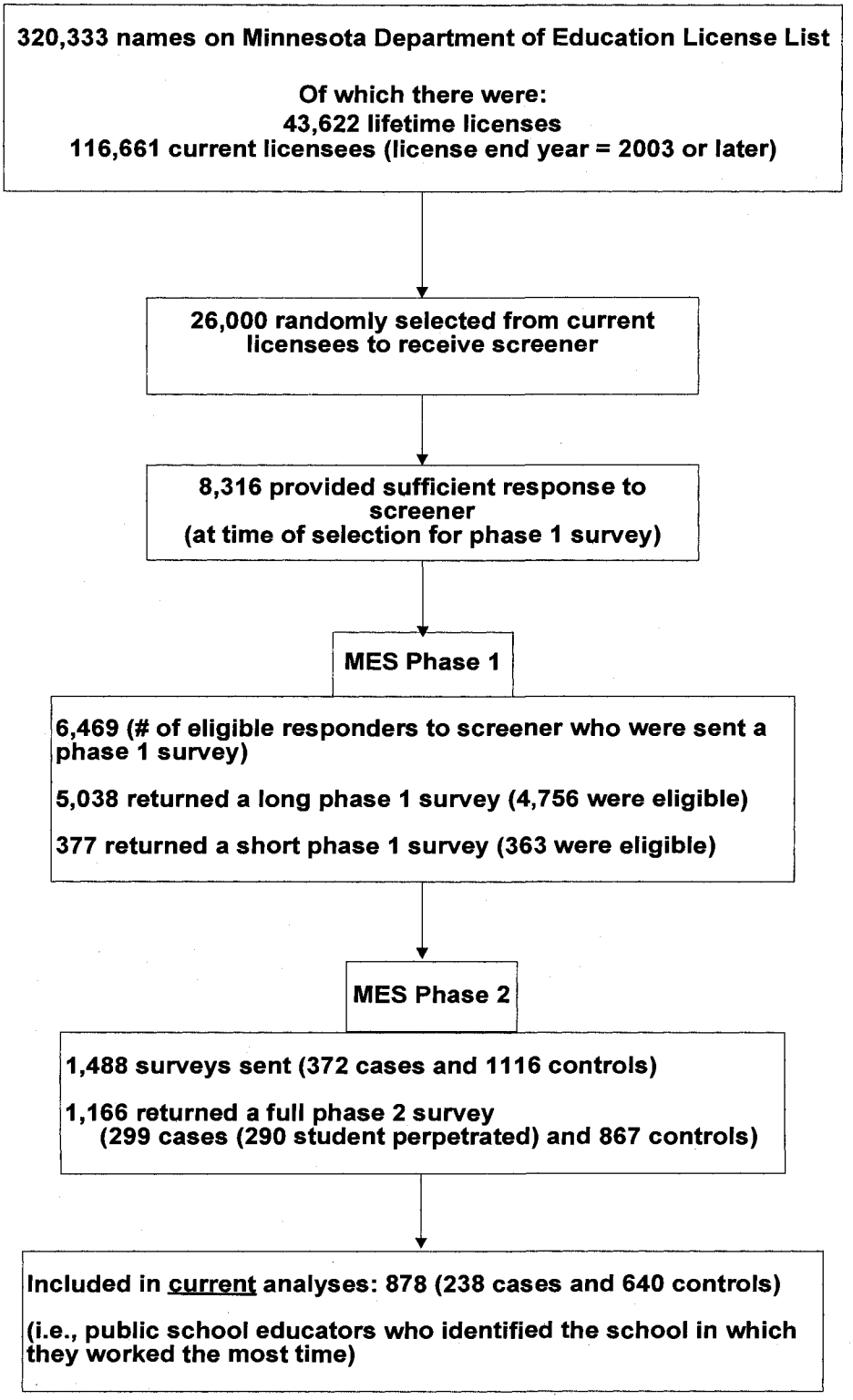


FIGURE 2
Conceptual Model – Characteristics of School Environments, Educators, Others in the Environments, and Physical Assault Against Educators

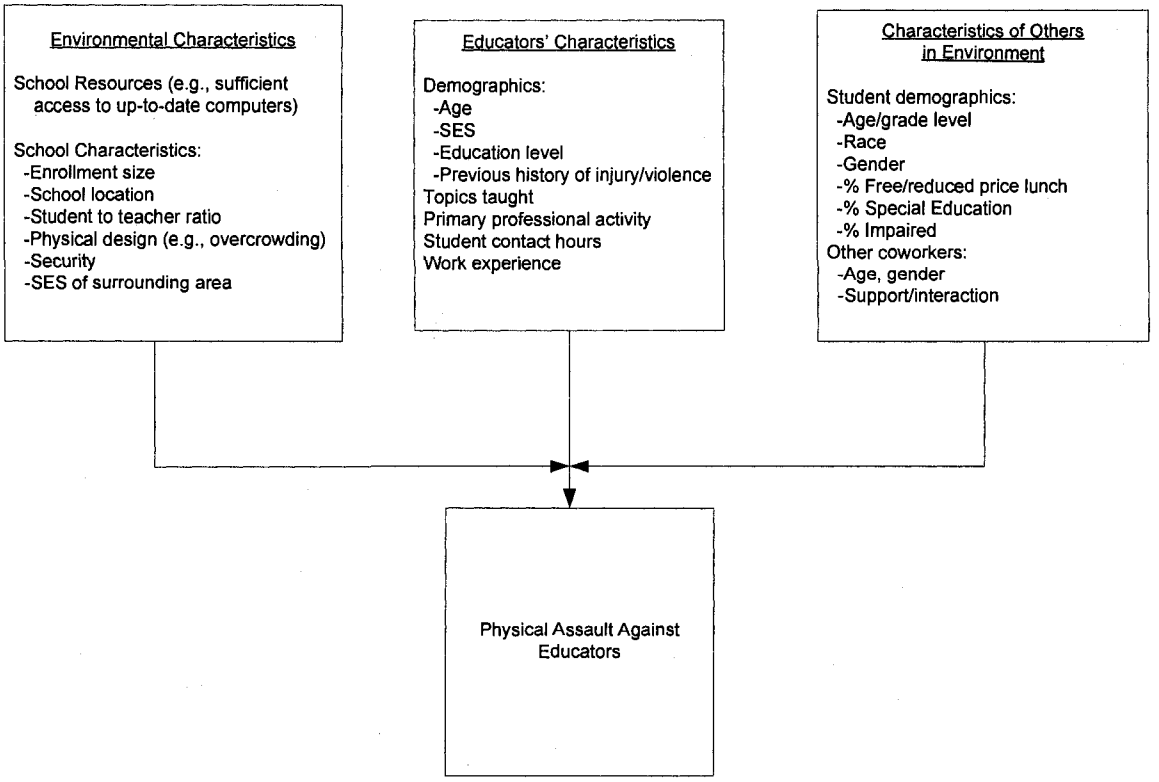


FIGURE 3
Causal Model/ Directed Acyclic Graph Pertaining to Aim 1: Relations between School Resource Level and Physical Assault

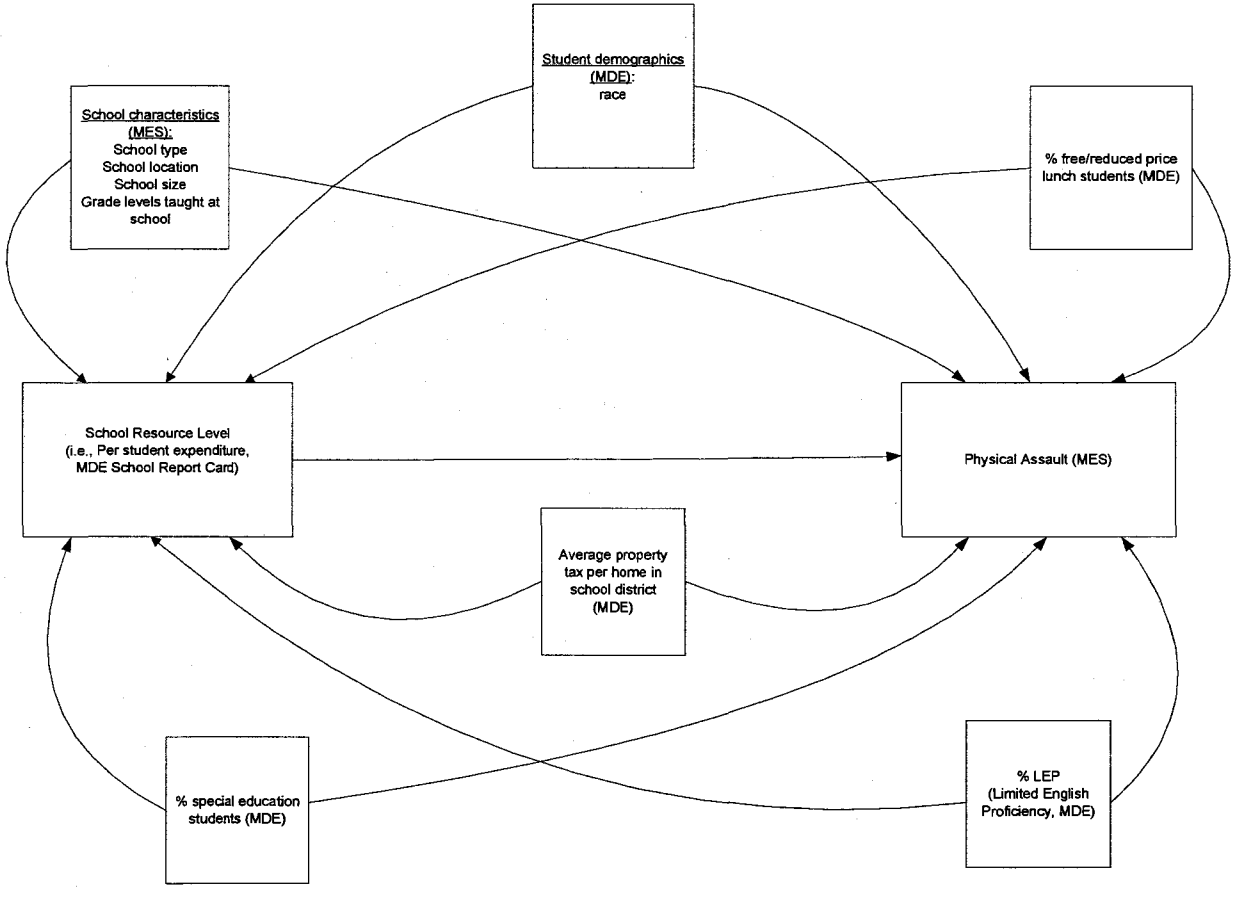


FIGURE 4
Causal Model/Directed Acyclic Graph Pertaining to Aim 2: Relations between School Resource Allocation to Specific Areas and Physical Assault

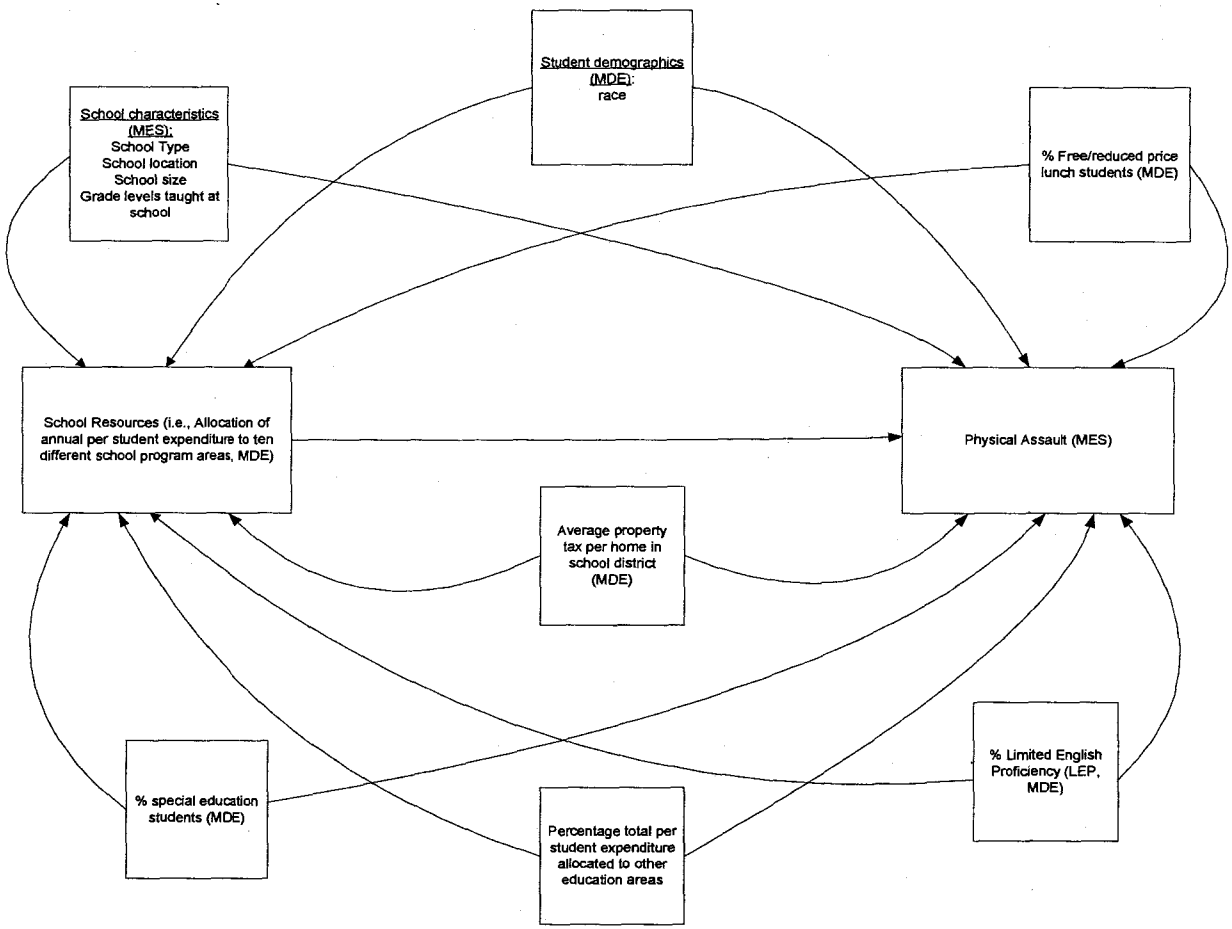
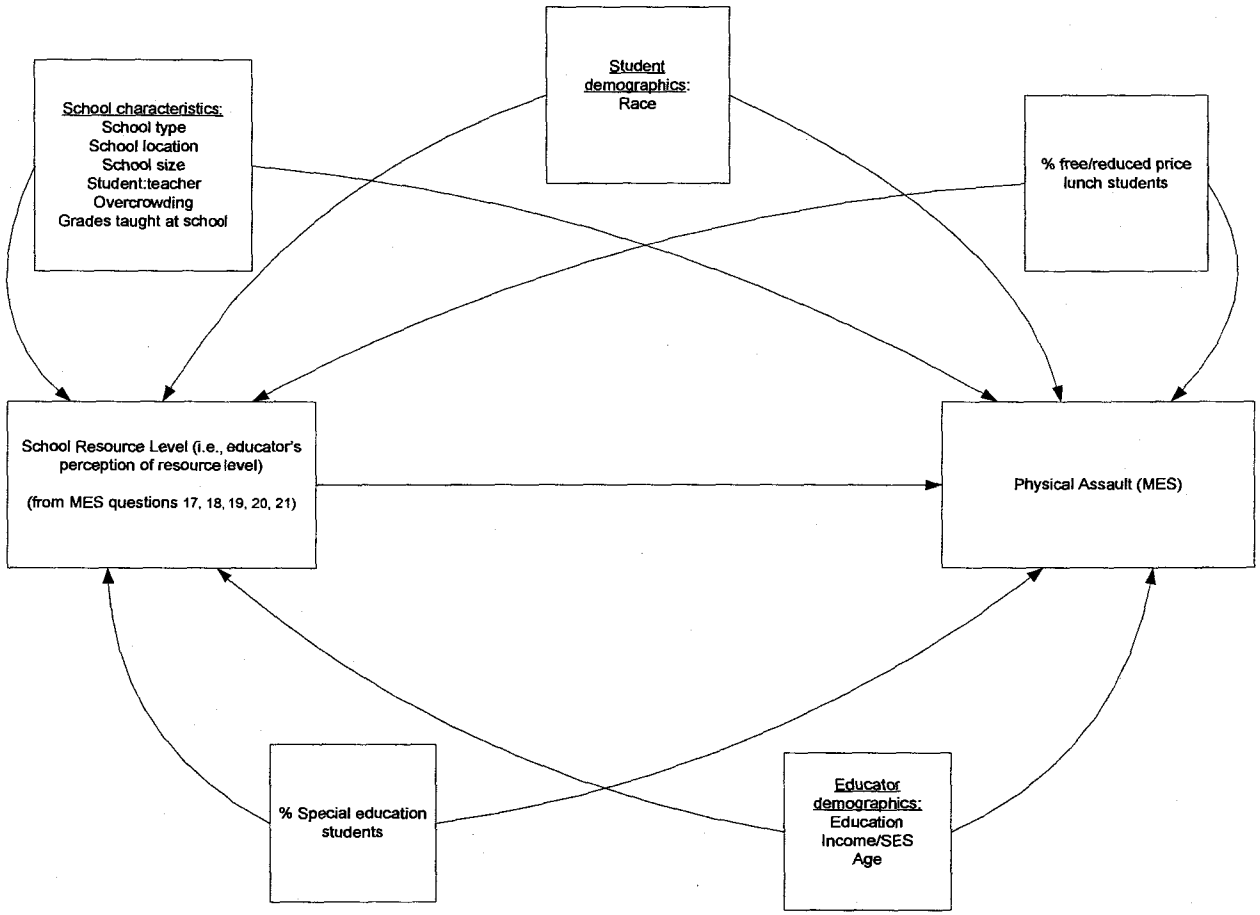


FIGURE 5

Causal Model/Directed Acyclic Graph Pertaining to Aim 3: Relations between School Resource Level as Measured by Educators' Perception and Physical Assault



CHAPTER 4

ASSOCIATION BETWEEN DISPARITIES IN SCHOOL EXPENDITURES, SCHOOL RESOURCES, AND RISK OF PHYSICAL ASSAULT AGAINST PUBLIC SCHOOL EDUCATORS IN MINNESOTA

ABSTRACT

To investigate the relation between schools' resource levels (i.e., per student expenditures per year) as well as disparities in school resource allocation, and physical assault against Minnesota's public school educators, a study was conducted from the two-phase Minnesota Educators' Study (MES) that incorporated school-level fiscal and demographic data from the Minnesota Department of Education (MDE). The MES examined a randomly selected cohort of state-licensed Kindergarten through grade 12 (K-12) employed educators. From mailed questionnaires, response rates for both Phase I (comprehensive data collection on violent events) and Phase II (case-control) were 84%. Cases experienced a work-related physical assault (PA) event in the previous 12 months; controls reported no assaults. The PA rate for educators was a minimum of 8.3 per 100 persons per year. Exposure data were collected for cases (month prior to event) and non-injured controls (randomly selected months). Based on the school in which they worked the most time and available MDE school-level data, together with MES questionnaire data, analyses were conducted on 238 cases and 640 controls. Average per student expenditures for cases and controls were $9,204 (S.D. = $2621) and $8,686 (S.D. = $2155), respectively, and were higher in urban than either rural or suburban schools. While increased spending was associated with increased risk of PA, at the univariate level, multivariate analyses using directed acyclic graphs (DAGs) to guide selection of confounders, suggested that increased spending was associated with decreased risk of

physical assault. Univariate level analyses also indicated that increased percentages of total expenditures allocated to several areas (i.e., percentage allocated to district level administration, career and technical instruction, student activities/athletics, and operations/maintenance expenditure) were associated with decreased risks of physical assault. At the multivariate level, analyses suggested that the highest quartiles of resource allocations, compared with the lowest quartiles (referents), were associated with decreased risks of physical assault for: district level administration; regular instruction; special education; student activities and athletics; and pupil support services expenditures. The associations between increased resource allocations to student activities expenditures and decreased risks of physical assault were the strongest. For example, an allocation greater than 5% of the total annual per student expenditure to student activities programming (referent, less than 0.04%) was associated with a decreased risk of physical assault (OR=0.30, 95% CI: 0.12, 0.77). This suggested that allocations of school resources (i.e., expenditures) to key program areas such as student athletics and extracurricular activities may reduce risk of work-related physical assault against educators. Research to further explore the nature of the relations between disparities in school resources and spending, resource allocations, and physical assault will be important to the continued development of relevant prevention strategies.

Keywords: occupational violence; injury; physical assault; educators; school resources; per student expenditures

INTRODUCTION

Background

The National Institute for Occupational Safety and Health defines work-related violence as violent acts, including physical assault and threats of assault, directed toward persons at work or on duty (NIOSH, 1996). Between 1993 and 1999, 18% of all violent incidents (i.e., 1.7 million non-fatal work-related violent acts), reported in the National Crime Victimization Survey (NCVS), occurred in the workplace (Duhart, 2001). Such work-related violence, both physical and non-physical, has only recently been recognized as a major public health problem. As is the case with school violence literature, the body of existing literature (and media focus) on work-related violence largely addresses the relatively rare incidents of violence that have resulted in fatal outcomes (i.e., homicides, accounting for 0.1% of all violent work-related victimizations), rather than the more common non-fatal violent events and associated risk factors (Duhart, 2001).

Across the nation's workforce, during 1993 to 1999, violent crime was experienced by individuals, while working, at a rate of 12.6 per 1,000 persons per year (Duhart, 2001). Certain occupational groups and/or types of workplaces, however, have an elevated risk of work-related violence. For example, those working in law enforcement, medical, mental health, teaching, retail sales, and transportation occupations reportedly incurred 38% of all work-related violent victimizations (Duhart, 2001). Between 1993 and 1999, teachers working in elementary, junior and high school, and special education experienced 8% of all violent work-related victimizations (Duhart, 2001). During the 2003-2004 school year, teachers experienced an estimated 253,100 threats of injury and

127,500 physical attacks by students in elementary and secondary schools (Dinkes et al., 2007).

In spite of the demonstrated risk of work-related violence for educators, exploration and resulting knowledge of school violence has largely focused on student-on-student incidences of violence (Casteel et al., 2007). In some instances, cross-sectional surveys of educators, rather than rigorous methodological studies, have served to guide our limited understanding of the risk factors for violence that educators may face while working in school environments.

In general, areas with access to fewer resources are typically more hazardous than areas rich in economic, human, and social capital. Low-income and resource-poor populations are more likely to be exposed to toxic wastes, water pollution, high levels of ambient noise, as well as poorer quality housing, school and work environments (Evans, 2002). Higher rates of violence and injuries also often occur in low socio-economic status (SES) environments (Krug, 2002; Winett, 1998; Baker et al., 1992). In general, those of lower SES or who reside in lower SES neighborhoods, bear a greater portion of the injury burden than those of higher SES (Sampson, 1989). While there has been an association identified between violence and poverty or lack of resources among individuals and communities, this association has not yet been explored within the context of schools (i.e., Do schools' resource levels - or lack of resources - impact school violence?).

The objective of this study was to investigate the relations between disparities in school resources and funding (i.e., per student expenditures) and subsequent school resource allocations, and work-related physical assault (PA) experienced by Minnesota's primary and secondary public school educators. Specifically examined, relevant to PA,

were the relations between the quantifiable level of per student expenditures (e.g., total annual state-reported K-12 General Fund operating expenditure per student) and the relations between disparities in school-level allocations of the total per student expenditures (i.e., school resources) to various school program areas, including pupil support services and student activities/athletics, etc.

METHODS

Overview

This study involved linking self-reported data by educators in the Minnesota Educators' Study (i.e., demographic variables and environmental exposures), with school-specific fiscal (i.e., school expenditures and allocations) and demographic data from the Minnesota Department of Education (MDE). The MDE data were associated with each educator's primary workplace (i.e., the school in which their reported environmental exposures and potential PAs would have occurred). Each of the datasets, MES and MDE, offered unique strengths; the MES data provided the educators' perceptions of his/her school environment, while the MDE fiscal and demographic data provided a detailed indication of school level demographics and actual annual dollar amounts spent on education and various education program efforts. In combination, the two datasets provided a unique opportunity to examine the work-related assault research questions in an innovative way. Approval to conduct this study was received from the Institutional Review Board for Human Subjects, University of Minnesota.

Target Population

The MDE maintains a list of all educators who have been licensed to teach in the state of Minnesota (MN). This list contained the names of all educators ever licensed to teach

in MN, as well as key variables on each educator, such as, date of birth, license type, education level, and name of the school in which they held their primary teaching appointment for the most recent school year. Educators with a license expiration date prior to 2003 were excluded. Results of a pilot study (n=300) indicated that "lifetime license" holders could also be excluded; only 3% of eligible responders had a lifetime license and, of these, a large proportion were deceased or not working. Upon, consideration of the exclusion criteria, the target population for the MES was approximately 117,000 licensed educators who had license expiration dates within the eligible range.

Initially, a cohort of 26,000 educators was randomly selected from the target population and, in order to establish eligibility, a screening survey was mailed to them, beginning in April, 2005; 6,469 eligible, responders were identified. Responders (n=6,469) were, then, mailed a Phase I questionnaire to ascertain the magnitude of violence against educators, including PA occurrence; based on responses, 372 cases and 1116 controls (1:3) were identified to be included in the MES Phase II case-control study.

The response rate for each Phase of the MES Phase was 84%, and ultimately, 290 (student-perpetrated) cases and 867 controls completed the MES Phase II questionnaire. For the purposes of the current study, it was necessary to further limit inclusion to educators working in public schools, identified by name by the educator, because private school funding mechanisms are neither uniform nor publicly available. Thus, 238 (82%) cases and 640 (74%) controls were included in these analyses.

Data Collection

MES data were collected via mailed questionnaires

(http://www1.umn.edu/cvpc/research.html). Initially, the MES involved a screening survey that was followed by two additional mailed questionnaire-based phases: Phase I (comprehensive study) and Phase II (case-control study). Data were collected on demographics and violent (both physical and non-physical) occurrences and consequences, through the comprehensive survey, while data on various work-related exposures were collected through the case-control survey. Data collected from the Phase I instrument were used to 1) determine the rates and consequences of PA, and 2) to study the potential associations of physical violence and several educator and environmental characteristics.

Questions on the Phase I survey asked about a specific time period in which the educator had worked. Respondents were asked about characteristics of themselves as well as their work environments. Data collected included: number of hours worked per month; the type (public, private, etc.) and location (urban, suburban, or rural) of school; primary professional activity; average age of students with whom the educator worked; number of hours of student contact per day; number of years as a licensed educator; topics taught; and typical class size, etc. Participants also provided demographic and SES information about themselves. Further, participants were asked whether or not they had experienced work-related PA, and to what extent, during the past 12 months.

Phase II, involved a nested case control design, to examine the relations between potential risk factors (e.g., actual and perceived amount of resources in the school environment and allocation of resources to various school program areas) and physical assault. Questions focused on the month, or a time period, just prior to the case event, or a randomly selected working month for controls, and included various environmental

exposure questions, such as: topics and types of students taught; hours of student contact; whether various types of resources were sufficient as provided by the school (e.g., up-to-date books and technology, human resources for students, necessary teaching tools for students, sports and musical equipment); whether personal out-of-pocket purchases for classroom supplies were made; and whether there were other potential stressors or the presence of written violence policies and assault deterrents.

The school-specific fiscal and demographic data, associated with each educator's primary workplace, were provided by the Minnesota Department of Education. These variables included several demographic characteristics of the schools such as student body race/ethnicity, average annual property taxes paid per home in the district; and percentage of students receiving free/reduced price lunches, special education curriculum, and limited English proficiency (LEP) curriculum. In addition, the MDE provided data indicating the total annual per student operating expenditure at each K-12 school and a breakdown of the manner by which each school had allocated its annual total per student expenditure into 10 different operating expense program areas (i.e., regular instruction; career and technical instruction; special education instruction; student activities/athletics; instructional support services, pupil support services; district level administration; school level administration; operations, maintenance and other; and student transportation expenditures) (**Table 1**). In general, a school's operating expenditures are used for the day-to-day costs associated with operating a school (i.e., educational supplies and programs and various purchased services, as well as salaries and benefits for educators and other school staff) (St. John, 2007).

Case and Control Selection

Case Selection

The MES yielded 372 cases who had reported having experienced at least one work-related physical assault event within the eligible 13-month period. In the case of educators who experienced more than one event, the most remote event was considered for analyses. For the purposes of these analyses, only those educators working in public schools who identified the school in which they worked the most time were included. Ultimately, 238 of 290 (82.1%) student-perpetrated MES cases, who met these criteria and completed full MES surveys, were included in the analyses.

Control Selection

Controls (n=1,116) were identified as those educators who did not report, in the MES Phase I data collection, that they had experienced a physical assault. Controls were selected at a ratio of 3:1 to cases; 867 of the control educators who were mailed a Phase II questionnaire returned full completed surveys. For comparison purposes, each of the selected control educators had one month randomly selected from their pool of eligible months (i.e., months in which they worked during the eligible 13-month range). Again, the current analyses were limited to public school educators for whom their primary school of employment could be determined. Thus, 640 of 867 (73.8%) MES controls were included in the analyses.

Data Analyses

The goal of the analyses was to estimate the association between the exposures of interest (i.e., annual per student expenditures and allocation of these school resources/expenditures to various program areas) and the outcome of interest – work-

related violence – while controlling for potentially confounding factors. Initially, each component was considered univariately; then, multivariate logistic regression modeling of the relation between the exposures of interest and the outcome were conducted (Breslow and Day, 1980). Directed acyclic graphs (DAGs) were developed for each of the exposures of interest (**Figures 1-2**) to facilitate selection of potential confounding variables for control (Hernan et al., 2002; Maldonado and Greenland, 2002; Greenland et al., 1999). Generalized estimating equations (GEEs) were used to account for correlated observations among educators working within the same school (Liang and Zeger, 1986). Re-weighting, was utilized to adjust for the potential biases due to non-response, as well as unknown eligibility of non-responders (Mongin, 2001; Efron and Tibshirani, 1993). Sensitivity analyses were also performed to determine the magnitude and direction of bias due to the presence of an unmeasured confounder (Rothman et al., 2008).

The annual per student expenditure exposure variable was considered as a categorical variable. In addition, the ten expenditure allocation exposure variables were also characterized as categorical variables (e.g., percentage of the total annual expenditure amount allocated to each of ten education program areas). Consideration of the allocation of variables as a percentage of the total annual expenditure was intended to account for the differences in total annual expenditures across schools. Determination of the quartile cut-points were based on the data distributions.

RESULTS

Response rates to the MES Phase I and II were both 84%. The overall PA rate for educators was 8.3 per 100 persons per year. Analyses for this study were limited to student-perpetrated incidents of PA experienced by public school educators who

sufficiently identified the names of the school in which they worked the most time. Thus, 238 of 290 (82.1%) MES cases, and 640 of 867 (73.8%) MES controls were included in these analyses.

The demographic, occupational, and school characteristics, as reported by the cases and controls are presented in **Table 2.** Cases and controls were both primarily female (i.e., >75%) and similar in age. The majority of both cases and controls were also working full-time (>80%) in non-charter/alternative/magnet public schools (>88%). Educators who experienced PA tended to work with younger students (i.e., primarily K-6 grades) in schools with smaller student bodies (i.e., <1000 students). Cases were more likely to work in urban school environments. In addition, cases (versus controls) were more likely to cite their primary professional activity as working specifically with special education students (41% versus 13%) rather than as traditional classroom teachers with non-special education students.

School-level fiscal and demographic data were provided by the MDE. These characteristics of the schools, in which participants worked, are summarized in **Table 3.** Annual per student expenditure varied by school location, with total annual spending reported as highest in urban, compared to rural and suburban schools ($10,400 versus $8,521 and $8,238 per student per year). In addition, educators working in schools in which annual per student expenditure was high (i.e., >$9,350), were more likely to be cases (29% versus 21%). Further, in schools in which an educator had reported a physical assault, there were higher percentages of students receiving free or reduced price lunches, participating in special education classes, and with limited English proficiency (i.e., LEP). In addition, the schools in which cases worked, were more often located in urban

areas and had higher percentages of students of color (i.e., African American, American Indian, Asian, and Hispanic/Latino).

Data provided by the MDE included the annual per student expenditure at each of the schools in which MES participants worked, as well as a detailed account of how this total expenditure was annually allocated to each of ten operating expense areas. The means of education expenditures at the schools in which educators worked the most time differed significantly (i.e., $p<0.05$) between case and control educators in terms of total annual per student expenditure, as well as resources (i.e. expenditures) allocated to regular instruction, career and technical instruction, special education instruction, school level administration, student activities and athletics, and instructional support services.

Table 4 identifies results of the univariate and multivariate level analyses. Initially, the total annual expenditure exposure variable and, then, each of ten expenditure allocation areas were considered univariately (Model 1). Next, multivariate analyses considered the relations between each of these eleven main exposures and physical assault, while controlling for relevant variables. Both of the multivariate models (2 and 3) were weighted to account for non-response and unknown eligibility, while Model 3 was also adjusted for all of the other expenditure exposures or allocation percentages (i.e., excluding the main expenditure exposure under consideration in each respective model). Overall, the odds ratio estimates and 95% confidence intervals, in Models 2 versus 3, did not vary greatly with the addition of the additional expenditure allocation covariates (these variables were not highly correlated as suggested by Pearson correlation coefficients).

In terms of annual per student expenditure, results of the categorical univariate model, suggested that, compared to educators working in schools with an expenditure of less than $7,600 per student, educators working in schools with a higher annual per student expenditure (i.e., >$9,350) experienced an increased risk of physical assault (OR 1.94, 95% CI: 1.18-3.18). Also, those educators working in schools that did not provide fiscal data to the MDE (i.e., "missing" expenditure data), were at elevated risk of physical assault (OR 2.97, 95% CI: 1.60-5.52); those schools tended to have smaller school enrollments and were more likely to be urban, non-traditional public schools (i.e., public magnet or charter). In addition to "missing" values for MDE-reported total annual per student expenditure, 59% of those schools were also missing values for percent free/reduced price lunches, LEP, and teaching special education students, as well as student body race/ethnicity demographic breakdowns.

The observed trend in positive association between increased per student expenditure and risk of physical assault at the univariate level was not confirmed in the adjusted multivariate models (Model 2). Although the multivariate results exploring the relations between disparities in annual per student expenditure and assault were not important, statistically, the results suggested that an increased expenditure (i.e., highest quartile versus reference group) was associated with decreased risk of assault (OR 0.82, 95% CI: 0.41-1.62). In addition, the "missing" MDE fiscal data showed insignificant, but decreased risk of PA (OR 0.44, 95% CI: 0.03-6.49) after controlling for several confounding variables in the multivariate model.

Additional important findings from the univariate model suggested decreased risk of physical assault (OR 0.53, 95% CI: 0.31-0.91) associated with increased expenditures on

district level administration (i.e., greater than 5% of total expenditure allocated to district level administration versus the referent of less than 3%). Further, at the univariate level, increased spending on career and technical instruction (less than 0.2% versus 0.8% to 2.8% and greater than 2.8%) was associated with decreased risks of PA (OR 0.47, 95% CI: 0.26-0.85; OR 0.30, 95% CI: 0.16-0.60). Increased resource allocation to operations/maintenance (i.e., less than 7% versus all other higher levels) was also associated with decreased risks of PA; although these results were not statistically important. At the both the univariate and multivariate levels, moderate levels of allocations to student transportation and school level administration were associated with increased risk of PA. For example, important results at the multivariate level suggested that allocations of 5.5 to 6.5% of the total education expenditure to student transportation (versus the referent of less than 4.5%) was associated with increased risk of assault (OR 1.8, 95% CI: 1.02-3.15). And, at both levels, allocation of 3.4 to 4.3% (compared to referent of less than 3.4%) to school level administration was associated with increased risk of assault (OR 1.92, 95% CI: 1.10-3.37; OR 1.9, 95% CI: 1.07-3.35).

Educators who worked in schools with the highest quartile of percentages allocated to student activities and athletics expenditures (i.e., greater than 4.8%), experienced decreased risk of PA in the univariate model analysis (OR 0.25, 95% CI: 0.15-2.56), as well as both multivariate model analyses (OR 0.40, 95% CI: 0.19-0.83; OR 0.30, 95% CI: 0.12-0.77). Although results, pertinent to some of the other levels of allocations, did not appear to be important, the trends suggested consistent decreased risks of PA associated with increased allocations to student activities and athletics (i.e., a dose-response relationship).

Sensitivity analyses were conducted to consider the effect of an unmeasured confounder; an example of this confounder is the provision of additional resource funds by outside, private groups (such as a "booster club") that are not documented in the available MDE fiscal records. Using methods as described by Rothman et al. (2008), sensitivity analyses were used to examine the potential impact - in terms of magnitude and direction of bias - of the presence of an unmeasured, unknown confounder. From the current study, results suggested that increased allocation of resources to student activities and sports programming was associated with decreased risks of PA for educators. Analyses were conducted whereby the prevalence of an unmeasured confounder among educators who were exposed to high levels of sports and activities resources (i.e., greater than 5% of the total expenditure allocated to sports and activities) was equal to, less than, and greater than the prevalence among those unexposed educators. The sensitivity analyses demonstrated that if the odds ratio for the association between the unmeasured confounder and work-related PA is less than one (e.g., OR = 0.1) and the prevalence of the confounder is greater among educators with high levels of sports resources than among those without (i.e., 0.9 and 0.3, respectively), then the protective effect of the exposure could be reversed (e.g., OR changes from 0.3 to 1.15); however, results of the sensitivity analyses considered only the point estimate and not the precision of the estimate (**Table 5**).

DISCUSSION

Although the relation between per student expenditure and several student outcomes had been previously explored, the relations between school resources or per student expenditure, resource or expenditure allocations, and school violence had not been fully

explored. In Minnesota, the state legislature determines the complex formulaic mechanisms that dictate the amount of funding or resources appropriated to a given school district. Individual school boards, in turn, determine how to allocate these school resources across the schools within their districts (approximately 75% of funds are discretionary and, thus, are allocated as the school board determines). School boards are, of course, constrained by the total annual education dollars for which the schools in their district qualify. State fiscal budgets often do not allow for the desired increases in K-12 education expenditures, and existing literature offers little indication that increases in overall per student expenditures indeed lead to positive outcomes. Therefore, it is important to consider if the manner by which school boards allocate existing school education funds to various program areas might impact student outcomes, such as violence.

Results of this study, for example, suggested that increased allocation of a greater proportion of a school's total annual expenditure to student activities and athletics programming is associated with a decreased risk of PA for the educators working in these environments. Additional funds allocated to this critical programming area, in turn, provides opportunities for extracurricular activity involvement for more students, (i.e., fostering cooperation and socially appropriate behavior), thereby, potentially reducing students' delinquent and violent behaviors. This study finding is consistent with some previous research which has indicated participation in extracurricular activities and sports, for K-12 students, is associated with pro-social behavior or other positive educational outcomes (Langbein and Bess, 2002; Eccles and Barber, 1999; Segrave and Hastad, 1984).

Limitations

This study focused on school resources, measured as the total amount of per student operating expenditure (i.e., day-to-day operations costs). This is considered the traditional measure of a school's fiscal resource level; however, there are also other potential unmeasured school resources, such as parental support or local community support and involvement (both of which may provide monetary or social support). Such unmeasured resources may also play a role in reducing student's acts of aggression and violence in the school environment.

Given the self-reported nature of the work-related violence events and other exposures, there were several other potential biases to account for; recall, information, misclassification, selection biases; and confounding. Recall bias was addressed by limiting the recall period to the previous 12 months for assaults and one month for exposures (Gabel and Gerberich, 2002; Gerberich et. al., 2005; Gerberich et. al., 2004). To further reduce information bias, educators were also followed-up by mail to clarify missing or unclear information provided on survey instruments. Response bias was considered by inversely weighting observed responses by probabilities of response, which were estimated as a function of the educator variables in the MDE license database (Horvitz and Thompson, 1952). Unknown eligibility among non-responders was addressed by accounting for the probability of eligibility, based on these same licensure list variables (Mongin, 2001). In an effort to reduce the effect of confounding, DAGs guided the selection of potential confounders for logistic regression analyses (Greenland et al., 1999). Sensitivity analyses were also utilized to examine the potential impact of an unmeasured confounder (Rothman et al., 2008).

Conclusions

This study was unique in that it combined self-reported information from educators with fiscal and demographic data from the MDE to address the work-related school violence question. Previous efforts to examine this issue have primarily relied on cross-sectional surveys of teachers rather than quantitative analyses of case control data in conjunction with MDE-reported, school-specific fiscal and demographic variables.

Given that most K-12 schools must work within the confines of limited school resources (i.e., often requests for more education funding are not readily met), it is critical to understand how allocation of existing resources to key education program areas might have a positive impact on reducing violent outcomes in schools for *both* educators and students. This study is an initial step in improving our understanding of the nature of the relations between schools' expenditures and resource allocations, and physical assault. Future studies, might also further explore how changes in school resources or education expenditures over time might, in turn, impact violent outcomes in schools.

ACKNOWLEDGMENTS

Support for this research was provided by the: National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention, Department of Health and Human Services (R01 OH007816); Midwest Center for Occupational Health and Safety (NIOSH Training Grant T42 OH008434); Center for Violence Prevention and Control, University of Minnesota; and Regional Injury Prevention Research Center, University of Minnesota. Additional gratitude is offered to the entire research team, as well as our advisory board of educators and school administrators, each of whom offered invaluable insights into this research effort. This study would not have been possible without the contributions of thousands of dedicated K-12 educators working in Minnesota's schools. These committed individuals deserve to work in safe environments.

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TABLE 1
10 General Fund Operating Expense Allocation Areas
Minnesota Department of Education, (Report to Taxpayers Overview), 2005

10 General Fund Expenditure Allocation Areas:	Expenditures To Be Used for the Following School Programming Efforts:
1. Regular Instruction	Expenditures for elementary and secondary classroom instruction, not including vocational instruction and exceptional instruction.
2. Career and Technical Instruction	Expenditures in secondary schools for instruction that is related to job skills and career exploration. Includes expenditures for home economics, as well as industrial, business, agriculture, and distributive education.
3. Special Education Instruction	Expenditures for instruction of students who, because of atypical characteristics or conditions, are provided educational programs that are different from regular instructional programs. Includes expenditures for special instruction of students who are emotionally or psychologically disabled, or mentally retarded; for students with physical, hearing, speech, and visual impairments; and for students with special learning and behavior problems.
4. Student Activities/Athletics	Expenditures for all student extra and co-activities and student sports programs. They may or may not be offered for school credit.
5. District Level Administration	Expenditures for district-wide services including school board, superintendent district office, and general administrative support including the costs of their immediate offices.
6. School Level Administration	Expenditures for activities of administrators and their offices responsible for a school, a group of schools or an instructional area.
7. Instructional Support Services	Expenditures for activities intended to help teachers provide instruction, not including expenditures for principals or superintendents. Includes expenditures for assistant principals, curriculum development, libraries, media centers, audio visual support, staff development, and computer assisted instruction.
8. Pupil Support Services	Expenditures for all non-instructional services provided to students, not including transportation and food. Expenditures for counseling, guidance, health services, psychological services, and attendance and social work services.
9. Operations, Maintenance and Other	Expenditures for operation, maintenance, and repair of the district's buildings, grounds, and equipment (includes expenditures for custodians, fuel for buildings, electricity, telephones, and repairs). Other expenditures include dues and memberships, judgments against the school district, and any other expenses not otherwise classified.
10. Student Transportation	Expenditures for transportation of students, including salaries, contracted services, fuel for buses, and other expenditures.

TABLE 2
Educators' Demographic and School Characteristics by Case-Control Status – Minnesota Educators' Study Data

Educator Characteristics –		Cases (n = 238)	%	Controls (n = 640)	%
Educator Gender					
	Female	190	79.8	488	76.3
	Male	48	20.2	152	23.8
Educator age					
	Less than 30	20	8.4	43	6.7
	30 to < 40	51	21.4	146	22.8
	40 to < 50	64	26.9	176	27.5
	50 to < 60	93	39.1	236	36.9
	60 or older	10	4.2	39	6.1
Teaching Job Classification					
	Full-time contract	212	89.1	530	82.8
	Part-time contract	12	5.0	65	10.2
	Long-call substitute	3	1.3	8	1.3
	Building substitute	1	0.4	1	0.2
	All other substitutes	7	2.9	35	5.5
	Missing	3	1.7	1	0.2
Primary professional activity					
	Classroom teacher	94	39.5	462	72.2
	Special Education	98	41.2	85	13.3
	Any other, non-classroom teacher	43	18.1	89	14.0
	Missing	3	1.3	4	0.6
Type of school					
	Public	210	88.2	594	93.0
	Public Alternative	12	5.0	26	4.0
	Public Charter/Magnet	14	6.0	18	2.8
	Missing	2	0.8	2	0.3
Location of school					
	Urban	73	30.7	136	21.3
	Suburban	89	37.4	268	41.9
	Rural	74	31.1	234	36.6
	Missing	2	0.8	2	0.3
Grade levels taught at school					
	Kindergarten	116	48.7	235	36.7
	Grades 1-3	134	56.3	269	42.0
	Grades 4-6	149	62.6	330	51.6
	Grades 7-12	98	41.2	367	57.3
	Classes Not in Session	15	6.3	24	3.8
	Missing	2	0.8	2	0.3
Number of students in school					
	Less than 50 students	11	4.6	9	1.4
	50 to 200 students	27	11.3	51	8.0
	201 to 500 students	83	34.9	200	31.3
	501 to 1000 students	84	35.3	230	35.9
	More than 1000 students	31	13.0	148	23.1
	Missing	2	0.8	2	0.3

School-level demographics pertain to the school in which the educator worked most time in previous 12 months

TABLE 3
Characteristics of Educators' Schools – Minnesota Department of Education Data

Characteristics –	Cases (n = 238)		Controls (n = 640)	
Average Annual Per Student Expenditure:	$9,204	(S.D. = $2621)	$8,686	(S.D. = $2,155)
Rural Schools - $8,521 (S.D. = $2048)				
Urban Schools - $10,400 (S.D. = $3094)				
Suburban Schools - $8,238 (S.D. = $1464)				
	n	%	n	%
Annual per student expenditure quartiles -				
Less than $7,600	44	18.5	158	24.7
$7,600 less than $8,400	42	17.7	159	24.8
$8,400 to less than $9,350	53	22.3	148	23.1
Greater than $9,350	69	29.0	135	21.1
Missing	30	12.6	40	6.3
Percent student Free/reduced price lunch eligible				
Less than 25%	71	29.8	286	44.7
25 to < 50%	84	35.3	237	37.0
50% to < 75%	33	13.9	66	10.3
More than 75%	27	11.3	30	4.7
Missing	23	9.7	21	3.3
Percent student free/reduced price lunch eligible (MES)*				
Less than 25%	51	21.4	237	37.0
25 to < 50%	90	37.8	206	32.2
50% to < 75%	33	13.9	82	12.8
More than 75%	47	19.8	59	9.2
Not aware	13	5.5	48	7.5
Missing	4	1.7	8	1.3

Percent special education students				
Less than 10%	43	18.1	164	25.6
10 to < 12%	48	20.2	160	25.0
12% to < 14.5%	49	20.6	133	20.8
More than 14.5%	75	31.5	162	25.3
Missing	23	9.7	21	3.3
Percent limited English proficiency (LEP)				
Less than 0.25%	44	18.5	163	25.5
0.25 to < 3.5%	60	25.2	215	33.6
3.5% to < 8.0%	29	12.2	104	16.3
More than 8.0%	82	34.5	137	21.4
Missing	23	9.7	21	3.3
Average annual tax per home in school district				
<$286 per year	48	20.2	153	23.9%
$286-501 per year	45	18.9	126	19.7%
$501-677 per year	67	28.2	165	25.8%
>$677 per year	46	19.3	156	24.4%
Missing	32	13.5	40	6.3%
Student body race/ethnicity				
African American				
Less than 1%	46	19.3	174	27.2
1% to < 3%	51	21.4	167	26.1
3% to < 11%	39	16.4	148	23.1
More than 11%	79	33.2	130	20.3
Missing	23	9.7	21	3.3
American Indian				
Less than 0.3%	44	18.5	168	26.3
0.3% to < 0.8%	54	22.7	153	23.9

0.8% to < 1.8%	47	19.8	156	24.4
More than 1.8%	70	29.4	142	22.2
Missing	23	9.7	21	3.3
Asian				
Less than 1%	58	24.4	177	27.7
1% to < 3%	49	20.6	147	23.0
3% to < 7%	41	17.2	148	23.0
More than 7%	67	28.2	147	23.0
Missing	23	9.7	21	3.3
White				
Less than 71%	84	35.3	122	19.1
71% to < 87%	39	16.4	178	27.8
87% to < 94%	50	21.0	157	24.5
More than 94%	42	17.7	162	25.3
Missing	23	9.7	21	3.3
Hispanic/Latino				
Less than 1%	42	17.7	135	21.1
1.0% to < 2.7%	56	23.5	182	28.4
2.7% to < 6.3%	45	18.9	164	25.6
More than 6.3%	72	30.3	138	21.6
Missing	23	9.7	21	3.3

School-level demographics pertain to the school in which the educator worked most time in previous 12 months.
*Data obtained from educators' self-reports on MES Phases II.

TABLE 4
Univariate and Multivariate Analyses of Expenditure Exposures and Educators' Risk of Physical Assault

Per student expenditure exposures				Model 1 – Unadjusted		Model 2** – Adjusted		Model 3*** – Adjusted	
		N	No. Events	OR	95% CI	OR	95% CI	OR	95% CI
Total annual per student expenditure:									
	Less than $7,600	200	43	1	-	1	-	-	-
	$7,600 less than $8,400	201	42	1.02	(0.60-1.74)	1.16	(0.65-2.09)	-	-
	$8,400 to less than $9,350	201	53	1.51	(0.93-2.46)	1.28	(0.72-2.28)	-	-
	Greater than $9,350	203	69	**1.94**	**(1.18-3.18)**	0.82	(0.41-1.62)	-	-
	Missing	70	29	**2.97**	**(1.60-5.52)**	0.44	(0.03-6.49)	-	-
10 Operating expense program areas for allocation of total annual per student expenditure:									
1) Regular instruction expenditure									
Percentage of total per student expenditure allocated to regular instruction expenditure -									
	Less than 41.3 %	205	47	1	-	1	-	1	-
	41.3 to less than 46.2 %	200	47	1.14	(0.67-1.95)	1.23	(0.71-2.12)	1.14	(0.61-2.14)
	46.2 to less than 50.0 %	199	60	1.53	(0.92-2.53)	1.37	(0.77-2.44)	1.12	(0.55-2.30)
	Greater than 50.0 %	204	53	1.39	(0.82-2.35)	0.82	(0.44-1.53)	0.67	(0.28-1.60)
	Missing	70	29	**2.76**	**(1.46-5.21)**	0.45	(0.03-6.52)	-	-
2) Career and technical instruction expenditure									
Percentage of total per student expenditure allocated to career and technical instruction expenditure -									
	Less than 0.2 %	149	53	1	-	1	-	1	-
	0.2 to 0.8 %	116	34	0.8	(0.44-1.46)	0.81	(0.41-1.58)	0.88	(0.38-2.03)
	0.8 to 2.8 %	135	28	**0.47**	**(0.26-0.85)**	0.77	(0.39-1.52)	1.12	(0.49-2.56)
	Greater than 2.8 %	134	20	**0.3**	**(0.16-0.60)**	0.66	(0.29-1.53)	1.09	(0.37-3.18)
	Missing	70	29	1.34	(0.72-2.50)	0.43	(0.01-18.96)	-	-
3) Special education instruction expenditure									
Percentage of total per student expenditure allocated to special education expenditure -									

	Less than 12.4 %	205	42	1	-	1	-	1	-
	12.4 to less than 15.4 %	202	36	0.86	(0.48-1.55)	0.68	(0.37-1.27)	0.62	(0.33-1.15)
	15.4 to less than 18.8 %	203	63	1.67	(0.99-2.83)	1.45	(0.81-2.59)	1.34	(0.74-2.41)
	Greater than 18.8 %	198	66	1.7	(1.00-2.88)	1.19	(0.64-2.23)	0.97	(0.45-2.09)
	Missing	70	29	**2.79**	**(1.45-5.38)**	0.39	(0.02-6.58)	-	-
4) Student activities expenditure									
Percentage of total per student expenditure allocated to student activities expenditure -									
	Less than 0.04 %	201	69	1	-	1	-	1	-
	0.04 to less than 0.8 %	197	54	0.73	(0.46-1.15)	0.75	(0.45-1.25)	0.7	(0.41-1.19)
	0.8 to less than 4.8 %	210	59	0.73	(0.45-1.19)	0.72	(0.40-1.30)	0.66	(0.35-1.25)
	Greater than 4.8 %	200	25	**0.25**	**(0.15-0.44)**	**0.4**	**(0.19-0.83)**	**0.3**	**(0.12-0.77)**
	Missing	70	29	1.41	(0.78-2.56)	0.35	(0.02-5.00)	-	-
5) District level administration expenditure									
Percentage of total per student expenditure allocated to district level administration -									
	Less than 3.1 %	193	57	1	-	1	-	1	-
	3.1 to less than 3.9 %	220	56	0.82	(0.49-1.36)	1.21	(0.69-2.12)	1.16	(0.66-2.03)
	3.9 to less than 4.9 %	197	56	0.8	(0.49-1.31)	1.32	(0.76-2.28)	1.01	(0.54-1.91)
	Greater than 4.9 %	198	38	**0.53**	**(0.31-0.91)**	0.77	(0.41-1.47)	0.66	(0.34-1.29)
	Missing	70	29	1.71	(0.91-3.21)	0.39	(0.0-6.1)	-	-
6) School level administration expenditure									
Percentage of total per student expenditure allocated to school level administration -									
	Less than 3.4 %	195	41	1	-	1	-	1	-
	3.4 to less than 4.3 %	222	62	1.65	(0.95-2.85)	**1.92**	**(1.10-3.37)**	**1.9**	**(1.07-3.35)**
	4.3 to less than 5.0 %	192	53	1.55	(0.89-2.70)	1.76	(1.02-3.05)	1.56	(0.88-2.76)
	Greater than 5.0 %	199	51	1.21	(0.70-2.10)	1.4	(0.81-2.42)	1.11	(0.61-2.02)
	Missing	70	29	**2.96**	**(1.52-5.78)**	0.64	(0.05-9.19)	-	-
7) Instructional support services expenditure									

Percentage of total per student expenditure allocated to instructional support services expenditure -									
	Less than 3.3 %	199	44	1	-	1	-	1	-
	3.3 to less than 4.4 %	208	46	0.9	(0.53-1.53)	1.18	(0.68-2.03)	1	(0.56-1.78)
	4.4 to less than 5.6 %	185	56	1.31	(0.77-2.25)	1.38	(0.78-2.44)	1.06	(0.58-1.96)
	Greater than 5.6 %	216	62	1.37	(0.80-2.36)	1.58	(0.91-2.75)	1.07	(0.57-2.01)
	Missing	70	30	**2.51**	**(1.30-4.82)**	0.45	(0.03-6.89)	-	-
8) Pupil support services expenditure									
Percentage of total per student expenditure allocated to pupil support services expenditure -									
	Less than 1.3 %	194	55	1	-	1	-	1	-
	1.3 to less than 2.5 %	222	69	1.22	(0.76-1.94)	1.18	(0.70-1.98)	1.25	(0.72-2.16)
	2.5 to less than 3.5 %	202	45	0.79	(0.47-1.32)	0.98	(0.53-1.80)	1.17	(0.61-2.25)
	Greater than 3.5 %	190	38	0.61	(0.35-1.07)	0.76	(0.40-1.45)	0.8	(0.38-1.66)
	Missing	70	29	**1.99**	**(1.07-3.68)**	0.44	(0.03-6.59)	-	-
9) Operations, maintenance, and other expenditure									
Percentage of total per student expenditure allocated to operations and maintenance expenditure -									
	Less than 7.0 %	216	61	1	-	1	-	1	-
	7.0 to less than 8.4 %	187	50	0.95	(0.57-1.58)	1.04	(0.61-1.75)	1.03	(0.58-1.81)
	8.4 to less than 9.8 %	186	44	0.67	(0.41-1.11)	0.96	(0.54-1.71)	1.1	(0.59-2.04)
	Greater than 9.8 %	219	52	0.77	(0.47-1.26)	1.23	(0.72-2.10)	1.53	(0.82-2.83)
	Missing	70	29	**1.86**	**(1.01-3.44)**	0.45	(0.03-6.57)	-	-
10) Student transportation									
Percentage of total per student expenditure allocated to student transportation expenditure -									
	Less than 4.8 %	200	46	1	-	1	-	1	-
	4.8 to less than 5.5 %	200	49	1.3	(0.79-2.13)	1.65	(0.96-2.85)	1.45	(0.82-2.56)
	5.5 to less than 6.5 %	207	62	1.63	(1.00-2.66)	2.13	(1.26-3.61)	1.8	**(1.02-3.15)**
	Greater than 6.5 %	201	50	1.43	(0.85-2.42)	1.41	(0.79-2.52)	1.13	(0.62-2.06)
	Missing	70	29	**2.92**	**(1.58-5.48)**	0.49	(0.03-7.92)	-	-

*Model adjusted for: school type and location; number of students enrolled; grade levels taught at the school; student race; % students eligible for free/reduced price lunch; % special education students; % English language learners; and average property tax per home in the school district

‡Model adjusted for with-in correlations using GEEs and weighted for non-response and unknown eligibility

∞Model also included adjustment for all other expenditure allocation categories/areas

TABLE 5
Unmeasured Confounder Sensitivity Analysis
Percentage Allocation to Student Activities Expenditure

			OR_{DZ}		
			0.1	0.2	0.5
P_{Z1}	P_{Z0}	OR_{XZ}	OR_{DX}	OR_{DX}	OR_{DX}
0.5	0.2	4	0.45	0.42	0.36
0.6	0.4	2.25	0.42	0.39	0.34
0.9	0.8	2.25	0.44	0.39	0.33
0.2	0.1	2.25	0.33	0.33	0.32
0.9	0.3	21	1.15	0.81	0.46
0.8	0.2	16	0.88	0.70	0.45
0.5	0.2	4	0.45	0.42	0.36
0.7	0.2	9.33	0.66	0.57	0.42
0.8	0.7	1.71	0.40	0.37	0.32
0.5	0.3	2.33	0.40	0.38	0.34
0.6	0.2	6	0.53	0.48	0.39
0.3	0.2	1.71	0.34	0.33	0.32
0.9	0.1	81	1.44	0.99	0.52
0.7	0.3	5.44	0.59	0.52	0.39
$P_{Z1} = P_{Z0}$		**1**	**0.30**	**0.30**	**0.30**

P_{Z1}: prevalence of an unmeasured confounder among individuals who worked with test exposure
P_{Z0}: prevalence of an unmeasured confounder among individuals who worked with reference exposure
OR_{XZ}: odds ratio for the association between exposure level and an unmeasured confounder
OR_{DZ}: odds ratio for the association between an unmeasured confounder and work-related assault; assumed protective factor (i.e., $OR_{DZ} < 1$)
OR_{DX}: odds ratio for test exposure adjusted for an unmeasured confounder

FIGURE 1
Directed Acyclic Graph: Relations between School Resource Level (Per Student Expenditure) and Physical Assault

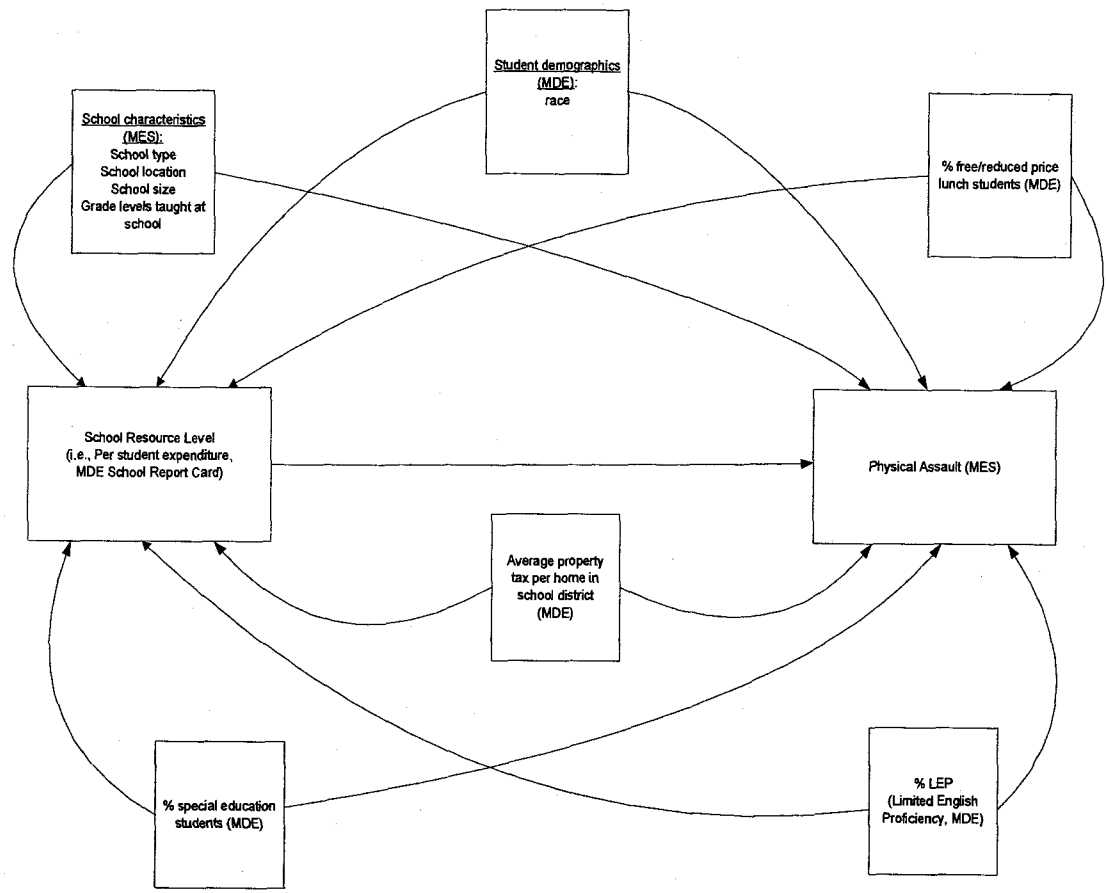
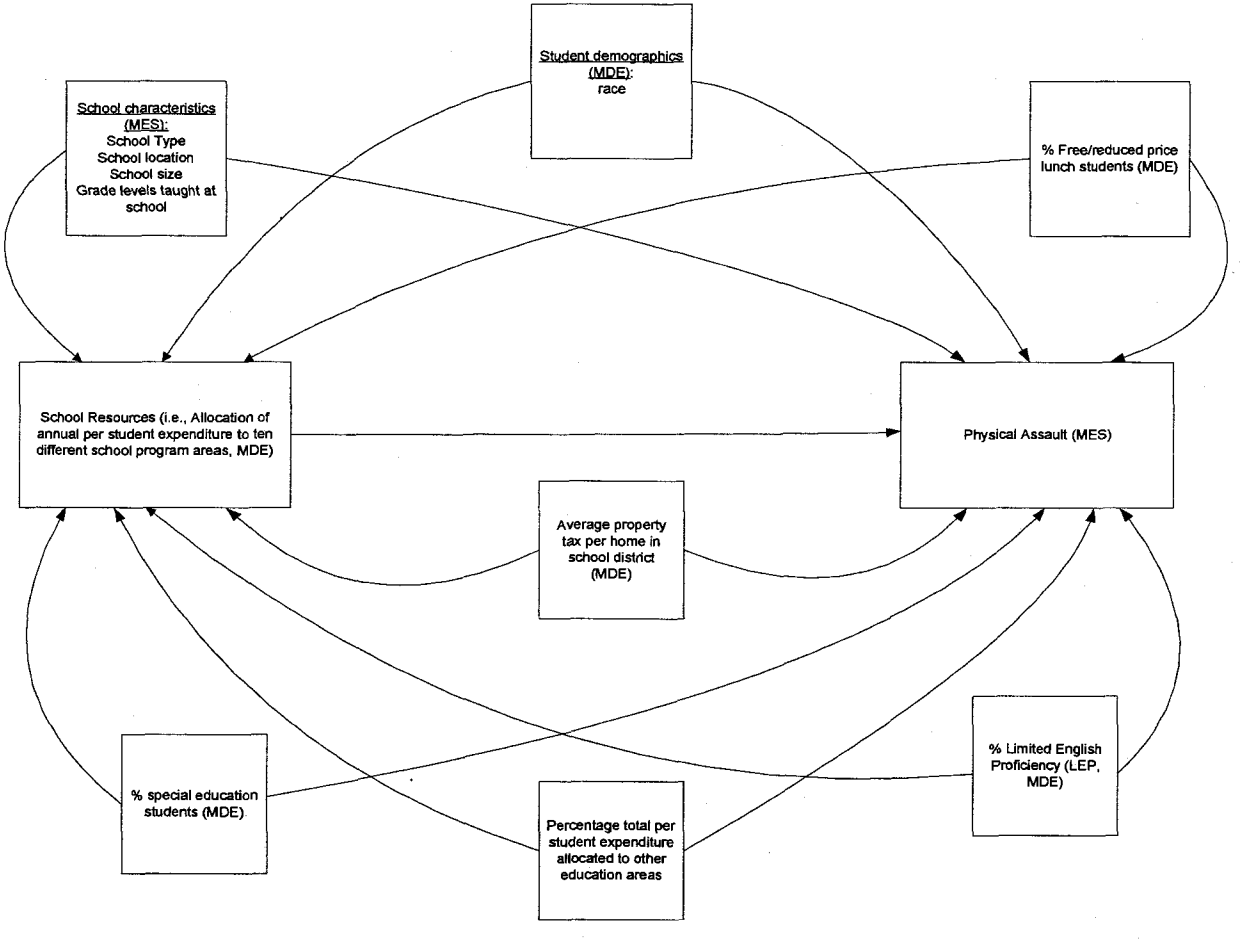


FIGURE 2

Directed Acyclic Graph: Relations Between School Resource Allocation to Specific Areas and Physical Assault



CHAPTER 5

MINNESOTA PUBLIC SCHOOL EDUCATORS' PERCEPTIONS OF SCHOOL RESOURCE LEVELS AND THEIR RISK OF PHYSICAL ASSAULT

ABSTRACT

Educators working in schools commonly experience school violence as work-related physical assault. These educators often also work in school environments that lack sufficient school resources. To investigate the relation between school resources and risk of physical assault (PA), a case-control study was conducted from the Minnesota Educators' Study (MES). In an effort to more thoroughly address the research questions, school-level demographic data from the Minnesota Department of Education (MDE) were combined with MES survey data. The MES examined a randomly selected cohort of state-licensed kindergarten through grade 12 (K-12) employed educators. From mailed questionnaires, response rates for both Phase I (comprehensive data collection on violent events) and Phase II (case-control) were 84%. Cases experienced a work-related PA event in the previous 12 months; controls reported no assaults. The PA rate for educators was a minimum of 8.3 per 100 persons per year. Exposure data were collected for cases (month prior to event) and non-injured controls (randomly selected months). Based on the school in which they worked the most time and available MDE school-level data, together with MES questionnaire data, analyses were conducted on 238 cases and 640 controls. In general, control educators, when compared to cases, were more likely to indicate that the school in which they worked the most time had both sufficient economic resources to provide their students with an environment, in which their educational needs were met, and the necessary tools and supplies required to effectively teach their

students. When asked about sufficiency of specific types of resources, cases were less likely to report that their working environments were sufficiently equipped with each of six types of resources (e.g., up-to-date technology and books, human resources for students, other teaching tools and supplies, and sports and musical equipment or facilities). Multivariate analyses suggested that educators who reported that they lacked resources to provide necessary teaching tools and supplies for their students experienced increased risk of PA (OR 1.70, 95% CI: 1.10-2.64). In addition, educators who had not made personal out-of-pocket purchases for their students' educational resources (i.e., did not lack school resources) experienced decreased risks of PA (OR 0.55, 95% CI: 0.33-0.91). Multivariate analyses also suggested that lack of several specific school resources was associated with increased risks of PA assault for educators working in these resource-poor environments. Important findings included increased risks of PA with lack of up-to-date technology (OR 1.53, 95% CI: 1.04-2.26), sports equipment and facilities (OR 1.73, 95% CI: 1.09-2.77), and musical equipment and facilities (OR 1.74, 95% CI: 1.07-2.83).

Results suggested a relation between insufficient resources, in particular, several specific types of resources, and higher risks of PA. Consideration of these results may serve to guide school administrators in determination of how to best allocate resources at their schools.

Keywords: occupational violence; injury; physical assault; educators; school resources; educators' perceptions

INTRODUCTION

Background

In general, individuals working and living in areas that lack access to resources are more likely to be exposed to poorer quality school and work environments than those in areas where resources are more abundant (Evans, 2002). In low socio-economic environments, rates of violence and injuries are also higher than in areas with greater access to resources (Krug, 2002; Winett, 1998; Baker et al., 1992). Within the context of schools, many schools – often those located in rural and urban areas – are commonly described as lacking necessary educational resources for students and educators (Carroll, 2004). While the relation between the lack of resources and violence has been identified, this association has not yet been rigorously explored within the context of Kindergarten through grade 12 (K-12) schools.

Educators in K-12 schools are at considerable risk of work-related physical assault (PA) (Dinkes et al, 2007; Duhart, 2001; Devoe et al., 2004). For example, of the estimated 1.7 million acts of non-fatal work-related violence that occurred each year between the years 1993 and 1999, teachers working in elementary, junior and high school, and special education, experienced 8% of these violent victimizations (Duhart, 2001). Many of these violent incidents were perpetrated by students, such that during the 2003-2004 school year, teachers experienced an estimated 253,100 threats of injury and 127,500 physical attacks by students in elementary and secondary schools (Dinkes et al., 2007).

In terms of school resources, our nation's elementary and secondary educational system is disparate and "two-tiered" (Carroll, 2004). Despite decade-old legislation,

intended to provide equal educational opportunities and resources to *all* students, many students and teachers are still exposed to inadequate, resource-poor, and even hazardous school environments (Carroll, 2004). According to a recent report prepared by the National Commission on Teaching for America's Future, educators working in schools that serve many low income students and students of color – when compared to educators working in more affluent, resource-rich schools – were more likely to report many inadequacies, including: physical school facilities; textbooks and materials for students to use in class or at home; computers and limited internet access; science equipment and materials; and higher personal expenditures to compensate for these insufficient classroom materials (Carroll, 2004). For example, of the randomly selected educators who taught in Wisconsin (n=1,256), 40% of those working in low-income urban schools reported that they "lack the necessary equipment and materials to teach effectively," whereas just 24% of their counterparts working in more affluent schools reported such deficiencies (Carroll, 2004). Clearly, resources levels vary across schools and there may be an association between these disparities in resource levels and violence that occurs in the school environment, as identified in other arenas.

The relations between school resource levels (i.e., school spending) and various other student outcomes have been explored (Hanushek, 2006; Ludwig et al., 1999; Hanushek; 1996); however, relations between a lack of access to school resources and school violence have yet to be explored. Thus, the goal of this study was to examine the nature of the relations between school resource levels (as measured by educators' self-reports of their schools' resource levels), and risk of work-related PA incurred by these educators.

METHODS

Overview

This study involved linking self-reported data by educators in the Minnesota Educators' Study (i.e., demographic variables and environmental exposures), with school-specific demographic data from the Minnesota Department of Education (MDE). The MDE data, available only for public schools, were associated with each educator's primary workplace (i.e., the school in which their reported environmental exposures and potential PAs would have occurred). Each of the datasets, MES and MDE, offered unique strengths; the MES data provided the educators' perceptions of his/her school environment, while the MDE data provided the "gold standard" measure of school level demographics (e.g., percentage of students receiving free/reduced price lunch, special education curricula, and student body race/ethnicity demographics, etc.). In combination, the two datasets provided a unique opportunity to examine the work-related assault research questions in an innovative way. Approval to conduct this study was received from the Institutional Review Board for Human Subjects, University of Minnesota.

Target Population

The MDE maintains a list of all educators that have been licensed to teach in the state of Minnesota (MN). This list contained the names of all educators ever licensed to teach in MN, as well as key variables on each educator, such as, date of birth, license type, education level, and name of the school in which they held their primary teaching appointment for the most recent school year. Educators with a license expiration date prior to 2003 were excluded. Results of a pilot study (n=300) indicated that "lifetime license" holders could also be excluded; only 3% of eligible responders had a lifetime

license and a large proportion were deceased or not working. Upon, consideration of the exclusion criteria, the target population for the MES was approximately 117,000 licensed educators who had license expiration dates within the eligible range.

Initially, a cohort of 26,000 educators was randomly selected from the target population and, in order to establish eligibility, a screening survey was mailed to them, beginning in April, 2005; 6,469 eligible, responders were identified. Responders (n=6,469) were, then, mailed a Phase I questionnaire to ascertain the magnitude of violence against educators, including PA occurrence; based on responses, 372 cases and 1116 controls (1:3) were identified to be included in the MES Phase II case-control study.

The response rate for each Phase of the MES Phase was 84%, and ultimately, 290 (student-perpetrated) cases and 867 controls completed the MES Phase II questionnaire. For the purposes of the current study, it was necessary to further limit inclusion to educators working in public schools, identified by name by the educator, such that MDE demographic variables pertinent to each educator's school could be linked their MES data. Thus, 238 (82%) cases and 640 (74%) controls were included in these analyses.

Data Collection

MES data were collected via mailed questionnaires (http://www1.umn.edu/cvpc/research.html). Initially, the MES involved a screening survey which was followed by two additional mailed questionnaire-based phases: Phase I (comprehensive study) and Phase II (case-control study). Data were collected on demographics and violent (both physical and non-physical) occurrences and consequences, through the comprehensive survey, while data on various work-related exposures were collected through the case-control survey. Data collected from the Phase

I instrument were used to 1) determine the rates and consequences of violent events, and 2) to study the potential associations of physical violence and several educator and environmental characteristics.

Questions on the Phase I survey asked about a specific time period in which the educator had worked. Respondents were asked about characteristics of themselves as well as their work environments. Questions asked of the educators included: number of hours worked per month; the type (public, private, etc.) and location (urban, suburban, or rural) of school in which they worked; primary professional activity; average age of students with whom the educator worked; number of hours of student contact per day; number of years as a licensed educator; topics taught; and typical class size, etc. Participants also provided demographic and SES information about themselves. Further, participants were asked whether or not they had experienced work-related PA, and to what extent, during the past 12 months.

Phase II, involved a nested case control design, to examine the relations between potential risk factors (e.g., perceived amount of resources in the school environment) and PA. Questions focused on the month, or a time period, just prior to the case event, or a randomly selected working month for controls, and included various environmental exposure questions, such as: topics and types of students taught; hours of student contact; and whether various types of resources were sufficient as provided by the school (e.g., up-to-date books and technology, human resources for students, necessary teaching tools for students, sports and musical equipment).

The school-specific demographic data, associated with each educator's primary workplace, were provided by the Minnesota Department of Education. These variables

included several demographic characteristics of the schools such as student body race/ethnicity, percentage of students receiving free/reduced price lunches, special education curricula, and limited English proficiency (LEP) curriculum.

Case and Control Selection

Case Selection

The MES yielded 372 cases who had reported having experienced at least one work-related PA event within the eligible 13-month period. In the case of educators who experienced more than one event, the most remote event was considered for analyses. For the purposes of these analyses, only those educators working in public schools who identified the school in which they worked the most time were included: 238 of 290 (82.1%) student-perpetrated MES cases, met these criteria and completed full MES surveys.

Control Selection

Controls (n=1,116) were identified as those educators who did not report, in the MES Phase I data collection, that they had experienced a PA. Controls were selected at a ratio of 3:1 to cases; 867 of the control educators who were mailed a Phase II questionnaire returned full completed surveys. For comparison purposes, each of the selected control educators had one month randomly selected from their pool of eligible months (i.e., months in which they worked during the eligible 13-month range). Again, the current analyses were limited to public school educators for whom their primary school of employment could be determined. Thus, 640 of 867 (73.8%) MES controls were included in these analyses.

Data Analyses

The goal of the analyses were to estimate the association between the exposures of interest or school resource levels, as measured by educators' self-reported perceptions of resources, and the outcome of interest (i.e., work-related violence), while controlling for potentially confounding factors. Initially, each exposure was considered univariately; then, multivariate logistic regression modeling of the relation between the exposures of interest and the outcome were conducted (Breslow and Day, 1980). In order to facilitate selection of potential confounding variables for control, directed acyclic graph (DAGs) were developed, from a larger causal model, for the relevant exposures of interest (e.g., **Figure 2**) (Hernan et al., 2002; Maldonado and Greenland, 2002; Greenland et al., 1999). Generalized estimating equations (GEEs) were used to account for correlated observations among educators working within the same school (Liang and Zeger, 1986). Re-weighting, was utilized to adjust for the potential biases due to non-response, as well as unknown eligibility of non-responders (Mongin, 2001; Efron and Tibshirani, 1993). Sensitivity analyses were also utilized to examine the potential impact of an unmeasured confounder (Rothman et al., 2008).

Educators responded to five MES questionnaire items, intended to gauge their perceptions of the levels of resources in their school or working environment (http://www1.umn.edu/cvpc/research.html; MES Phase II Questions, numbered 17-21). These exposures were included in the regression models as categorical variables; response options for each item included "yes," "no," "unsure," or refusal to answer (i.e., "missing").

RESULTS

Response rates to the MES Phases I and II were each 84%. While the overall PA rate for educators was 8.3 per 100 persons per year, the current analyses were limited to student-perpetrated incidents of violence experienced by public school educators who sufficiently identified the names of the schools in which they worked the most time. Thus, 238 of 290 (82.1%) MES cases, and 640 of 867 (73.8%) MES controls were included in these analyses.

The demographic, occupational, and school characteristics, as reported by the case and controls are presented in **Table 1.** Case and control educators were both largely female (i.e., >75%) and similar in age. The majority of both cases and controls were also working full-time (>80%) in non-charter/alternative/magnet public schools (>88%). Educators who experienced PA tended to work with younger students (i.e., more likely K-6) in schools with smaller student bodies (i.e., <1000 students). Cases were more likely to work in urban school environments. In addition, cases (versus controls) were more likely to cite their primary professional activity as working specifically with special education students (41% versus 13%), rather than as traditional classroom teachers with non-special education students.

School-level demographic data were provided by the MDE. These characteristics of the schools in which participants worked are summarized in **Table 2.** Educators who reported an assault worked in schools in which there were higher percentages of students receiving free or reduced price lunches, participating in special education classes, and with limited English proficiency (i.e., LEP). Also, schools in which cases worked, were more often located in urban areas and had higher percentages of students of color (i.e.,

African American, American Indian, Asian, and Hispanic/Latino).

Table 3 identifies the educators' perceptions of school resource levels by case and control status. Control educators, compared to case educators, were more likely to indicate that the school, in which they worked the most time, had sufficient economic resources to provide students with an environment in which their educational needs were being met. They were also more likely to report that their schools had provided them with sufficient resources, including, necessary tools and supplies, needed to effectively teach their students.

When asked about sufficiency of specific types of resources case educators, compared to control educators, were less likely to report that their working environments were sufficiently equipped with each of the six types of resources (i.e., up-to-date technology, up-to-date books, human resources for students, other teaching tools and supplies, sports and equipment or facilities, and musical equipment or facilities). Case educators were also more likely, than controls, to report that they had made out-of-pocket purchases for their students' in-class educational resources. Cases and controls reported similar levels of awareness of school programs or activities that had been terminated due to lack of resources (**Table 3**).

Results of the univariate and multivariate regression analyses are detailed in **Table 4.** At the univariate level, results suggested that those educators who lacked sufficient economic resources to meet students' educational needs (as well as those who were 'unsure') experienced higher risks of PA. After controlling for several confounding variables, multivariate analyses also suggested increased risk of PA for these groups of educators; however, results were not statistically important. At both the univariate and

multivariate levels, educators who reported that they lacked resources to provide the necessary teaching tools and supplies for their students experienced increased risk of PA (OR 1.75, 95% CI: 1.19-2.59; OR 1.70, 95% CI: 1.10-1.64).

Educators who reported that they had not made personal out-of-pocket purchases for their students' educational resources (i.e., educators working in schools with sufficient resources) had decreased risks of PA at both the univariate and multivariate levels (OR 0.51, 95% CI: 0.31-0.84; and OR 0.55, 95% CI: 0.33-0.91), respectively. Based on multivariate results, educators who reported that they were not aware of school programs or activities that had been terminated at their school due to lack of resources, experienced somewhat increased risk of PA; however, this result was not statistically important.

Participants were also asked about sufficiency of several different specific types of resources; both univariate and multivariate results suggested increased risks of PA assault was associated with self-reported lack of each type. Important findings, identified in **Table 4,** included the risk of PA with up-to-date technology (OR 1.53, 95% CI: 1.04-2.26), sports equipment and facilities (OR 1.73, 95% CI: 1.09-2.77), and musical equipment and facilities (OR 1.74, 95% CI: 1.07-2.83).

To examine the impact of an unmeasured confounder, in terms of magnitude and direction of potential bias, sensitivity analyses were included (**Table 5**), using methods described by Rothman et al. (2008). For example, results of this study suggested that educators' perceptions of deficient resources, including sports equipment and facilities, were associated with increased risk of PA. Analyses were conducted to consider the effect of an unmeasured confounder, e.g., a factor that potentially influenced the educator's perception of the level of resources in their environment and, thus, their risk of

PA. To examine this, estimated ranges of prevalence of this unmeasured factor were analyzed with regard to the risk identified for perceived exposures of sufficient, versus not sufficient, sports equipment and facilities. Results of the analyses suggested that, in order to reverse the effect of this exposure (e.g., OR changes from 1.73 to 0.92), the unmeasured confounder, such as negative affect on the part of the educator, would have to be a relatively strong risk factor (e.g., OR = 5.0) and differences in prevalence across the exposed and unexposed of 0.6 and 0.2, respectively. Results of the sensitivity analyses, however, considered only the point estimate and not the precision of the estimate.

DISCUSSION

Results of this study suggested that educators working in schools that lacked resources (as measured by educators' perceptions of these levels) were more likely to have experienced PA. This finding is consistent with previous studies of principals, who when surveyed, commonly reported that "inadequate funds" or a lack of school resources served to limit, "in a major way," their efforts to reduce violence in their schools (Noelle et al., 2007). Study results also indicated a relation between a lack of several specific types of resources (e.g., up-to-date technology, sports equipment and facilities, and musical equipment and facilities) and student-perpetrated, work-related violence such that a lack of these resources was associated with increased risk of PA, after controlling for numerous variables. Given that some specific resources, addressed, were not associated with increased risk of PA, those making decisions about school resource allocations need to consider the needs and potential differential effects among all resources utilized in their schools.

Although few studies have specifically examined the nature of the relations between student participation in various extracurricular activities and violence, findings from the current study are supported by some previous research which has indicated that participation in extracurricular activities and sports, for K-12 students, is associated with pro-social behavior (e.g., lower rates of risky behavior) or other positive educational outcomes (Langbein and Bess, 2002; Eccles and Barber, 1999). It is plausible that violence may be reduced in school environments in which educators reported that students have sufficient access to such extracurricular resources (i.e., sports and music programs), as this encourages and allows for student participation in extracurricular activities, thereby, potentially reducing violent outcomes in school environments.

Limitations

This study focused on school resources, measured by the educators' perceptions of the levels of resources in their school environments. The self-reported nature of the work-related violent events and other exposures, leads to consideration of several potential biases, including those related to recall, information, misclassification, selection, and confounding. Recall bias was addressed by limiting the recall period to the previous 12 months for assaults and one month for exposures (Gabel and Gerberich, 2002; Gerberich et. al., 2005; Gerberich et. al., 2004). To further reduce information bias, educators were also followed-up by mail to clarify missing or unclear information, provided on survey instruments. Response bias was considered by inversely weighting observed responses by probabilities of response, which were estimated as a function of the educator variables in the MDE license database (Horvitz and Thompson, 1952). Unknown eligibility among non-responders was addressed by accounting for the probability of eligibility, based on

these same licensure list variables (Mongin, 2001). In an effort to reduce the effect of confounding, DAGs guided the selection of potential confounders for logistic regression analyses (Greenland et al., 1999). Further, sensitivity analyses were also utilized to examine the potential impact of an unmeasured confounder (i.e., factor associated with educators' perceptions) that might have influenced their responses and thus, their risk of assault (Rothman et al., 2008).

Conclusions

This study was unique in that it complemented self-reported information from educators, from a methodologically rigorous case-control study, with demographic data from the MDE to address the work-related school violence question. Previous efforts to examine this issue have relied on cross-sectional surveys of teachers rather than quantitative analyses of case-control data in conjunction with MDE-reported, school-specific demographic variables. Results suggested that there sufficient resources in several key education areas may have an effect on reducing the risk of violent outcomes in schools.

Knowledge gained from these results serve as an initial step in enhancing our limited understanding of the nature of the relations between schools' resource levels and PA. Future studies might further explore whether changes in school resource levels, over time, have an impact on PA outcomes in K-12 schools.

ACKNOWLEDGMENTS

Support for this research was provided by the: National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention, Department of Health and Human Services (R01 OH007816); Midwest Center for Occupational Health and Safety (NIOSH Training Grant T42 OH008434); Center for Violence Prevention and Control, University of Minnesota; and Regional Injury Prevention Research Center, University of Minnesota. Additional gratitude is offered to the entire research team, as well as our advisory board of educators and school administrators, each of whom offered invaluable insights into this research effort. This study would not have been possible without the contributions of thousands of dedicated K-12 educators working in Minnesota's schools. These committed individuals deserve to work in safe environments.

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TABLE 1

Educators' Demographic and School Characteristics by Case-Control status – Minnesota Educators' Study Data

Educator Characteristics		Cases (n = 238)	%	Controls (n = 640)	%
Educator Gender					
	Female	190	79.8	488	76.3
	Male	48	20.2	152	23.8
Educator age					
	Less than 30	20	8.4	43	6.7
	30 to < 40	51	21.4	146	22.8
	40 to < 50	64	26.9	176	27.5
	50 to < 60	93	39.1	236	36.9
	60 or older	10	4.2	39	6.1
Teaching Job Classification					
	Full-time contract	212	89.1	530	82.8
	Part-time contract	12	5.0	65	10.2
	Long-call substitute	3	1.3	8	1.3
	Building substitute	1	0.4	1	0.2
	All other substitutes	7	2.9	35	5.5
	Missing	3	1.7	1	0.2
Primary professional activity					
	Classroom teacher	94	39.5	462	72.2
	Special Education	98	41.2	85	13.3
	Any other, non-classroom teacher	43	18.1	89	14.0
	Missing	3	1.3	4	0.6
Type of school					
	Public	210	88.2	594	93.0
	Public Alternative	12	5.0	26	4.0
	Public Charter/Magnet	14	6.0	18	2.8

	Missing	2	0.8	2	0.3
Location of school					
	Urban	73	30.7	136	21.3
	Suburban	89	37.4	268	41.9
	Rural	74	31.1	234	36.6
	Missing	2	0.8	2	0.3
Grade levels taught at school					
	Kindergarten	116	48.7	235	36.7
	Grades 1-3	134	56.3	269	42.0
	Grades 4-6	149	62.6	330	51.6
	Grades 7-12	98	41.2	367	57.3
	Classes Not in Session	15	6.3	24	3.8
	Missing	2	0.8	2	0.3
Number of students in school					
	Less than 50 students	11	4.6	9	1.4
	50 to 200 students	27	11.3	51	8.0
	201 to 500 students	83	34.9	200	31.3
	501 to 1000 students	84	35.3	230	35.9
	More than 1000 students	31	13.0	148	23.1
	Missing	2	0.8	2	0.3

School-level demographics pertain to the school in which the educator worked most time in previous 12 months.

TABLE 2
Characteristics of Educators' Schools – Minnesota Department of Education Data

MDE Demographic Characteristics of Schools in which MES participants work the most time:	Cases (n = 238)	%	Controls (n = 640)	%
1) Percentage student Free/reduced price lunch eligible				
Less than 25%	71	29.8	286	44.7
25 to < 50%	84	35.3	237	37.0
50% to < 75%	33	13.9	66	10.3
More than 75%	27	11.3	30	4.7
Missing	23	9.7	21	3.3
2) Percentage student free/reduced price lunch eligible (MES-reported)*				
Less than 25%	51	21.4	237	37.0
25 to < 50%	90	37.8	206	32.2
50% to < 75%	33	13.9	82	12.8
More than 75%	47	19.8	59	9.2
Not aware	13	5.5	48	7.5
Missing	4	1.7	8	1.3
3) Percentage special education students				
Less than 10%	43	18.1	164	25.6
10 to < 12%	48	20.2	160	25.0
12% to < 14.5%	49	20.6	133	20.8
More than 14.5%	75	31.5	162	25.3
Missing	23	9.7	21	3.3
4) Percent Limited English Proficiency (LEP)				
Less than 0.25%	44	18.5	163	25.5
0.25 to < 3.5%	60	25.2	215	33.6
3.5% to < 8.0%	29	12.2	104	16.3
More than 8.0%	82	34.5	137	21.4
Missing	23	9.7	21	3.3
5) Student body race/ethnicity				
African American				

Less than 1%	46	19.3	174	27.2
1% to < 3%	51	21.4	167	26.1
3% to < 11%	39	16.4	148	23.1
More than 11%	79	33.2	130	20.3
Missing	23	9.7	21	3.3
American Indian				
Less than 0.3%	44	18.5	168	26.3
0.3% to < 0.8%	54	22.7	153	23.9
0.8% to < 1.8%	47	19.8	156	24.4
More than 1.8%	70	29.4	142	22.2
Missing	23	9.7	21	3.3
Asian				
Less than 1%	58	24.4	177	27.7
1% to < 3%	49	20.6	147	23.0
3% to < 7%	41	17.2	148	23.0
More than 7%	67	28.2	147	23.0
Missing	23	9.7	21	3.3
White				
Less than 71%	84	35.3	122	19.1
71% to < 87%	39	16.4	178	27.8
87% to < 94%	50	21.0	157	24.5
More than 94%	42	17.7	162	25.3
Missing	23	9.7	21	3.3
Hispanic/Latino				
Less than 1%	42	17.7	135	21.1
1.0% to < 2.7%	56	23.5	182	28.4
2.7% to < 6.3%	45	18.9	164	25.6
More than 6.3%	72	30.3	138	21.6
Missing	23	9.7	21	3.3

All school-level demographics pertain to the school in which the educator worked most time in previous 12 months.
*Data obtained from educators' self-reports on MES Phases II.

TABLE 3
Characteristics of Educators' Schools – Minnesota Educators' Study Data

MDE Demographic Characteristics of Schools in which MES participants work the most time:	Cases (n=238)	%	Controls (n=640)	%
1) Sufficient economic resources to meet students' educational needs (MES Q17)?				
Yes	134	56.3	429	67.0
No	82	34.5	185	28.9
Unsure	17	7.1	22	3.4
Missing	5	2.1	4	0.6
2) Sufficiently equipped with the following resources (MES Q18a-f):				
a. Up-to-date technology (e.g., computers, A/V equipment, etc.)?				
Yes	139	58.4	428	66.9
No	89	37.4	191	29.8
Unsure	5	2.1	17	2.7
Missing	5	2.1	4	0.6
b. Up-to-date books?				
Yes	153	64.3	426	66.6
No	70	29.4	184	28.8
Unsure	9	3.8	25	3.9
Missing	6	2.5	5	0.8
c. Human resources for students (e.g., school nurses, social workers, educational assistants, etc.)?				
Yes	129	54.2	380	59.4
No	95	39.9	232	36.3
Unsure	9	3.8	25	3.9
Missing	5	2.1	3	0.5
d. Other necessary teaching tools and supplies (e.g., blackboards and chalk, white boards and markers, etc.)?				
Yes	197	82.8	571	89.2
No	26	10.9	57	8.9
Unsure	10	4.2	8	1.3

Missing	5	2.1	4	0.6
e. Sports equipment and facilities?				
Yes	146	61.3	480	75.0
No	66	27.7	91	14.2
Unsure	21	8.8	66	10.3
Missing	5	2.1	3	0.5
f. Musical equipment and facilities?				
Yes	140	58.8	450	70.3
No	70	29.4	115	18.0
Unsure	22	9.2	72	11.3
Missing	6	2.5	3	0.5
3) Sufficient economic resources to for necessary teaching tools and supplies (MES Q19)?				
Yes	145	60.9	458	71.6
No	75	31.5	115	24.1
Unsure	13	5.5	72	3.8
Missing	5	2.1	3	0.6
4) Made personal out-of-pocket purchases for students' educational resources (MES Q20)?				
Yes	199	83.6	482	75.3
No	32	13.5	141	22.0
Unsure	5	2.1	16	2.5
Missing	2	0.8	1	0.2
5) During the past 12 months, are you aware of any school programs or activities that were terminated due to lack of resources (MES Q21)?				
Yes	135	56.7	357	55.8
No	78	32.8	199	31.1
Unsure	23	9.7	83	13.0
Missing	2	0.8	1	0.2

TABLE 4
Univariate and Multivariate Regression Analyses

Educators' Perception of School Resource Level (from MES instrument)	(n)	Events (n)	Model 1 – Unadjusted		Model 2*† – Adjusted	
			OR	**95% CI**	**OR**	**95% CI**
1) Sufficient economic resources to meet students' educational needs (MES Q17)?						
Yes	563	134	1	-	1	-
No	267	82	1.59	**(1.09-2.31)**	1.31	(0.84-2.04)
Unsure	39	17	2.67	**(1.35-5.27)**	1.82	(0.85-3.88)
2) Sufficiently equipped with the following resources (MES Q18a-f):						
a. Up-to-date technology (e.g., computers, A/V equipment, etc.)?						
Yes	567	139	1	-	1	-
No	280	89	1.67	**(1.16-2.41)**	1.53	**(1.04-2.26)**
Unsure	22	5	1.02	(0.36-2.89)	0.71	(0.20-2.58)
b. Up-to-date books?						
Yes	579	153	1	-	1	-
No	254	70	1.32	(0.92-1.90)	1.16	(0.76-1.77)
Unsure	34	9	1.24	(0.52-2.95)	1.19	(0.44-3.21)
c. Human resources for students (e.g., school nurses, social workers, educational assistants, etc.)?						
Yes	509	509	1	-	1	-
No	327	327	1.29	(0.91-1.81)	1.12	(0.77-1.63)
Unsure	34	9	0.95	(0.40-2.28)	0.91	(0.36-2.31)
d. Other necessary teaching tools and supplies (e.g., blackboards and chalk, white boards and markers, etc.)?						
Yes	768	197	1	-	1	-
No	83	26	1.51	(0.90-2.53)	1.31	(0.73-2.34)
Unsure	18	10	2.86	(0.98-8.33)	2.31	(0.67-8.00)

e. Sports equipment and facilities?						
Yes	626	146	1	-	1	-
No	157	66	2.49	**(1.64-3.78)**	1.73	**(1.09-2.77)**
Unsure	87	21	1.03	(0.59-1.80)	0.72	(0.35-1.52)
f. Musical equipment and facilities?						
Yes	590	140	1	-	1	-
No	185	70	2.40	**(1.61-3.60)**	1.74	**(1.07-2.83)**
Unsure	94	22	0.88	(0.51-1.53)	0.75	(0.37-1.51)
3) Sufficient economic resources to for necessary teaching tools and supplies (MES Q19)?						
Yes	603	145	1	-	1	-
No	229	75	1.75	**(1.19-2.59)**	1.70	**(1.10-2.64)**
Unsure	37	13	2.01	(0.93-4.36)	1.56	(0.63-3.87)
4) Made personal out-of-pocket purchases for students' educational resources (MES Q20)?						
Yes	681	199	1	-	1	-
No	173	32	0.51	**(0.31-0.84)**	0.55	**(0.33-0.91)**
Unsure	21	5	0.68	(0.25-1.88)	0.65	(0.19-2.25)
5) During the past 12 months, are you aware of any school programs or activities that were terminated due to lack of resources (MES Q21)?						
Yes	492	135	1	-	1	-
No	277	78	0.97	(0.67-1.41)	1.14	(0.75-1.72)
Unsure	106	23	0.65	(0.38-1.13)	0.72	(0.40-1.32)

*Model adjusted for: school type and location; number of students enrolled; student to teacher ratio; overcrowding in the school; grade levels taught at the school; student race; % students eligible for free/reduce price lunch; % special education students; educator's age, education and income

‡Model adjusted for with-in correlations using GEEs and weighted for non-response and unknown eligibility

Number missing for each item ranged from 3 to 11

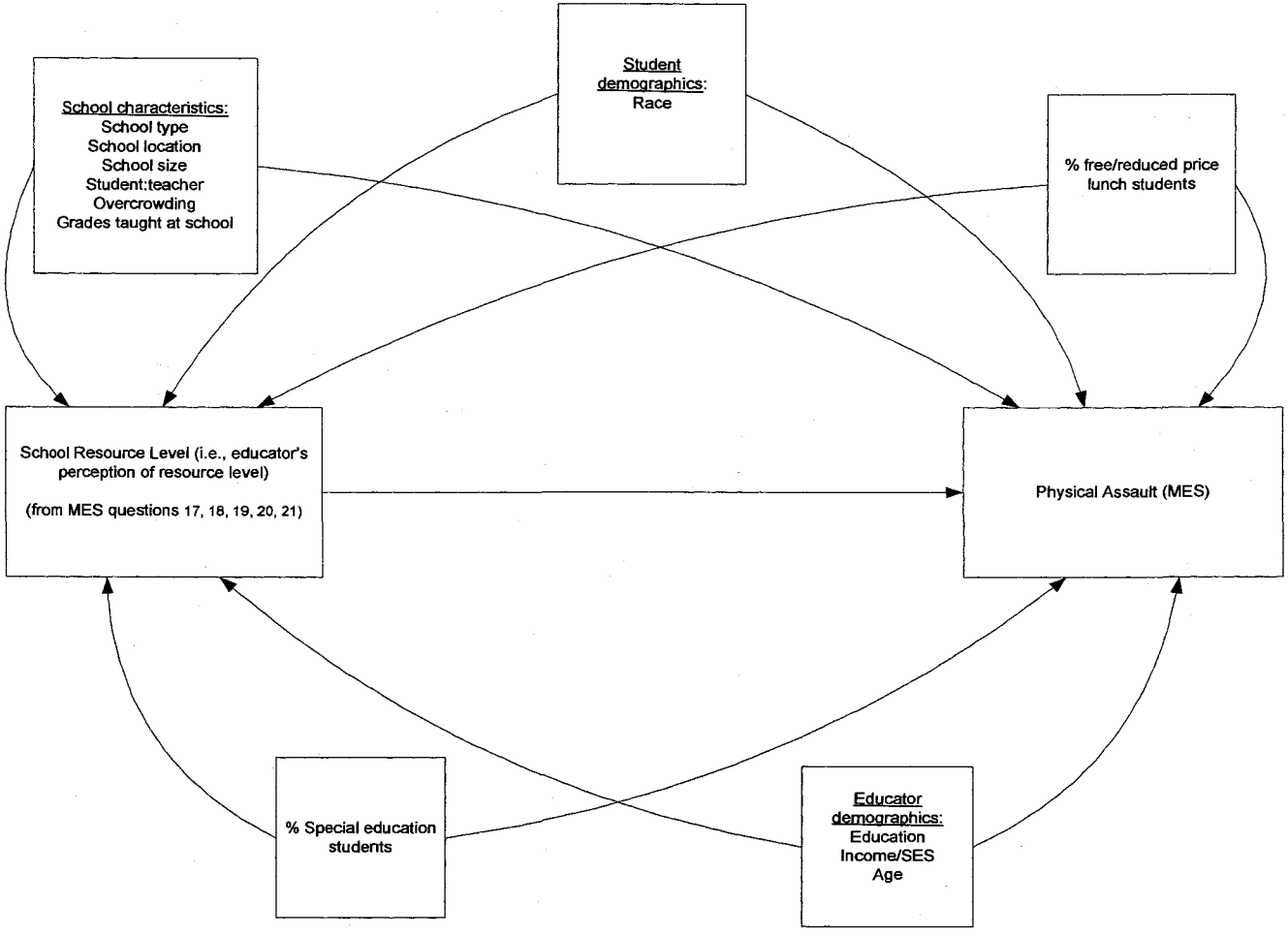
TABLE 5
Unmeasured Confounder Sensitivity Analysis
Sufficient Sports Equipment and Facilities

			OR_{DZ} = 2	OR_{DZ} = 5	OR_{DZ} = 10
P_{Z1}	P_{Z0}	OR_{XZ}	OR_{DX}	OR_{DX}	OR_{DX}
0.5	0.2	4	1.38	1.04	0.88
0.6	0.4	2.25	1.51	1.32	1.24
0.9	0.8	2.25	1.64	1.58	1.56
0.2	0.1	2.25	1.59	1.35	1.17
0.9	0.3	21	1.18	0.83	0.70
0.8	0.2	16	1.15	0.74	0.59
0.5	0.2	4	1.38	1.04	0.88
0.7	0.2	9.33	1.22	0.82	0.66
0.8	0.7	1.71	1.63	1.57	1.54
0.5	0.3	2.33	1.50	1.27	1.16
0.6	0.2	6	1.30	0.92	0.76
0.3	0.2	1.71	1.60	1.42	1.31
0.9	0.1	81	1.00	0.53	0.36
$P_{Z1} = P_{Z0}$		**1**	**1.73**	**1.73**	**1.73**

P_{Z1}: prevalence of an unmeasured confounder among individuals who worked with test exposure
P_{Z0}: prevalence of an unmeasured confounder among individuals who worked with reference exposure
OR_{XZ}: odds ratio for the association between exposure level and an unmeasured confounder
OR_{DZ}: odds ratio for the association between an unmeasured confounder and work-related assault; assumed risk factor (i.e., $OR_{DZ} > 1$)
OR_{DX}: odds ratio for test exposure adjusted for an unmeasured confounder

FIGURE 1

DAG: Relations between School Resource Level as Measured by Educators' Perception and Physical Assault



CHAPTER 6

DISCUSSION

Relations between disparities in school resources, resource allocation, and violence in the school setting have not been previously explored. In general, environments that lack resources or are low in socioeconomic status, compared to those with abundant resources, are more prone to higher rates of injury and violence (Krug, 2002; Winett, 1998; Baker et al., 1992). This study explored these relations in the school setting, by considering possible associations between school resource levels (measured by per student expenditures and educators' self-reported resource levels), school resource allocation, and physical assault against educators working in Minnesota's Kindergarten through grade 12 (K-12) public schools. In an effort to address several previously unexplored work-related violence research questions in an innovative way, this study combined data collected as part of the Minnesota Educator's Study (MES) with school-level demographic and fiscal expenditure data as collected by the Minnesota Department of Education (MDE).

School Resources Measured as Per Student Expenditures

Results of this study indicate that in Minnesota, school resources, measured by per student expenditures, vary by school location. Average total per student expenditures were higher in urban public schools than in either rural or suburban schools. Results of the study are consistent with the overall K-12 education expenditure trends across Minnesota's urban, suburban, and rural districts. Historically, school spending has been largely driven by levying of local property taxes, such that property-rich districts, which are generally located in wealthy suburban areas, have received more education funding

compared to property-poor rural and urban districts (Thorson and Anderson, 2007). In Minnesota, however, education finance reform, in response to litigation, has served to reverse this trend, such that urban K-12 public schools are currently appropriated more funding (i.e., resources) per student in an effort to help these students overcome some of the educational disadvantages associated with poverty.

Univariate results suggested that educators who reported having experienced at least one physical assault (i.e., cases), when compared to those educators who had not reported an assault while working, were more likely to work in schools in which annual per student expenditures were higher. After controlling for several relevant confounders, as identified via directed acyclic graphs (DAGs), multivariate analyses, although not statistically important, suggested that increased spending (i.e., highest quartile of spending versus referent) may be associated with decreased risk of physical assault.

There is a lack of literature on the relations between school resources (i.e., education expenditures) and violence in school environments; however, previous studies have explored various relations between increases in expenditures (i.e., resources) and other student outcomes, such as achievement. Results of these studies did not consistently demonstrate the direction of the relation between expenditures and student outcomes, however, and varied across methods of exposure and outcome measurement (Hanusek and Welch, 2006; Hanushek, 1996).

School Resource Allocation (Allocation of Per Student Expenditures)

In the current study, univariate analyses suggested either a decreased or increased risk of assault was associated with increased resource allocation (i.e., percentage of the total annual per student expenditure allocated) depending on several education operating

expense areas in Minnesota schools. For example, univariate level analyses indicated that increased percentages of total expenditure allocated to several areas (i.e., percentage allocated to district level administration, career and technical instruction, student activities/athletics, and operations/maintenance expenditure) were associated with decreased risks of physical assault.

At the multivariate level, analyses suggested that the highest quartile of resource allocation, when compared to the lowest referent group, was associated with decreased risks of physical assault for; district level administration, regular instruction, special education, student activities and athletics, and pupil support services expenditures. Several of the 95% confidence intervals for these estimates, however, were rather imprecise and not statistically important. The associations between increased resource allocations to student activities or athletics expenditures and decreased risks of physical assault, however, were important. The trend across the levels of student activities and athletics expenditure was suggestive of a dose response relationship between increased resource allocations and decreased risks of physical assault.

School Resources Measured as Educators' Perceptions of Resource Levels

When measuring school resource levels by educators' reports of these levels, control versus case educators were more likely to indicate that the school in which they worked the most time had sufficient economic resources. When asked about sufficiency of specific types of resources, those educators who had reported a physical assault (i.e., cases) were less likely to report that their working environments were sufficiently equipped with each of the six types of resources (i.e., up-to-date technology, up-to-date books, human resources for students, other teaching tools and supplies, sports equipment

and facilities, and musical equipment and facilities). Case educators were also more likely than controls to report that they had made out-of-pocket purchases for their students' in-class educational resources. Both cases and controls reported similar levels of awareness of school programs or activities that had been terminated due to lack of resources.

At the univariate level, results suggested that those educators who lack sufficient economic resources to meet students' educational needs experienced higher risks of PA. After controlling for several confounding variables, multivariate analyses also suggested increased risk of PA for these educators, however, results were not statistically important. At both the univariate and multivariate levels, educators who reported that they lacked resources to provide the necessary teaching tools and supplies for their students experienced increased risks of PA. Educators who reported that they had not made personal out-of-pocket purchases for their students' educational resources (i.e., educators working in schools with sufficient resources) had decreased risks of PA at both the univariate and multivariate levels.

Participants were also asked about sufficiency of several specific types of resources, and both univariate and multivariate results suggested increased risks of PA assault were associated with self-reported lack of each type of school resource. Important findings included the association between up-to-date technology, sports equipment and facilities, and musical equipment and facilities, and risk of PA. Results suggested that educators who reported a perceived lack of school resources, in terms of necessary teaching supplies for their students, experienced an increased risk of physical assault. In addition, it appeared as though a lack of certain specific types of school resources were also

associated with increased risk of work-related assault for educators working in these resource-poor environments.

Limitations – MDE Expenditure Data

Not all K-12 schools in Minnesota provided complete school-level expenditure and allocation data. Of those educators included in this study, seventy could not be matched to complete fiscal spending data as provided by the MDE. In addition, it was assumed that fiscal expenditure and demographic data provided by the MDE were accurate, as these values could not readily be validated against the fiscal accounting and demographic reports of the hundreds of individual K-12 schools included in this study.

Limitations – Educators' Perception of School Resources (MES Data)

In the case of self-reported exposures and outcomes (i.e., survey-acquired data), information bias must be addressed. It is plausible that educators who reported assaults may have had differential recall of their exposures and outcomes from the controls. In addition, other unmeasured factors may potentially influence educators' perceptions of their work environments.

Bias, Study Validity, and Sensitivity Analyses

Information Bias

Information bias (i.e., differential classification of exposures and outcomes) commonly occurs as a result of systematic differences in completeness and/or accuracy of collected data (Vandenbroucke et al., 2007). In the case of self-reported MES data, there was potential for misclassification of both exposures and outcome(s). At the MES design-stage, an effort to reduce recall bias was addressed by limiting the recall period to the previous 12 months for assaults and one month for exposures (Gabel and Gerberich,

2002; Gerberich et. al., 2005; Gerberich et. al., 2004). Educators were also rigorously followed-up by mail to clarify missing or unclear information provided on MES survey instruments. In an effort to validate outcome measures, a healthcare validity sub-study was also considered. Due to low response rate, however, results of this sub-study did not serve to further inform study results.

Selection Bias

Selection bias may also influence study results if the selected cases and controls are not a representative sample of the larger cohort population. To account for this, Bootstrap methods, or re-weighting, were utilized to adjust for the potential biases due to non-response, as well as unknown eligibility of non-responders (Mongin, 2001; Efron and Tibshirani, 1993). Several variables (or characteristics of educators such as, age, gender, basic skills training, highest degree obtained, and home address zip code) that were included in the Minnesota Department of Education license database were used to make these adjustments (Mongin, 2001). The generated weighting factors were then included in the multivariate logistic regression models.

Confounding

In an effort to reduce the effect of confounding, or "confusion of effects," a causal model and direct acyclic graphs (DAGs) guided the selection of potential confounders for logistic regression analyses (Rothman et al., 2008; Greenland et al., 1999). Presence of an unmeasured, or uncontrolled, confounder could bias study results. Because it is possible that an unmeasured confounder may not have been included in the models, sensitivity analyses were also utilized to examine the potential impact of an unmeasured confounder (Rothman et al., 2008).

Sensitivity analyses were conducted to consider the effect of an unmeasured confounder; an example of this confounder is the provision of additional resource funds by outside, private groups (such as a booster club) that are not documented in the available MDE fiscal records. Using methods as described by Rothman et al. (2008), sensitivity analyses were used to examine the potential impact - in terms of magnitude and direction of bias - of the presence of an unmeasured, unknown confounder. From the current study, results suggested that increased allocation of resources to student activities and sports programming was associated with decreased risks of physical assault for educators. Analyses were conducted whereby the prevalence of an unmeasured confounder among educators who were exposed to high levels of sports and activities resources (i.e., greater than 5% of the total expenditure allocated to sports and activities) was equal to, less than, and greater than, the prevalence among those unexposed educators. The sensitivity analyses demonstrated that if the odds ratio for the association between the unmeasured confounder and work-related PA is less than one (e.g., OR = 0.1) and the prevalence of the confounder is greater among educators with high levels of sports resources than among those without (i.e., 0.9 and 0.3, respectively), then the protective effect of the exposure could be reversed (e.g., OR changes from 0.3 to 1.15).

Sensitivity analyses were also conducted relevant to the study results which suggested that educators' perceptions of deficient resources, including sports equipment and facilities, were associated with increased risk of physical. Again, analyses were conducted to consider the effect of an unmeasured confounder, (e.g., a factor that potentially influenced the educators' perceptions of the level of resources in their environment and, thus, their risk of PA). Thus, to examine this,

estimated ranges of prevalence of this unmeasured factor were analyzed with regard to the risk identified for perceived exposures of sufficient, versus not sufficient, sports equipment and facilities. Results of the analyses suggested that, in order to reverse the effect of this exposure (e.g., OR changes from 1.73 to 0.92), the unmeasured confounder would have to be a relatively strong risk factor (e.g., OR = 5.0), and differences in prevalence across the exposed and unexposed of 0.6 and 0.2, respectively. Results of both of these sensitivity analyses, however, considered only the point estimate and not the precision of the estimate.

Future Research

In an effort to begin to address the casual question of whether school resource levels and resource allocation truly impact violent outcomes in the schools, future research should explore relations between changes in school resources levels over time and physical assault. In order to explore these relations, valid and reliable per student expenditure data is needed (note: According to the MDE, the 2004-2005 fiscal data is the first year for which school-level fiscal accounting data are valid and reliable). Access to such data would allow for future research to explore whether changes in school resource levels (i.e., expenditures) or resource allocation may lead to changes in school violence and physical assault rates for educators.

Results of the current study might also inform a possible school or work-related violence intervention study, whereby several schools (i.e., rural, suburban and urban) with comparable rates of physical assault (against educators) and levels of resources would be selected as either intervention or control schools. An intervention may well entail providing the intervention schools with funds to supplement their existing student

activities and sports programs. Multivariate analyses could then consider the impact of the intervention (i.e., increased resources or funding for sports and extracurricular activities), while adjusting for potential confounding factors, on physical assault against educators and in the schools. Ideally, educators could report on their physical assaults and any associated exposures in 'real-time' to reduce potential recall bias.

Conclusions

This study served as a unique first step to better inform the nature of the relations between disparities in school resources, resource allocations, and physical assault. Several data sources were combined in an effort to explore the work-related violence research questions in a way that had not previously been considered. Utilization of multiple data sources allowed for the primary exposure, school resource level, to be measured in two distinct ways: 1) actual expenditure dollar amounts allocated to school resources (MDE), and 2) educators' self-reported levels of school resources (MES). Results suggested, through both exposure measurement methods, that there is a relation between disparities in or lack of access to school resources and physical assault; particularly notable, in this population, were the increased risks of physical assault with insufficient access to specific school resources, such as sports and extracurricular activities.

Results of this study can inform Minnesota's school funding and resource allocation policy at both the State- and local school-levels. To improve outcomes for both students and teachers, in the face of dwindling school resources and funds, careful consideration of funding schemes and methods for allocation of existing school resources is critical. At present, consideration of the relations between school resources and various school-level

outcomes is particularly relevant in Minnesota, as the State Legislature is currently revisiting a major K-12 education funding bill. If passed, the new K-12 school funding reform bill, which has been coined the "New Minnesota Miracle" education bill, would provide schools with $1.7 billion in new money in the year following its passage. This bill, which has been coined after the 1970's landmark education funding bill that shifted education funding from property taxes to primarily State funding for schools in Minnesota, would also seek to further equalize funding across school districts (Draper, 2008).

Many local schools, confronted with the increasing costs and finite resources have looked to cut costs at their schools. Often, extracurricular (i.e., sports and music) programs, which are frequently seen as supplementary to primary in-class instruction, are the first programs to experience the cuts. For example, one Minnesota school district recently announced that their 2008-2009 sports and activities budget would be reduced by $860,000 and fees associated with student participation in sports or extracurricular activities would increase 300 percent (Walton, 2008). Based on the results of the current study, such cuts to sports and extracurricular program budgets may have unintended consequences, such as increased violence in the schools. Additional research is needed to fully elucidate the nature of the relations among the numerous interpersonal, school, community, and environmental factors that may contribute to the student-perpetrated violence that occurs in schools.

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APPENDIX A

Comprehensive (Phase I) Study Cover Letter, Information Sheet, and Questionnaires

MES (Phase I) Cover Letter

PHASE 1 (COMPREHENSIVE) FOLLOW-UP 1 COVER LETTER

Date

Name
Address
Address

Dear <<Teacher Name>>:

Recently, you were sent a questionnaire regarding your experience, as a Minnesota educator, with violence in the workplace. An information sheet is enclosed on the back of this letter regarding the details of the Minnesota Educators' Study. At the time of this mailing, our records indicated that you had not yet returned your questionnaire. If you have, please accept our apologies for this reminder. The valuable information that you can provide will enable us to identify the magnitude of work-related violence for educators in Minnesota. In addition, it will help to identify risk and protective factors for violence that will serve as a basis for developing prevention programs. In order to do this study accurately, we need information from each selected educator, *whether or not they experienced either physical or non-physical violence.*

We realize you are busy, but hope you can find just 10 to 20 minutes of time to participate. **Please complete the enclosed questionnaire and return it to us in the enclosed postage-paid envelope by <<Date>>.**

We are providing savings bonds valued at $100 each to 250 randomly selected individuals. The opportunity for receiving a bond will be at least 1 in 75 individuals; however, this will vary based on the number of respondents. Individuals who are awarded the bonds will be notified at the completion of the data collection for both phases of the study (approximately May 2006). By returning your questionnaire, indicating you would like to be included in the drawing, you will be eligible whether or not you participate in the study.

If you have any questions, please contact us at 612-626-4801 or toll-free at 1-877-70-TEACH (1-877-708-3224). If you have any questions or concerns regarding this study and would like to talk to someone other than the researchers, you are encouraged to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650. We appreciate your consideration of this effort and look forward to receiving your questionnaire.

Sincerely,

Susan Goodwin Gerberich, Ph.D.
Principal Investigator
Regional Injury Prevention Research Center and
Center for Violence Prevention and Control
Division of Environmental Health Sciences
University of Minnesota

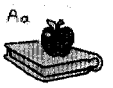
Nancy Nachreiner, Ph.D., R.N.
Project Director

Enclosures

MESID: SID:

Please see other side. →

MES (Phase I) Information Sheet



Minnesota Educators' Study

Purpose of the Study

The purpose of this study is to assess the magnitude and consequences of violence against licensed Minnesota educators and to identify risk factors for this problem. It is our hope that this study will improve our understanding of work-related violence and will eventually improve the overall safety and work conditions in Minnesota schools. Violence includes both physical assault and non-physical violence (threats, sexual harassment, verbal abuse, and bullying). This study is being conducted by the Regional Injury Prevention Research Center and the Center for Violence Prevention and Control, in the Division of Environmental Health Sciences, School of Public Health, University of Minnesota.

Study Procedures:

In addition to the enclosed form to determine which educators have worked in Minnesota during the previous twelve months, this study involves two questionnaires. The first questionnaire collects information about work-related violence events (both physical and non-physical) that you may have experienced during the past twelve months, and may take approximately 20 minutes of your time. Some educators who respond to the first questionnaire may be asked to complete a second questionnaire, which will be sent in the next few months. The second questionnaire, which will take about 20 minutes, collects information that will be compared between licensed educators who *reported work-related violence events* to a random sample of licensed educators who *did not report such incidents* during the past twelve months. *In order to obtain optimal information, we ask everyone who receives a questionnaire to participate, whether or not they experienced either physical or non-physical violence.* Responses from all educators will enable us to identify both risk and protective factors that can be used to develop relevant prevention efforts.

Savings Bonds Drawing:

A minimum of 250 randomly selected individuals will receive $100 savings bonds. The opportunity for receiving a bond will be *at least* 1 in 75 individuals; however, this will vary based on the number of respondents. By indicating you would like to be included in the drawing, you will be eligible whether or not you participate in the study. Individuals who are awarded the bonds will be notified at the completion of the data collection for both phases of the study (approximately May 2006). Although we cannot supply the names of those chosen to receive bonds because of confidentiality issues, we will post a notice on our website (http://www1.umn.edu/cvpc/research.html) when the individuals are randomly selected to receive the savings bonds. After that notice is posted, you may call the numbers identified below and request further verification of the disbursement of the bonds, if you wish.

Voluntary Participation:

Participation in this study is voluntary. Choosing not to participate will not affect your future relations with any of the persons or institutions involved in this effort. We recognize that some questions included in these questionnaires may evoke painful memories; however, you are free to skip questions that you choose not to answer. We are required to maintain confidentiality regarding your participation; any information will be reported only in summary form and no individual or institution will ever be identified.

Questions:

If you have any questions, please contact Dr. Susan Gerberich or Dr. Nancy Nachreiner at 612-626-4801 or toll free at 1-877-70-TEACH (1-877-708-3224). If you have any questions or concerns regarding this study and would like to talk to someone other than the researchers, you are encouraged to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650.

We look forward to your involvement in this important study!

Please see other side. ⟶

MES (Phase I), Long Form

Minnesota Educators' Study: Phase I

Center for Violence Prevention and Control
Division of Environmental Health Sciences
School of Public Health, University of Minnesota
MMC 807, 420 Delaware St. SE
Minneapolis, MN 55455

Telephone: 612-626-4801; or toll free: 1-877-70-TEACH (1-877-708-3224)

Confidentiality - The information that you provide will be kept strictly confidential and no information that could personally identify you or the facility in which you work(ed) will ever be made public. Only investigators at the University of Minnesota will ever have access to this information. **If there is any question you do not wish to answer, please mark an X on the question number, and continue to the next question.**

123456-7 123456

Drawing - We are providing savings bonds valued at $100 each to 250 randomly selected individuals. You are not required to complete the questionnaire to be eligible for this drawing; however, you do need to check yes or no below, and return this questionnaire in the envelope provided.

1 ☐ **Yes**, include me in the savings bond drawing 2 ☐ **No**, do not include me in the savings bond drawing

1. Are you the person to whom this questionnaire was sent?

1 ☐ Yes 2 ☐ No → Please call 1-877-708-3224 toll free, so that we may clarify the situation.

2. What is today's date? _____/_____/_____
month day year

3. Did you work as a licensed educator for a school (Kindergarten through Twelfth Grade), for any amount of time, in Minnesota, in the 12 months prior to today's date?

1 ☐ Yes 2 ☐ No → **IF NO**, Thank you for taking the time to respond. Please stop here and return the questionnaire in the enclosed envelope.

IF YES, Please continue to the next page.

4. We would like to know about the hours you worked, as a licensed educator in Minnesota, for the 12 months prior to today's date. Below is a calendar to prompt your memory about your past work schedule. Please write in the number of days worked each month, and average number of hours you worked per day. If you did not work as a licensed educator during a specific month, please write "0." Please include the time you spent in direct student contact, preparation time, and other school-related assignments.

EXAMPLE: May 2004 is completed below as an example. This example shows the educator worked 18 days during May 2004, and worked on average 9 hours per day. *Please complete the days and hours you worked for each of the previous 12 months.*

May 2004
Days worked: 18
Hours per day: 9

May 2004

S	M	T	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

EXAMPLE

June 2004
Days worked: ____
Hours per day: ____

June 2004

S	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

July 2004
Days worked: ____
Hours per day: ____

July 2004

S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

August 2004
Days worked: ____
Hours per day: ____

August 2004

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

September 2004
Days worked: ____
Hours per day: ____

September 2004

S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

October 2004
Days worked: ____
Hours per day: ____

October 2004

S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

November 2004
Days worked: ____
Hours per day: ____

November 2004

S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

December 2004
Days worked: ____
Hours per day: ____

December 2004

S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

January 2005
Days worked: ____
Hours per day: ____

January 2005

S	M	T	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

February 2005
Days worked: ____
Hours per day: ____

February 2005

S	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

March 2005
Days worked: ____
Hours per day: ____

March 2005

S	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

April 2005
Days worked: ____
Hours per day: ____

April 2005

S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

May 2005
Days worked: ____
Hours per day: ____

May 2005

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

June 2005
Days worked: ____
Hours per day: ____

June 2005

S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

July 2005
Days worked: ____
Hours per day: ____

July 2005

S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

August 2005
Days worked: ____
Hours per day: ____

August 2005

S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

September 2005
Days worked: ____
Hours per day: ____

September 2005

S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

October 2005
Days worked: ____
Hours per day: ____

October 2005

S	M	T	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

November 2005
Days worked: ____
Hours per day: ____

November 2005

S	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

December 2005
Days worked: ____
Hours per day: ____

December 2005

S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

5. In what type(s) of school(s) did you work in the 12 months prior to today's date? *Check all that apply.*

1 ☐ Public
2 ☐ Public Alternative
3 ☐ Public Charter
4 ☐ Public Magnet
5 ☐ Private (Parochial)
6 ☐ Private (Non-Parochial)

6. In what type(s) of school did you work the most time in the 12 months prior to today's date? *Check one.*

1 ☐ Public
2 ☐ Public Alternative
3 ☐ Public Charter
4 ☐ Public Magnet
5 ☐ Private (Parochial)
6 ☐ Private (Non-Parochial)
7 ☐ No one school type was most common

7. Consider the school where you worked the most time in the past 12 months. What is the total length of time that you have worked in that school? *Please indicate the number of years and/or months.*

_____ year(s) _____ month(s)

8. What grade level(s) were taught in the school where you worked the most time? *Check all that apply.*

1 ☐ Kindergarten
2 ☐ First Grade
3 ☐ Second Grade
4 ☐ Third Grade
5 ☐ Fourth Grade
6 ☐ Fifth Grade
7 ☐ Sixth Grade
8 ☐ Seventh Grade
9 ☐ Eighth Grade
10 ☐ Ninth Grade
11 ☐ Tenth Grade
12 ☐ Eleventh Grade
13 ☐ Twelfth Grade

9. What was your job classification in the school where you worked the most time? *Check one.*

1 ☐ Full-time contract
2 ☐ Part-time contract
3 ☐ Long-call substitute
4 ☐ Building substitute (assigned daily to one building to cover classes as needed)
5 ☐ All other substitutes (day-to-day, short call, etc.)

10. Please check all of your professional activities in the 12 months prior to today's date. *Check all that apply.*

1 ☐ Classroom teacher
2 ☐ Librarian/Media Specialist
3 ☐ School Nurse
4 ☐ Administrator
5 ☐ Superintendent
6 ☐ Dean of Students
7 ☐ Teacher Assistant/Aide
8 ☐ Advisor to Extra-Curricular Activities
9 ☐ Guidance Counselor
10 ☐ Coach
11 ☐ School Psychologist
12 ☐ School Social Worker
13 ☐ Special Education
14 ☐ Department Chair/Instructional Leader
15 ☐ Other, specify _____

11. Please check your one most frequent activity in the 12 months prior to today's date. *Check one.*

1 ☐ Classroom teacher
2 ☐ Librarian/Media Specialist
3 ☐ School Nurse
4 ☐ Administrator
5 ☐ Superintendent
6 ☐ Dean of Students
7 ☐ Teacher Assistant/Aide
8 ☐ Advisor to Extra-Curricular Activities
9 ☐ Guidance Counselor
10 ☐ Coach
11 ☐ School Psychologist
12 ☐ School Social Worker
13 ☐ Special Education
14 ☐ Department Chair/Instructional Leader
15 ☐ Other, specify _____
16 ☐ No one activity was most common.

12. Did you teach students in a classroom or other setting in which instruction occurred in the 12 months prior to today's date? *Check one.*

1 ☐ Yes 2 ☐ No → ***IF NO, go to Question 19.***

13. What grade level(s) did you teach in the 12 months prior to today's date? *Check all that apply.*

1 ☐ Kindergarten
2 ☐ First Grade
3 ☐ Second Grade
4 ☐ Third Grade
5 ☐ Fourth Grade
6 ☐ Fifth Grade
7 ☐ Sixth Grade
8 ☐ Seventh Grade
9 ☐ Eighth Grade
10 ☐ Ninth Grade
11 ☐ Tenth Grade
12 ☐ Eleventh Grade
13 ☐ Twelfth Grade

14. What grade level did you teach most frequently in the 12 months prior to today's date? *Check one.*

1 ☐ Kindergarten
2 ☐ First Grade
3 ☐ Second Grade
4 ☐ Third Grade
5 ☐ Fourth Grade
6 ☐ Fifth Grade
7 ☐ Sixth Grade
8 ☐ Seventh Grade
9 ☐ Eighth Grade
10 ☐ Ninth Grade
11 ☐ Tenth Grade
12 ☐ Eleventh Grade
13 ☐ Twelfth Grade
14 ☐ No one grade level was most frequently taught.

15. What topic(s) did you teach in the 12 months prior to today's date? *Check all that apply.*

1 ☐ Elementary Education
2 ☐ English
3 ☐ Language Arts
4 ☐ Reading
5 ☐ Fine Arts
6 ☐ Mathematics
7 ☐ Science
8 ☐ Social Studies
9 ☐ World Language (non-English)
10 ☐ Family Consumer Science
11 ☐ Business Education
12 ☐ Computer Technology
13 ☐ Industrial Technology/Applied Arts
14 ☐ English Language Learners/ESL
15 ☐ Special Education
16 ☐ Speech Pathology
17 ☐ Physical Education
18 ☐ Driver's Education
19 ☐ Other, specify _____

16. What topic did you teach most frequently in the 12 months prior to today's date? *Check one.*

1 ☐ Elementary Education
2 ☐ English
3 ☐ Language Arts
4 ☐ Reading
5 ☐ Fine Arts
6 ☐ Mathematics
7 ☐ Science
8 ☐ Social Studies
9 ☐ World Language (non-English)
10 ☐ Family Consumer Science
11 ☐ Business Education
12 ☐ Computer Technology
13 ☐ Industrial Technology/Applied Arts
14 ☐ English Language Learners/ESL
15 ☐ Special Education
16 ☐ Speech Pathology
17 ☐ Physical Education
18 ☐ Driver's Education
19 ☐ Other, specify _____
20 ☐ No one topic was most frequently taught.

17. What was your typical class size in the 12 months prior to today's date? *Check one.*

1 ☐ Less than 10
2 ☐ 10 to less than 25
3 ☐ 25 to less than 45
4 ☐ 45 to less than 55
5 ☐ 55 or more

18. Were there typically any other *personnel* (licensed educators or non-educators), besides yourself, in your classroom (or other setting in which instruction occurred) in the 12 months prior to today's date? *Check only one.*

1 ☐ Yes 2 ☐ No

The next section pertains to **work-related violence events**. **Work-related** includes any activities associated with jobs or events that occur in your work environment; work-related travel is included. **Work-related violence** is defined as the intentional use of physical force or emotional abuse, against an employee, that results in physical or emotional injury and consequences. This includes *physical assault, threat, sexual harassment, verbal abuse, and bullying.*

PHYSICAL VIOLENCE

Physical assault occurs when you are hit, slapped, kicked, pushed, choked, grabbed, sexually assaulted, or otherwise subjected to physical contact intended to injure or harm you. **Questions 19 through 46 relate to physical assault only**; questions about threat, sexual harassment, verbal abuse, and bullying will follow.

19. Were you the target of a work-related physical assault at any time during the 12 months prior to today's date? *Check YES or NO.*

1 ☐ Yes 2 ☐ No → *IF NO, go to Page 11.*

20. Please describe the(se) event(s): *Check one.*

1 ☐ Single event (one-time occurrence)
2 ☐ Multiple events (specific separate events that you can describe)
3 ☐ Ongoing events (events that occur with such frequency that you are only able to describe them in general) → If ongoing, please estimate the number of events in the past 12 months: _____ *number of violent events*

If you experienced **single or multiple events**, please describe each event (1-4) below; if you experienced **ongoing violence**, please complete the Event 1 columns regarding how the events occurred, in general, and please write in the **earliest date** the events occurred in the past 12 months.

Please provide the following information for each physical assault event that happened to you during the 12 months prior to today's date.

- If you experienced more than one event, it may be easier to first complete Questions 21 through 46 for Event 1, and then go back and complete Questions 21 through 46 for Event 2, etc.
- If you experienced more than 4 events in the previous 12 months, please provide information for Questions 21 through 46 for each event on a separate sheet of paper, or call 1-877-708-3224 toll free, or 612-626-4801, for additional copies of this questionnaire.

	Event 1	Event 2	Event 3	Event 4
21. Date(s) of physical assault(s): *Fill in month and year. If unsure of exact month, please give your best estimate.*	__/____ mo./yr.	__/____ mo./yr.	__/____ mo./yr.	__/____ mo./yr.
22. Time(s) of physical assault(s): *Check all that apply for each event.*				
1 During regular school hours	1☐	1☐	1☐	1☐
2 Before or after regular school hours	2☐	2☐	2☐	2☐
8 Unsure	8☐	8☐	8☐	8☐
23. What was(were) the location(s) of the physical assault(s)? *Check all that apply for each event.*				
1 Classroom	1☐	1☐	1☐	1☐
How many people were in the room?				
2 Hallway	2☐	2☐	2☐	2☐
3 Parking area	3☐	3☐	3☐	3☐
4 Stairway	4☐	4☐	4☐	4☐
5 Staff or student lounge	5☐	5☐	5☐	5☐
6 Away from school property	6☐	6☐	6☐	6☐
7 In a vehicle (bus, etc.)	7☐	7☐	7☐	7☐
8 Athletic field/court	8☐	8☐	8☐	8☐
9 Extra curricular setting (stage, etc.)	9☐	9☐	9☐	9☐
10 Other	10☐	10☐	10☐	10☐
Specify				
11 Unsure	11☐	11☐	11☐	11☐
24. Did only one person assault you? *Check one for each event.*				
1 Yes	1☐	1☐	1☐	1☐
2 No (more than one)	2☐	2☐	2☐	2☐
8 Unsure	8☐	8☐	8☐	8☐

Please continue to next page. →

	Event 1	Event 2	Event 3	Event 4
25. What was(were) your relationship(s) with the person(s) who physically assaulted you? *Check all that apply for each event.*				
1 Your current student	1☐	1☐	1☐	1☐
2 Your former student	2☐	2☐	2☐	2☐
3 Another currently enrolled student	3☐	3☐	3☐	3☐
4 Another formerly enrolled student	4☐	4☐	4☐	4☐
5 Someone you supervise	5☐	5☐	5☐	5☐
6 Another employee	6☐	6☐	6☐	6☐
7 Parent	7☐	7☐	7☐	7☐
8 Visitor	8☐	8☐	8☐	8☐
9 Trespasser	9☐	9☐	9☐	9☐
10 No professional relationship	10☐	10☐	10☐	10☐
11 Other Specify	11☐	11☐	11☐	11☐
88 Unsure	88☐	88☐	88☐	88☐
26. What was(were) the gender(s) of the person(s) who physically assaulted you? *Check all that apply for each event.*				
1 Male	1☐	1☐	1☐	1☐
2 Female	2☐	2☐	2☐	2☐
8 Unsure	8☐	8☐	8☐	8☐
27. Was(were) the perpetrator(s) of the physical assault of the same race/ethnicity as you? *Check one for each event.*				
1 Yes	1☐	1☐	1☐	1☐
2 No	2☐	2☐	2☐	2☐
8 Unsure	8☐	8☐	8☐	8☐
28. In what age group(s) was(were) the person(s) who physically assaulted you? *Check all that apply for each event.*				
1 Age less than 13 years	1☐	1☐	1☐	1☐
2 13 years to less than 16 years	2☐	2☐	2☐	2☐
3 16 years to less than 18 years	3☐	3☐	3☐	3☐
4 Adult	4☐	4☐	4☐	4☐
8 Unsure	8☐	8☐	8☐	8☐
29. Was(were) the person(s) who physically assaulted you impaired? *Check all that apply for each event.*				
1 Yes, because of injury or illness (physical impairment, hearing impairment, etc.)	1☐	1☐	1☐	1☐
2 Yes, because of disability (learning, emotional, autism, etc.) or developmental delay	2☐	2☐	2☐	2☐
3 Yes, under influence of alcohol, aerosols, or drugs (prescribed or non-prescribed)	3☐	3☐	3☐	3☐
4 Not impaired	4☐	4☐	4☐	4☐
5 Unsure	5☐	5☐	5☐	5☐
30. What did the person(s) use to physically assault you? *Check all that apply for each event.*				
1 Hands/Arms	1☐	1☐	1☐	1☐
2 Feet/Legs	2☐	2☐	2☐	2☐
3 Teeth	3☐	3☐	3☐	3☐
4 Genitals	4☐	4☐	4☐	4☐
5 Gun	5☐	5☐	5☐	5☐
6 Knife	6☐	6☐	6☐	6☐
7 Bodily Fluids (e.g., spit)	7☐	7☐	7☐	7☐
8 Other, Specify	8☐	8☐	8☐	8☐
9 Unsure	9☐	9☐	9☐	9☐

	Event 1	Event 2	Event 3	Event 4
31. Was(were) the event(s) witnessed? *Check one for each event.*				
1 Yes	1☐	1☐	1☐	1☐
2 No	2☐	2☐	2☐	2☐
8 Unsure	8☐	8☐	8☐	8☐
32. What was(were) the type(s) of physical injury? *Check all that apply for each event.*				
1 Abrasion	1☐	1☐	1☐	1☐
2 Amputation	2☐	2☐	2☐	2☐
3 Asphyxia	3☐	3☐	3☐	3☐
4 Bite	4☐	4☐	4☐	4☐
5 Bruise/contusion	5☐	5☐	5☐	5☐
6 Burn	6☐	6☐	6☐	6☐
7 Concussion (Loss of consciousness/awareness)	7☐	7☐	7☐	7☐
8 Crushing/mangling	8☐	8☐	8☐	8☐
9 Cut/laceration/scratch	9☐	9☐	9☐	9☐
10 Fracture/dislocation	10☐	10☐	10☐	10☐
11 Nerve injury	11☐	11☐	11☐	11☐
12 Penetration injury including puncture	12☐	12☐	12☐	12☐
13 Poisoning	13☐	13☐	13☐	13☐
14 Rupture	14☐	14☐	14☐	14☐
15 Sexual assault	15☐	15☐	15☐	15☐
16 Sprain/strain	16☐	16☐	16☐	16☐
17 Temporary discoloration/slap mark	17☐	17☐	17☐	17☐
18 Torn ligament	18☐	18☐	18☐	18☐
19 Other Specify	19☐	19☐	19☐	19☐
20 None	20☐	20☐	20☐	20☐
33. What body part(s) was(were) injured? *Check all that apply for each event.*				
1 Head/skull/brain	1☐	1☐	1☐	1☐
2 Face (forehead, cheek, nose, lip, jaw, ear)	2☐	2☐	2☐	2☐
3 Eye/eyelid	3☐	3☐	3☐	3☐
4 Teeth	4☐	4☐	4☐	4☐
5 Neck (cervical area)	5☐	5☐	5☐	5☐
6 Back (muscles, skin)	6☐	6☐	6☐	6☐
7 Internal chest	7☐	7☐	7☐	7☐
8 External chest (muscles, skin)	8☐	8☐	8☐	8☐
9 Spinal cord/spine (vertebrae, sacrum, tailbone, coccyx, disks)	9☐	9☐	9☐	9☐
10 Internal abdomen	10☐	10☐	10☐	10☐
11 External abdomen (muscles, skin)	11☐	11☐	11☐	11☐
12 Shoulder/collar bone, shoulder blade	12☐	12☐	12☐	12☐
13 Arm/elbow/wrist	13☐	13☐	13☐	13☐
14 Hand/fingers/thumb(s)	14☐	14☐	14☐	14☐
15 Internal hips/pelvis (uterus, ovaries, bladder, rectum)	15☐	15☐	15☐	15☐
16 External hips/pelvis (muscles, skin)	16☐	16☐	16☐	16☐
17 Buttocks	17☐	17☐	17☐	17☐
18 Genitalia	18☐	18☐	18☐	18☐
19 Leg (thigh, shin, calf, knee, ankle)	19☐	19☐	19☐	19☐
20 Foot/heel, toes	20☐	20☐	20☐	20☐
21 General systems (e.g., respiratory, cardiovascular)	21☐	21☐	21☐	21☐
22 Other Specify	22☐	22☐	22☐	22☐
23 None	23☐	23☐	23☐	23☐

	Event 1	Event 2	Event 3	Event 4
34. As a result of the physical assault(s), what types of <u>symptoms/ feelings</u> have you experienced? *Check all that apply for each event.*				
1 Anger	1☐	1☐	1☐	1☐
2 Depression	2☐	2☐	2☐	2☐
3 Sadness	3☐	3☐	3☐	3☐
4 Fatigue	4☐	4☐	4☐	4☐
5 Frustration	5☐	5☐	5☐	5☐
6 Fear/anxiety/stress	6☐	6☐	6☐	6☐
7 Shame/Low self-esteem/Low self-confidence	7☐	7☐	7☐	7☐
8 Stress-related physical symptoms (headaches, stomach problems, etc.)	8☐	8☐	8☐	8☐
9 Difficulty sleeping	9☐	9☐	9☐	9☐
10 Nightmares	10☐	10☐	10☐	10☐
11 Hallucinations	11☐	11☐	11☐	11☐
12 Flashbacks	12☐	12☐	12☐	12☐
13 Difficulty concentrating	13☐	13☐	13☐	13☐
14 Irritability	14☐	14☐	14☐	14☐
15 Intrusive thoughts about the event	15☐	15☐	15☐	15☐
16 Hyperarousal/Hypervigilance/Overly cautious	16☐	16☐	16☐	16☐
17 Avoidance of any reminders of the event	17☐	17☐	17☐	17☐
18 Resurfacing memories of previous trauma	18☐	18☐	18☐	18☐
19 Withdrawal from contact with people	19☐	19☐	19☐	19☐
20 Other, Specify	20☐	20☐	20☐	20☐
21 None	21☐	21☐	21☐	21☐
35. Did <u>any</u> of your symptoms (identified in Question 34) last <u>for at least 1 month</u>? *Check one for each event.*				
1 Yes	1☐	1☐	1☐	1☐
2 No	2☐	2☐	2☐	2☐
3 1 month has not passed since the event occurred	3☐	3☐	3☐	3☐
36. Did <u>any</u> of your symptoms (identified in Question 34) last <u>for 6 months or more</u>? *Check one for each event.*				
1 Yes	1☐	1☐	1☐	1☐
2 No	2☐	2☐	2☐	2☐
3 6 months have not passed since the event occurred	3☐	3☐	3☐	3☐
37. Are you <u>currently experiencing any persistent problems or symptoms</u> related to this(these) event(s)? *Check one for each event.*				
1 Yes If YES, please describe	1☐	1☐	1☐	1☐
2 No	2☐	2☐	2☐	2☐
38. Were you <u>treated</u> by any of the following as a result of this(these) event(s)? *Check all that apply for each event.*				
1 No treatment	1☐	1☐	1☐	1☐
2 Physician (non-Psychiatrist)	2☐	2☐	2☐	2☐
3 Dentist	3☐	3☐	3☐	3☐
4 Chiropractor	4☐	4☐	4☐	4☐
5 Nurse/Nurse Practitioner/Nurse Clinician/Physician's Assistant	5☐	5☐	5☐	5☐
6 Psychiatrist/Psychologist/Therapist	6☐	6☐	6☐	6☐
7 Physical/Occupational Therapist	7☐	7☐	7☐	7☐
8 Athletic Trainer	8☐	8☐	8☐	8☐
9 Paramedics/Emergency Medical Technician	9☐	9☐	9☐	9☐
10 Homeopathic, Alternative, or Non-traditional medicine provider	10☐	10☐	10☐	10☐
11 Treated yourself	11☐	11☐	11☐	11☐
12 Other, Specify	12☐	12☐	12☐	12☐

	Event 1	Event 2	Event 3	Event 4
39. Were you admitted to a hospital as a result of this(these) event(s)? *Check one for each event.*				
1 Yes	1	1	1	1
If YES, for how many days?				
2 No	2	2	2	2
40. What changes in your work situation occurred as a result of this(these) event(s)? *Check all that apply for each event.*				
1 Quit your job	1	1	1	1
2 Voluntary transfer to another location	2	2	2	2
3 Involuntary transfer to another location	3	3	3	3
4 Leave of absence	4	4	4	4
5 Restriction/modification of work activities	5	5	5	5
6 No changes	6	6	6	6
7 Other,	7	7	7	7
Specify				
41. How long were regular work and/or non-work activities restricted as a result of this(these) event(s)? *Check one for each event.*				
1 Less than 4 hours	1	1	1	1
2 4 hours to less than 1 day	2	2	2	2
3 1 day to less than 3 days	3	3	3	3
4 3 days to less than 7 days	4	4	4	4
5 7 days to less than 14 days	5	5	5	5
6 14 days to less than 1 month	6	6	6	6
7 1 month to less than 3 months	7	7	7	7
8 3 months or more	8	8	8	8
9 No restriction	9	9	9	9
42. Are your regular activities still restricted as a result of this(these) event(s)? *Check one for each event.*				
1 Yes	1	1	1	1
2 No	2	2	2	2
43. As a result of this(these) event(s), how long were you absent from work? *Check one for each event.*				
1 Less than 4 hours	1	1	1	1
2 4 hours to less than 1 day	2	2	2	2
3 1 day to less than 3 days	3	3	3	3
4 3 days to less than 7 days	4	4	4	4
5 7 days to less than 14 days	5	5	5	5
6 14 days to less than 1 month	6	6	6	6
7 1 month to less than 3 months	7	7	7	7
8 3 months or more	8	8	8	8
9 No absence	9	9	9	9
44. How would you rate the severity of your symptom(s)/problem(s) resulting from this(these) event(s)? Consider any limitation of your abilities (physical/mental) and/or activities. *Check one for each event.*				
1 No limitations of abilities/activities	1	1	1	1
2 Some limitations of abilities/activities	2	2	2	2
3 Moderate limitations of abilities/activities	3	3	3	3
4 Severe limitations of abilities/activities	4	4	4	4
5 Disabling—inability to function	5	5	5	5

45. Did you report the event(s) to administration? *Check all that apply for each event.*	Event 1	Event 2	Event 3	Event 4
1 Yes, orally	1☐	1☐	1☐	1☐
2 Yes, written	2☐	2☐	2☐	2☐
3 No, I did not report the event	3☐	3☐	3☐	3☐
If YES, in your opinion, was administration adequately responsive to your report?				
4 Yes	4☐	4☐	4☐	4☐
5 No	5☐	5☐	5☐	5☐
6 Unsure	6☐	6☐	6☐	6☐
If NO, please check reason(s) that event(s) was(were) not reported.				
7 Reporting takes too much time	7☐	7☐	7☐	7☐
8 Unaware of reporting process	8☐	8☐	8☐	8☐
9 Did not expect report to change situation	9☐	9☐	9☐	9☐
10 Did not feel necessary to report	10☐	10☐	10☐	10☐
11 Other	11☐	11☐	11☐	11☐
Specify	_____	_____	_____	_____

Comments regarding reporting: _____

46. Please describe how each event occurred. What were you doing just prior to the event? What was the person(s) who assaulted you doing just prior to the event? What triggered the event? Describe how you were assaulted. ***Please use additional paper as necessary.***

Event 1: _____

Event 2: _____

Event 3: _____

Event 4: _____

NON-PHYSICAL VIOLENCE

Questions 47 through 72 pertain to non-physical violence directed at you: work-related threats, sexual harassment, verbal abuse, and bullying.
A **threat** occurs when someone uses words, gestures, or actions with the intent of intimidating, frightening, or causing harm to you (physically or otherwise). Threats may also include theft or property damage.
Sexual harassment occurs when you experience any type of unwelcome sexual behavior (words or actions) that creates a hostile work environment.
Verbal abuse occurs when someone yells or swears at you, calls you names, or uses other words intended to control or hurt you.
Bullying is defined as repeated acts of intimidation or coercion.

47. Did you experience any work-related threats, sexual harassment, verbal abuse, or bullying, according to the above definitions, within the 12 months prior to today's date? *Check one.*

1 ☐ Yes 2 ☐ No → ***IF NO, go to Page 16.***

Please provide the following information for any threats, sexual harassment, verbal abuse, or bullying that you experienced during the 12 months prior to today's date. This may include either a single event, with one or more persons, or multiple events with one or more persons.

	Threat	Sexual Harassment	Verbal Abuse	Bullying
48. Place a check under each type of behavior(s) you have experienced at work.	1 ☐	1 ☐	1 ☐	1 ☐
49. How frequently did each type of behavior(s) occur? *Check one response per column.*				
1 1 to 3 times	1 ☐	1 ☐	1 ☐	1 ☐
2 4 to 9 times	2 ☐	2 ☐	2 ☐	2 ☐
3 10 to 19 times	3 ☐	3 ☐	3 ☐	3 ☐
4 20 times or more	4 ☐	4 ☐	4 ☐	4 ☐
50. Over what time period did the behavior(s) occur? *Check one response per column.*				
1 Single event	1 ☐	1 ☐	1 ☐	1 ☐
2 Less than 1 week	2 ☐	2 ☐	2 ☐	2 ☐
3 1 week to less than 1 month	3 ☐	3 ☐	3 ☐	3 ☐
4 1 month to less than 3 months	4 ☐	4 ☐	4 ☐	4 ☐
5 3 months to less than 6 months	5 ☐	5 ☐	5 ☐	5 ☐
6 6 months to less than 9 months	6 ☐	6 ☐	6 ☐	6 ☐
7 9 months to 1 year or more	7 ☐	7 ☐	7 ☐	7 ☐
51. Is(are) the behavior(s) still continuing? *Check one response per column.*				
1 Yes	1 ☐	1 ☐	1 ☐	1 ☐
2 No	2 ☐	2 ☐	2 ☐	2 ☐
52. How did the behavior(s) occur (in most situations)? *Check all that apply per column.*				
1 Directly (Behavior occurred to you or in your presence)	1 ☐	1 ☐	1 ☐	1 ☐
2 Indirectly (Made aware of the behavior by someone else)	2 ☐	2 ☐	2 ☐	2 ☐

	Threat	Sexual Harassment	Verbal Abuse	Bullying
53. What was the nature of the behavior(s) (in most situations)? *Check all that apply per column.*				
1 Physical (gesture, inappropriate touch, facial expression, etc.)	1 ☐	1 ☐	1 ☐	1 ☐
2 Verbal (telephone, etc.)	2 ☐	2 ☐	2 ☐	2 ☐
3 Graphic (picture, writing, email, webpage, etc.)	3 ☐	3 ☐	3 ☐	3 ☐
4 Theft/Destruction of property	4 ☐	4 ☐	4 ☐	4 ☐
5 Other	5 ☐	5 ☐	5 ☐	5 ☐
Specify	_____	_____	_____	_____
54. What was your relationship with the person(s) who threatened/sexually harassed/verbally abused/bullied you (in most situations)? *Check all that apply per column.*				
1 Your current student	1 ☐	1 ☐	1 ☐	1 ☐
2 Your former student	2 ☐	2 ☐	2 ☐	2 ☐
3 Another currently enrolled student	3 ☐	3 ☐	3 ☐	3 ☐
4 Another formerly enrolled student	4 ☐	4 ☐	4 ☐	4 ☐
5 Someone you supervise	5 ☐	5 ☐	5 ☐	5 ☐
6 Another employee	6 ☐	6 ☐	6 ☐	6 ☐
7 Parent	7 ☐	7 ☐	7 ☐	7 ☐
8 Visitor	8 ☐	8 ☐	8 ☐	8 ☐
9 Trespasser	9 ☐	9 ☐	9 ☐	9 ☐
10 No professional relationship	10 ☐	10 ☐	10 ☐	10 ☐
11 Other	11 ☐	11 ☐	11 ☐	11 ☐
Specify	_____	_____	_____	_____
88 Unsure	88 ☐	88 ☐	88 ☐	88 ☐
55. What was(were) the gender(s) of the person(s) who threatened/sexually harassed/verbally abused/bullied you (in most situations)? *Check all that apply per column.*				
1 Male	1 ☐	1 ☐	1 ☐	1 ☐
2 Female	2 ☐	2 ☐	2 ☐	2 ☐
8 Unsure	8 ☐	8 ☐	8 ☐	8 ☐
56. Was the race/ethnicity of the person(s) (in most situations) the same as your own? *Check all that apply per column.*				
1 Yes	1 ☐	1 ☐	1 ☐	1 ☐
2 No	2 ☐	2 ☐	2 ☐	2 ☐
3 Unsure	3 ☐	3 ☐	3 ☐	3 ☐
57. In what age group(s) was(were) this(these) person(s) (in most situations)? *Check all that apply per column.*				
1 Age less than 13 years	1 ☐	1 ☐	1 ☐	1 ☐
2 13 years to less than 16 years	2 ☐	2 ☐	2 ☐	2 ☐
3 16 years to less than 18 years	3 ☐	3 ☐	3 ☐	3 ☐
4 Adult	4 ☐	4 ☐	4 ☐	4 ☐
8 Unsure	8 ☐	8 ☐	8 ☐	8 ☐
58. Was(were) this(these) person(s) impaired (in most situations)? *Check all that apply per column.*				
1 Yes, because of injury or illness (physical impairment, hearing impairment, etc.)	1 ☐	1 ☐	1 ☐	1 ☐
2 Yes, because of disability (learning, emotional, autism, etc.) or developmental delay	2 ☐	2 ☐	2 ☐	2 ☐
3 Yes, under influence of alcohol, aerosols, or drugs (prescribed or non-prescribed)	3 ☐	3 ☐	3 ☐	3 ☐
4 Not impaired	4 ☐	4 ☐	4 ☐	4 ☐
5 Unsure	5 ☐	5 ☐	5 ☐	5 ☐

	Threat	Sexual Harassment	Verbal Abuse	Bullying
59. Was(were) the behavior(s) witnessed? *Check one response per column.*				
1 Yes, at least once	1 ☐	1 ☐	1 ☐	1 ☐
2 No, never witnessed	2 ☐	2 ☐	2 ☐	2 ☐
8 Unsure	8 ☐	8 ☐	8 ☐	8 ☐
60. As a result of the behavior(s) what types of symptoms and feelings have you experienced? *Check all that apply per column.*				
1 Anger	1☐	1☐	1☐	1☐
2 Depression	2☐	2☐	2☐	2☐
3 Sadness	3☐	3☐	3☐	3☐
4 Fatigue	4☐	4☐	4☐	4☐
5 Frustration	5☐	5☐	5☐	5☐
6 Fear/anxiety/stress	6☐	6☐	6☐	6☐
7 Shame/Low self-esteem/Low self-confidence	7☐	7☐	7☐	7☐
8 Stress-related physical symptoms (headaches, stomach problems, etc.)	8☐	8☐	8☐	8☐
9 Difficulty sleeping	9☐	9☐	9☐	9☐
10 Nightmares	10☐	10☐	10☐	10☐
11 Hallucinations	11☐	11☐	11☐	11☐
12 Flashbacks	12☐	12☐	12☐	12☐
13 Difficulty concentrating	13☐	13☐	13☐	13☐
14 Irritability	14☐	14☐	14☐	14☐
15 Intrusive thoughts about the event	15☐	15☐	15☐	15☐
16 Hyperarousal/Hypervigilance/Overly cautious	16☐	16☐	16☐	16☐
17 Avoidance of any reminders of the event	17☐	17☐	17☐	17☐
18 Resurfacing memories of previous trauma	18☐	18☐	18☐	18☐
19 Withdrawal from contact with people	19☐	19☐	19☐	19☐
20 Other, Specify	20☐	20☐	20☐	20☐
21 None	21☐	21☐	21☐	21☐
61. Did any of your symptoms (identified in Question 60) last for at least 1 month? *Check one response per column.*				
1 Yes	1☐	1☐	1☐	1☐
2 No	2☐	2☐	2☐	2☐
3 1 month has not passed since the event occurred	3☐	3☐	3☐	3☐
62. Did any of your symptoms (identified in Question 60) last for 6 months or more? *Check one response per column.*				
1 Yes	1☐	1☐	1☐	1☐
2 No	2☐	2☐	2☐	2☐
3 6 months have not passed since the event occurred	3☐	3☐	3☐	3☐
63. Are you currently experiencing any persistent problems or symptoms related to the behavior(s)? *Check one response per column.*				
1 Yes	1 ☐	1 ☐	1 ☐	1 ☐
2 No	2 ☐	2 ☐	2 ☐	2 ☐
If YES, please list problems or symptoms:				

	Threat	Sexual Harassment	Verbal Abuse	Bullying
64. How would you rate the severity of your symptom(s)/ problem(s) resulting from the behavior(s)? Consider any limitation of your abilities (physical/mental) and/or activities. *Check one response per column.*				
1 No limitations of abilities/activities	1 ☐	1 ☐	1 ☐	1 ☐
2 Some limitations of abilities/activities	2 ☐	2 ☐	2 ☐	2 ☐
3 Moderate limitations of abilities/activities	3 ☐	3 ☐	3 ☐	3 ☐
4 Severe limitations of abilities/activities	4 ☐	4 ☐	4 ☐	4 ☐
5 Disabling—inability to function	5 ☐	5 ☐	5 ☐	5 ☐
65. Were you treated by any of the following as a result of the behavior(s)? *Check all that apply per column.*				
1 No treatment	1 ☐	1 ☐	1 ☐	1 ☐
2 Physician (non-Psychiatrist)	2 ☐	2 ☐	2 ☐	2 ☐
3 Chiropractor	3 ☐	3 ☐	3 ☐	3 ☐
4 Nurse/Nurse Practitioner/Nurse Clinician/ Physician's Assistant	4 ☐	4 ☐	4 ☐	4 ☐
5 Psychiatrist/ Psychologist/Therapist	5 ☐	5 ☐	5 ☐	5 ☐
6 Homeopathic, Alternative, or Non-traditional medicine provider	6 ☐	6 ☐	6 ☐	6 ☐
7 Treated yourself	7 ☐	7 ☐	7 ☐	7 ☐
8 Other Specify	8 ☐ _____	8 ☐ _____	8 ☐ _____	8 ☐ _____
66. Were you admitted to a hospital as a result of the behavior(s)? *Check one response per column.*				
1 Yes	1 ☐	1 ☐	1 ☐	1 ☐
2 No	2 ☐	2 ☐	2 ☐	2 ☐
If YES, for how many days? (if none, fill in 0)	___days	___days	___days	___days
67. What changes in your work situation have occurred as a result of the behavior(s)? *Check all that apply per column.*				
1 Quit your job	1 ☐	1 ☐	1 ☐	1 ☐
2 Voluntary transfer to another location	2 ☐	2 ☐	2 ☐	2 ☐
3 Involuntary transfer to another location	3 ☐	3 ☐	3 ☐	3 ☐
4 Leave of absence	4 ☐	4 ☐	4 ☐	4 ☐
5 Restriction/modification of work activities	5 ☐	5 ☐	5 ☐	5 ☐
6 No changes	6 ☐	6 ☐	6 ☐	6 ☐
7 Other Specify	7 ☐ _____	7 ☐ _____	7 ☐ _____	7 ☐ _____
68. How long were regular work and/or non-work activities restricted as a result of the behavior(s)? *Check one response per column.*				
1 Less than 4 hours	1 ☐	1 ☐	1 ☐	1 ☐
2 4 hours to less than 1 day	2 ☐	2 ☐	2 ☐	2 ☐
3 1 day to less than 3 days	3 ☐	3 ☐	3 ☐	3 ☐
4 3 days to less than 7 days	4 ☐	4 ☐	4 ☐	4 ☐
5 7 days to less than 14 days	5 ☐	5 ☐	5 ☐	5 ☐
6 14 days to less than 1 month	6 ☐	6 ☐	6 ☐	6 ☐
7 1 month to less than 3 months	7 ☐	7 ☐	7 ☐	7 ☐
8 3 months or more	8 ☐	8 ☐	8 ☐	8 ☐
9 No restriction	9 ☐	9 ☐	9 ☐	9 ☐

	Threat	Sexual Harassment	Verbal Abuse	Bullying
69. Are your regular activities still restricted as a result of the behavior(s)? *Check one response per column.*				
1 Yes	1 ☐	1 ☐	1 ☐	1 ☐
2 No	2 ☐	2 ☐	2 ☐	2 ☐
70. As a result of the behavior(s), how many days were you absent from work? *Check one response per column.*				
1 Less than 4 hours	1 ☐	1 ☐	1 ☐	1 ☐
2 4 hours to less than 1 day	2 ☐	2 ☐	2 ☐	2 ☐
3 1 day to less than 3 days	3 ☐	3 ☐	3 ☐	3 ☐
4 3 days to less than 7 days	4 ☐	4 ☐	4 ☐	4 ☐
5 7 days to less than 14 days	5 ☐	5 ☐	5 ☐	5 ☐
6 14 days to less than 1 month	6 ☐	6 ☐	6 ☐	6 ☐
7 1 month to less than 3 months	7 ☐	7 ☐	7 ☐	7 ☐
8 3 months or more	8 ☐	8 ☐	8 ☐	8 ☐
9 No absence	9 ☐	9 ☐	9 ☐	9 ☐
71. In general, did you report the behavior(s) to administration? *Check all that apply per column.*				
1 Yes, orally	1 ☐	1 ☐	1 ☐	1 ☐
2 Yes, written	2 ☐	2 ☐	2 ☐	2 ☐
3 No	3 ☐	3 ☐	3 ☐	3 ☐
If YES, in your opinion, was administration adequately responsive to your report?				
4 Yes	4 ☐	4 ☐	4 ☐	4 ☐
5 No	5 ☐	5 ☐	5 ☐	5 ☐
6 Unsure	6 ☐	6 ☐	6 ☐	6 ☐
If NO, please check reason(s) that event(s) was(were) not reported.				
8 Reporting takes too much time	8 ☐	8 ☐	8 ☐	8 ☐
9 Unaware of reporting process	9 ☐	9 ☐	9 ☐	9 ☐
10 Did not expect report to change situation	10 ☐	10 ☐	10 ☐	10 ☐
11 Did not feel necessary to report	11 ☐	11 ☐	11 ☐	11 ☐
12 Other	12 ☐	12 ☐	12 ☐	12 ☐
Specify	_____	_____	_____	_____

Comments regarding reporting: _____

72. Please describe how the behavior(s) occurred, in general. What were you typically doing just prior to the event, and what was the person who threatened/sexually harassed/verbally abused/bullied you doing? What triggered the behavior(s)? *Please use extra paper if necessary.*

***Threat*:** _____

***Sexual Harassment*:** _____

***Verbal Abuse*:** _____

Bullying: _____

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Please continue to next page. →

** Please answer the following questions regardless of your personal experience with violence. **

73. In the 12 months prior to today's date, how often have you *witnessed* other licensed educators being:

a. **physically assaulted in your work environment?** *Check one.*

1 ☐ Never 2 ☐ 1-3 times 3 ☐ 4-10 times 4 ☐ More than 10 times

b. **threatened in your work environment?** *Check one.*

1 ☐ Never 2 ☐ 1-3 times 3 ☐ 4-10 times 4 ☐ More than 10 times

c. **sexually harassed in your work environment?** *Check one.*

1 ☐ Never 2 ☐ 1-4 times 3 ☐ 5-9 times 4 ☐ 10-19 times 5 ☐ 20 times or more

d. **verbally abused in your work environment?** *Check one.*

1 ☐ Never 2 ☐ 1-4 times 3 ☐ 5-9 times 4 ☐ 10-19 times 5 ☐ 20 times or more

e. **bullied in your work environment?** *Check one.*

1 ☐ Never 2 ☐ 1-4 times 3 ☐ 5-9 times 4 ☐ 10-19 times 5 ☐ 20 times or more

74. In the 12 months prior to today's date, how often were you *made aware of*, but not a witness to, other licensed educators being:

a. **physically assaulted in your work environment?** *Check one.*

1 ☐ Never 2 ☐ 1-3 times 3 ☐ 4-10 times 4 ☐ More than 10 times

b. **threatened in your work environment?** *Check one.*

1 ☐ Never 2 ☐ 1-3 times 3 ☐ 4-10 times 4 ☐ More than 10 times

c. **sexually harassed in your work environment?** *Check one.*

1 ☐ Never 2 ☐ 1-4 times 3 ☐ 5-9 times 4 ☐ 10-19 times 5 ☐ 20 times or more

d. **verbally abused in your work environment?** *Check one.*

1 ☐ Never 2 ☐ 1-4 times 3 ☐ 5-9 times 4 ☐ 10-19 times 5 ☐ 20 times or more

e. **bullied in your work environment?** *Check one.*

1 ☐ Never 2 ☐ 1-4 times 3 ☐ 5-9 times 4 ☐ 10-19 times 5 ☐ 20 times or more

75. Do you believe that work-related violence against licensed educators is a problem in your work environment? *Check one.*

1 ☐ Yes 2 ☐ No 8 ☐ Unsure

76. Do you believe that work-related violence against licensed educators can be prevented? *Check one.*

1 ☐ Yes 2 ☐ No 8 ☐ Unsure

Comments:_____

77. As of today's date, how many years have you worked as a licensed educator in any location? *Please indicate the number of years and/or months.*

_____ year(s) _____ month(s)

78. As of today's date, what is your highest level of education? *Check one.*

1 ☐ Associate Degree
2 ☐ Bachelor's Degree
3 ☐ Master's Degree
4 ☐ Education Specialist Degree
5 ☐ Doctorate Degree

79. What is your gender? *Check one.*

1 ☐ Male 2 ☐ Female

80. What is your date of birth? *Please write in date.*

(month/day/year) _____/_____/_____

81. Which of the following best describes your ethnic background? *Check one.*

1 ☐ Hispanic 2 ☐ Not Hispanic

82. Which of the following best describes your race? *Check all that apply.*

1 ☐ American Indian or Alaska Native
2 ☐ Asian
3 ☐ Black or African American
4 ☐ Native Hawaiian or Other Pacific Islander
5 ☐ White

83. What is your current marital status? *Check one.*

1 ☐ Married
2 ☐ Living as married
3 ☐ Living with a domestic partner
4 ☐ Never married
5 ☐ Separated
6 ☐ Divorced
7 ☐ Widowed

We would appreciate your providing a telephone number in case we need to clarify some information with you.

☎ (____) - _____ - _____ 1 ☐ work 2 ☐ home 3 ☐ cell
area code

******Thank you for taking the time to participate in this important study!******
Please return your questionnaire in the enclosed envelope.

MES (Phase I), Short Form

MINNESOTA EDUCATORS' SURVEY: PHASE 1

Confidentiality - The information that you provide will be kept strictly confidential and no information that could personally identify you or the facility in which you work(ed) will ever be made public. Only investigators at the University of Minnesota will ever have access to this information. **If there is any question you do not wish to answer, please mark an X on the question number, and continue to the next question.**

Drawing - We are providing savings bonds valued at $100 each to 250 randomly selected individuals. You are not required to complete the questionnaire to be eligible for this drawing; however, you do need to check yes or no below, and return this survey in the envelope provided.

1 ☐ **Yes**, include me in the savings bond drawing 2 ☐ **No**, do not include me in the savings bond drawing

---

1. Are you the person to whom this questionnaire was sent?

1 ☐ Yes 2 ☐ No → Please call toll free 1-877-70 TEACH (1-877-708-3224), so that we may clarify the situation.

2. What is today's date? ____/____/____
month day year

3. Did you work as a licensed educator, for any amount of time, in Minnesota, in the 12 months prior to today's date?

1 ☐ Yes 2 ☐ No → Thank you for taking the time to respond. Please stop here and return the questionnaire in the enclosed envelope.

The following definitions are provided to help you respond to the questions below. Please answer questions 4 and 5.

Work-related includes any activities associated with your job or events that occur in your work environment; work-related travel should be included.
Work-related violence is defined as the intentional use of physical force or emotional abuse, against an employee, that results in physical or emotional injury and consequences. This includes *physical assault, threat, sexual harassment, and verbal abuse.*

- **Physical assault** occurs when you are hit, slapped, kicked, pushed, choked, grabbed, sexually assaulted, or otherwise subjected to physical contact intended to injure or harm you.
- A **threat** occurs when someone uses words, gestures, or actions with the intent of intimidating, frightening, or causing harm to you (physically or otherwise). Threats may also include theft or property damage.
- **Sexual harassment** occurs when you experience any type of unwelcome sexual behavior (words or actions) that creates a hostile work environment.
- **Verbal abuse** occurs when someone yells or swears at you, calls you names, or uses other words intended to control or hurt you.
- **Bullying** is defined as repeated acts of intimidation or coercion.

4. Were you the target of a work-related *physical assault* at any time during the 12 months prior to today's date?

1 ☐ Yes 2 ☐ No

5. Did you experience any work-related *threats, sexual harassment, verbal abuse, or bullying* according to the above definitions, within the 12 months prior to today's date?

1 ☐ Yes 2 ☐ No

******Thank you for taking the time to participate in this important study!******
Please return this survey in the enclosed envelope.

APPENDIX B

Case Control (Phase II) Study Cover Letter, Information Sheet, and Questionnaires

MES (Phase II) Cover Letter

PHASE 2 (CASE-CONTROL) INITIAL COVER LETTER

Date

Name, Identification number
Address
Address

Dear (teacher name):

We are following up on the questionnaire you completed regarding work-related violence against Minnesota educators. Your participation in the first phase of the Minnesota Educators' Study is greatly appreciated.

This second phase of the study involves educators who reported work-related violence as well as a random sample of those who did not report such incidents during a twelve-month period. The enclosed questionnaire will take about 20 minutes to complete. In order to obtain optimal information, we ask everyone who receives this questionnaire to participate. By comparing responses of those who experienced a work-related violence event to those who did not, we can identify risk and protective factors that will be important to the development of prevention efforts to improve safety in the schools.

We have enclosed an information sheet on the back of this letter regarding the purpose and methods of this study, and about the drawing of 250 randomly selected individuals for the $100 savings bonds. The opportunity for receiving a bond will be at least 1 in 75 individuals; however, this will vary based on the number of respondents. Individuals who are awarded the bonds will be notified at the completion of the data collection for both phases of the study (approximately May 2006). By returning your questionnaire you will be eligible for the drawing, whether or not you participate in the study.

Continued participation in this study is voluntary, and choosing not to participate will not affect your future relations with any of the persons or institutions involved in this effort. If you have any questions, please feel free to contact us at 612-626-4801 or toll-free at 1-877-70-TEACH (1-877-708-3224). If you have any questions or concerns regarding this study and would like to talk to someone other than the researchers, you are encouraged to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650. We look forward to your potential contribution to this important study and appreciate your completing and returning the questionnaire by **<<date>>**. A postage-paid, return envelope is included for your convenience.

Sincerely,

Susan Goodwin Gerberich, Ph.D.
Principal Investigator
Regional Injury Prevention Research Center and
Center for Violence Prevention and Control
Division of Environmental Health Sciences
University of Minnesota

Nancy Nachreiner, Ph.D., R.N.
Project Director

Enclosures

MESID: SID:

Please see other side.

MES (Phase II) Information Sheet

Minnesota Educators' Study

Purpose of the Study

The purpose of this study is to assess the magnitude and consequences of violence against licensed Minnesota educators and to identify risk factors for this problem. It is our hope that this study will improve our understanding of work-related violence and will eventually improve the overall safety and work conditions in Minnesota schools. Violence includes both physical assault and non-physical violence (threats, sexual harassment, verbal abuse, and bullying). This study is being conducted by the Regional Injury Prevention Research Center and the Center for Violence Prevention and Control, in the Division of Environmental Health Sciences, School of Public Health, University of Minnesota.

Study Procedures:

In addition to the enclosed form to determine which educators have worked in Minnesota during the previous twelve months, this study involves two questionnaires. The first questionnaire collects information about work-related violence events (both physical and non-physical) that you may have experienced during the past twelve months, and may take approximately 20 minutes of your time. Some educators who respond to the first questionnaire may be asked to complete a second questionnaire, which will be sent in the next few months. The second questionnaire, which will take about 20 minutes, collects information that will be compared between licensed educators who *reported work-related violence events* to a random sample of licensed educators who *did not report such incidents* during the past twelve months. *In order to obtain optimal information, we ask everyone who receives a questionnaire to participate, whether or not they experienced either physical or non-physical violence.* Responses from all educators will enable us to identify both risk and protective factors that can be used to develop relevant prevention efforts.

Savings Bonds Drawing:

A minimum of 250 randomly selected individuals will receive $100 savings bonds. The opportunity for receiving a bond will be *at least* 1 in 75 individuals; however, this will vary based on the number of respondents. By indicating you would like to be included in the drawing, you will be eligible whether or not you participate in the study. Individuals who are awarded the bonds will be notified at the completion of the data collection for both phases of the study (approximately May 2006). Although we cannot supply the names of those chosen to receive bonds because of confidentiality issues, we will post a notice on our website (http://www1.umn.edu/cvpc/research.html) when the individuals are randomly selected to receive the savings bonds. After that notice is posted, you may call the numbers identified below and request further verification of the disbursement of the bonds, if you wish.

Voluntary Participation:

Participation in this study is voluntary. Choosing not to participate will not affect your future relations with any of the persons or institutions involved in this effort. We recognize that some questions included in these questionnaires may evoke painful memories; however, you are free to skip questions that you choose not to answer. We are required to maintain confidentiality regarding your participation; any information will be reported only in summary form and no individual or institution will ever be identified.

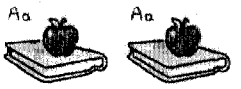
Questions:

If you have any questions, please contact Dr. Susan Gerberich or Dr. Nancy Nachreiner at 612-626-4801 or toll free at 1-877-70-TEACH (1-877-708-3224). If you have any questions or concerns regarding this study and would like to talk to someone other than the researchers, you are encouraged to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650.

We look forward to your involvement in this important study!

Please see other side. ⟶

Minnesota Educators' Study: Phase II



Center for Violence Prevention and Control
Division of Environmental Health Sciences
School of Public Health, University of Minnesota
MMC 807, 420 Delaware St. SE
Minneapolis, MN 55455

Telephone: 612-626-4801; toll free: 1-877-70-TEACH (1-877-708-3224)

Confidentiality - The information that you provide will be kept strictly confidential and no information that could personally identify you or the facility in which you work(ed) will ever be made public. Only investigators at the University of Minnesota will ever have access to this information. **If there is any question you do not wish to answer, please mark an X on the question number and continue to the next question.**

Drawing – Remember! We are providing savings bonds valued at $100 each to a minimum of 250 randomly selected individuals. You are not required to complete the questionnaire to be eligible for this drawing; however, if you have not already indicated your interest, you do need to check yes or no below, and return this questionnaire in the envelope provided.

1 ☐ **Yes**, include me in the savings bond drawing 2 ☐ **No**, do not include me in the sa ngs bond drawing

Thank you for taking the time to participate in this important study!

123456-7

123456

All of the following questions pertain to a specific month (unless otherwise indicated within the question), and to the school in which you worked the most time. Please answer according to the indicated time period. Thank you!

This first section asks general questions about the school in which you worked the most time and about the students in that school.

1. *During previous month*, in what type of school did you work the most time? *Check only one.*

1 ☐ Public
2 ☐ Public Alternative
3 ☐ Public Charter
4 ☐ Public Magnet
5 ☐ Private (Parochial)
6 ☐ Private (Non-Parochial)

2. What was the location of this school? *Check only one.*

1 ☐ Rural
2 ☐ Urban
3 ☐ Suburban

3. How many *students*, on average, were enrolled in this school? *Check only one.*

1 ☐ Less than 50 students
2 ☐ 50 to 200 students
3 ☐ 201 to 500 students
4 ☐ 501 to 1000 students
5 ☐ More than 1000 students

4. What was the student/teacher ratio, in general, for this school? *Please identify numbers.*

_____ Average # students per teacher

5. In general, do you feel there was overcrowding in the classroom(s) or other setting(s) in which instruction occurred in this school? *Check only one.*

1 ☐ Yes
2 ☐ No
8 ☐ Unsure

6. What grade level(s) was(were) taught at this school *during previous month*? *Check all that apply.*

1 ☐ Kindergarten
2 ☐ First Grade
3 ☐ Second Grade
4 ☐ Third Grade
5 ☐ Fourth Grade
6 ☐ Fifth Grade
7 ☐ Sixth Grade
8 ☐ Seventh Grade
9 ☐ Eighth Grade
10 ☐ Ninth Grade
11 ☐ Tenth Grade
12 ☐ Eleventh Grade
13 ☐ Twelfth Grade
14 ☐ Class not in session

7. What was your job classification in this school *during previous month*? *Check only one.*

1 ☐ Full-time contract
2 ☐ Part-time contract
3 ☐ Long-call substitute
4 ☐ Building substitute (assigned daily to one building to cover classes as needed)
5 ☐ All other substitutes (day to day, short call, etc.)

8. What was your primary professional activity in this school *during previous month*? *Check only one.*

1 ☐ Classroom teacher
2 ☐ Librarian/Media Specialist
3 ☐ School Nurse
4 ☐ Administrator
5 ☐ Superintendent
6 ☐ Dean of Students
7 ☐ Teacher Assistant/Aide
8 ☐ Advisor to Extra-Curricular Activities
9 ☐ Guidance Counselor
10 ☐ Coach
11 ☐ School Psychologist
12 ☐ School Social Worker
13 ☐ Special Education
14 ☐ Department Chair/Instructional Leader
15 ☐ Other, specify _____

9. Please refer to the enclosed calendar and record your best estimate of the number of days worked, and the average number of hours per day you worked in this school *during previous month*.

___ Days in *previous month* ___ Hours per day

10. What was the total length of time that you worked in this school, *prior to target month*?

_____ Year(s) _____ Month(s)

11. *During previous month*, did you teach students in a classroom or other setting in which instruction occurred in this school? *Check only one.*

1 ☐ Yes
2 ☐ No → **Skip to Question 16.**

12. What grade level(s) did you teach in this school *during previous month*? *Check all that apply.*

1 ☐ Kindergarten
2 ☐ First Grade
3 ☐ Second Grade
4 ☐ Third Grade
5 ☐ Fourth Grade
6 ☐ Fifth Grade
7 ☐ Sixth Grade
8 ☐ Seventh Grade
9 ☐ Eighth Grade
10 ☐ Ninth Grade
11 ☐ Tenth Grade
12 ☐ Eleventh Grade
13 ☐ Twelfth Grade

13. *During previous month*, what topic(s) did you teach in this school? *Check all that apply.*

1 ☐ Elementary Education
2 ☐ English
3 ☐ Language Arts
4 ☐ Reading
5 ☐ Fine Arts
6 ☐ Mathematics
7 ☐ Science
8 ☐ Social Studies
9 ☐ World Language (non-English)
10 ☐ Family Consumer Science
11 ☐ Business Education
12 ☐ Computer Technology
13 ☐ Industrial Technology/Applied Arts
14 ☐ English Language Learners/ESL
15 ☐ Special Education
16 ☐ Speech Pathology
17 ☐ Physical Education
18 ☐ Driver's Education
19 ☐ Other, specify _____

Please continue to the next page. →

14. ***During previous month***, **were there typically any other *personnel* (licensed educators or non-educators), besides yourself, in your classroom (or other setting in which instruction occurred)?** *Check only one.*

1 ☐ Yes
2 ☐ No → **Skip to Question 15.**

a. How many of these *personnel*, on average, were in your classroom (or other setting in which instruction occurred)? *Please identify number.*

_____ Personnel

b. Of these *personnel*, in general, which age group was most common? *Check only one.*

1 ☐ 21 years to 29 years
2 ☐ 30 years to 49 years
3 ☐ 50 years or older
4 ☐ Mixed age groups
8 ☐ Unsure

c. Of these *personnel*, in general, were they primarily men or women? *Check only one.*

1 ☐ Men
2 ☐ Women
3 ☐ Appeared equal
8 ☐ Unsure

d. Of these *personnel*, in general, were most of the same race/ethnicity as you? *Check only one.*

1 ☐ Yes
2 ☐ No
8 ☐ Unsure

15. Please answer the following questions about the students in your classroom (or other setting in which instruction occurred) *during previous month*.

a. *During previous month*, what was your typical class size or the number of students with whom you interacted (per class period)? *Check only one.*

1 ☐ Less than 10
2 ☐ 10 to less than 25
3 ☐ 25 to less than 45
4 ☐ 45 to less than 55
5 ☐ 55 or more

b. *During previous month*, how many students, on average per day, were assigned to you? ***For example, if you had 5 class periods with 20 students, you would write "100."*** *Please identify number.*

_____ Students per day

c. Of these *students*, in general, which age group was most common? *Check only one.*

1 ☐ Less than age 5
2 ☐ 5 years to less than 10
3 ☐ 10 years to less than 13
4 ☐ 13 years to less than 16
5 ☐ 16 years to less than 18
6 ☐ 18 years or older
7 ☐ Mixed age groups
8 ☐ Unsure

d. Of these *students*, in general, were they primarily male or female? *Check only one.*

1 ☐ Male
2 ☐ Female
3 ☐ Appeared equal
8 ☐ Unsure

e. Of these *students*, in general, were most of the same race/ethnicity as you? *Check only one.*

1 ☐ Yes
2 ☐ No
8 ☐ Unsure

f. *For previous month*, please estimate the percentage of students, in each of the following mental status categories that were assigned to you on average per day.

_____ % Impaired because of injury or illness (physical impairment, hearing impairment, etc.)
_____ % Impaired because of disability (learning, emotional, autism, etc.) or developmental delay
_____ % Impaired because of alcohol, aerosols, or drugs (prescribed or non-prescribed)
_____ % Not impaired
_____ % Unsure

100 % = Total

g. In general *during previous month*, how would you rate the parental/family/guardian involvement for the students with whom you interacted? *Check only one.*

1 ☐ Outstanding
2 ☐ Very good
3 ☐ Good
4 ☐ Fair
5 ☐ Poor
8 ☐ Unsure

16. *During previous month*, how many hours per day of student contact did you have? Hours of student contact are defined as the total hours that you spent interacting with students, including in-person, telephone and email contact. **Do not include** hours that you spent interacting with coworkers or preparing for class. If you had no student contact, please write 0.

_____ Average hours per day

Please continue to the next page. →

This section asks about the school resources available in the work environment of the school in which you worked most often.

17. In general, *during previous month*, do you believe that the school where you worked the most time had sufficient economic resources to provide students with an environment in which their educational needs were being met? *Check only one.*

1 ☐ Yes
2 ☐ No
8 ☐ Unsure

18. In general, *during previous month*, do you believe that your working environment was sufficiently equipped with the following educational resources for your students? *Please check one for each of the following types of school resources.*

a. Up-to-date technology (e.g., computers, audio/visual equipment, etc.)?
1 ☐ Yes
2 ☐ No
8 ☐ Unsure

b. Up-to-date books?
1 ☐ Yes
2 ☐ No
8 ☐ Unsure

c. Human resources for students (e.g., school nurses, social workers, educational assistants, etc.)?
1 ☐ Yes
2 ☐ No
8 ☐ Unsure

d. Other necessary teaching tools and supplies (e.g., blackboards and chalk, white boards and markers, etc.)?
1 ☐ Yes
2 ☐ No
8 ☐ Unsure

e. Sports equipment and facilities?
1 ☐ Yes
2 ☐ No
8 ☐ Unsure

f. Musical equipment and facilities?
1 ☐ Yes
2 ☐ No
8 ☐ Unsure

19. In general, *during previous month*, do you believe that the school where you worked the most time had sufficient economic resources to provide you with the necessary tools and supplies to teach your students effectively? *Check only one.*

1 ☐ Yes
2 ☐ No
8 ☐ Unsure

20. During the 12 months *prior to target month*, were there times when you made personal (i.e., out-of-pocket) purchases of educational resources for your students because they were not provided by your school? *Check only one.*

1 ☐ Yes → **If Yes, on average how much per month did you spend on these out-of-pocket educational resources: $_____ Average/month**
2 ☐ No
8 ☐ Unsure

21. During the 12 months *prior to target month*, were you aware of any school programs or activities that were terminated due to a lack of economic resources at your school? *Check only one.*

1 ☐ Yes
2 ☐ No
8 ☐ Unsure

22. *During previous month*, approximately what percentage of students at your school do you believe were receiving free or reduced price lunches? *Check only one.*

1 ☐ Less than 25 percent
2 ☐ Between 25 and 50 percent
3 ☐ More than 50 percent but less than 75
4 ☐ More than 75 percent
8 ☐ Not aware

This section asks about your perceptions of the work environment of the school in which you worked most often.

23. Several possible characteristics of a work environment are identified below. *During previous month*, how *frequently* did you feel each characteristic occurred in the work environment where you worked most often? If any of them did not occur, circle never. *Circle one number for each item (a-n).*

		Always	Frequently	Sometimes	Infrequently	Never	Unsure	Not applicable
a.	Inadequate administrative support	1	2	3	4	5	8	6
b.	Inadequate school resources	1	2	3	4	5	8	6
c.	Inadequate time for lesson preparation	1	2	3	4	5	8	6
d.	Fast-paced school day	1	2	3	4	5	8	6
e.	Large class size	1	2	3	4	5	8	6
f.	Heavy workload	1	2	3	4	5	8	6
g.	Personnel/coworker conflict	1	2	3	4	5	8	6
h.	Inadequate building safety	1	2	3	4	5	8	6
i.	Inadequate coworker support	1	2	3	4	5	8	6

Please continue to the next page. →

23. (Continued). *Circle one number for each item (a-n).*

		Always	Frequently	Sometimes	Infrequently	Never	Unsure	Not applicable
j.	Teaching unmotivated students	1	2	3	4	5	8	6
k.	Student behavior management	1	2	3	4	5	8	6
l.	Formal discipline of students	1	2	3	4	5	8	6
m.	Performance evaluation of my work	1	2	3	4	5	8	6
n.	Witnessing or being made aware of any violent events (e.g., physical assault, verbal abuse, sexual harassment, threats)	1	2	3	4	5	8	6

24. ***During previous month*, how would you estimate *your level of stress* related to each characteristic in your work environment where you worked most frequently? If any of them did not apply to you, circle not applicable.** *Circle one number for each item (a-n).*

		Extremely stressful	Very stressful	Moderately stressful	Mildly stressful	Not stressful	Unsure	Not applicable
a.	Inadequate administrative support	1	2	3	4	5	8	6
b.	Inadequate school resources	1	2	3	4	5	8	6
c.	Inadequate time for lesson preparation	1	2	3	4	5	8	6
d.	Fast-paced school day	1	2	3	4	5	8	6
e.	Large class size	1	2	3	4	5	8	6
f.	Heavy workload	1	2	3	4	5	8	6
g.	Personnel/coworker conflict	1	2	3	4	5	8	6
h.	Inadequate building safety	1	2	3	4	5	8	6
i.	Inadequate coworker support	1	2	3	4	5	8	6
j.	Teaching unmotivated students	1	2	3	4	5	8	6
k.	Student behavior management	1	2	3	4	5	8	6
l.	Formal discipline of students	1	2	3	4	5	8	6
m.	Performance evaluation of my work	1	2	3	4	5	8	6
n.	Witnessing or being made aware of any violent events (e.g., physical assault, verbal abuse, sexual harassment, threats)	1	2	3	4	5	8	6

25. If you answered mildly to extremely stressful on any of the characteristics in question #24, please indicate which of the following actions you took to deal with those characteristics. *Circle one number for each following item (a-j).*

		Yes	No	Unsure
a.	Took action(s) to deal with the issue(s) (other than talking to an authority)	1	2	8
b.	Relaxed after work	1	2	8
c.	Discussed the issue(s) with a coworker	1	2	8
d.	Minimized the issue(s)	1	2	8
e.	Kept issue(s) in perspective	1	2	8
f.	Devoted more time to specific tasks	1	2	8
g.	Kept feelings under control	1	2	8
h.	Set priorities at work	1	2	8
i.	Changed plan(s) of action	1	2	8
j.	Talked to someone who could do something about the issue(s)	1	2	8

26. Please describe how frequently, *during previous month*, you experienced these feelings about your work environment. *Circle one number for each item (a-n)*

		Always	Frequently	Sometimes	Infrequently	Never	Unsure
a.	I felt unfocused in my thinking.	1	2	3	4	5	8
b.	I felt unable to be sensitive to the needs of my coworkers.	1	2	3	4	5	8
c.	I felt tired.	1	2	3	4	5	8
d.	I was not capable of being sympathetic to coworkers and students.	1	2	3	4	5	8
e.	I was not capable of investing emotionally in my coworkers and students.	1	2	3	4	5	8
f.	I felt "burned out."	1	2	3	4	5	8
g.	I had no energy for going to work in the morning.	1	2	3	4	5	8
h.	I felt fed up.	1	2	3	4	5	8
i.	I felt physically drained.	1	2	3	4	5	8
j.	My thinking process was slow.	1	2	3	4	5	8
k.	I had difficulty concentrating.	1	2	3	4	5	8
l.	I felt I was not thinking clearly.	1	2	3	4	5	8
m.	I had difficulty thinking about complex things.	1	2	3	4	5	8
n.	I felt like my "batteries" were "dead".	1	2	3	4	5	8

27. ***During previous month*, how would you estimate *your level of stress* related to your activities outside of work?** *Check only one.*

1 ☐ Extremely stressful
2 ☐ Very stressful
3 ☐ Moderately stressful
4 ☐ Mildly stressful
5 ☐ Not stressful
8 ☐ Unsure

Please continue to the next page. →

This section asks about the physical work environment of the school in which you worked most often.

28. ***During previous month,*** **were any of the following assault deterrents available in your work environment?**

a. Video monitor? *Check all that apply.*
- 1 ☐ Yes, at school entrances
- 2 ☐ Yes, in classrooms
- 3 ☐ Yes, in hallways
- 4 ☐ No
- 8 ☐ Unsure if available

b. Metal detection device? *Check only one.*
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure if available

c. Security alarm/panic button/emergency call-in system? *Check only one.*
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure if available

d. Controlled access to work area or classroom? *Check only one.*
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure if available

e. Personal portable alarm (e.g., whistle, screamer, etc.)? *Check all that apply.*
- 1 ☐ Yes, I provided it
- 2 ☐ Yes, my employer provided it
- 3 ☐ Yes, another institution/person provided it
- 4 ☐ No, not available
- 8 ☐ Unsure if available

f. Cellular telephone? *Check all that apply.*
- 1 ☐ Yes, I provided it
- 2 ☐ Yes, my employer provided it
- 3 ☐ Yes, another institution/person provided it
- 4 ☐ No, not available
- 8 ☐ Unsure if available

g. Two-way radio/walkie-talkie? *Check only one.*
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure if available

h. Intercom? *Check only one.*
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure

i. Classroom telephone? *Check only one.*
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure if available

j. Required visible identification badges? *Check all that apply.*
- 1 ☐ Yes, Staff/Educator ID badges
- 2 ☐ Yes, Student ID badges
- 3 ☐ No, not available
- 8 ☐ Unsure if available

k. On-site security personnel (non-educator)? *Check all that apply.*
- 1 ☐ Yes, my employer provided it
- 2 ☐ Yes, another institution/person provided it
- 3 ☐ No, not available
- 8 ☐ Unsure if available

l. Contracted police presence (a permanent position, not an occasional call-in)? *Check only one.*
- 1 ☐ Yes
- 2 ☐ No, not available
- 8 ☐ Unsure if available

m. School Resource Officer (designated school personnel with whom students could discuss violent acts)? *Check only one.*
- 1 ☐ Yes
- 2 ☐ No, not available
- 8 ☐ Unsure if available

n. Escort/bodyguard? *Check all that apply.*
- 1 ☐ Yes, I provided it
- 2 ☐ Yes, my employer provided it
- 3 ☐ Yes, another institution/person provided it
- 4 ☐ No, not available
- 8 ☐ Unsure if available

o. Routine locker searches? *Check only one.*
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure

p. School uniforms/dress code policy? *Check only one.*
- 1 ☐ Yes, school uniforms were required.
- 2 ☐ Yes, a formal dress code existed (specified acceptable types of clothing that must be worn).
- 3 ☐ Yes, an informal dress code existed (specified types of clothing/dress to avoid).
- 4 ☐ No policies on dress code existed.
- 8 ☐ Unsure

q. Administrative surveillance of computer usage by staff and students? *Check only one.*
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure if available

r. Other, specify: _____

Please continue to the next page. →

29. ***During previous month***, **what effect did the assault deterrents in your work environment have on your perceived level of safety?** *Check only one.*

1 ☐ Increased my feeling of safety
2 ☐ Decreased my feeling of safety
3 ☐ Had no effect on my feeling of safety
4 ☐ There were no assault deterrents in my work environment.
8 ☐ Unsure

30. ***During previous month***, **did you usually carry any of the following for protection in your work environment?** *Check yes or no for each of the following (a-g).*

a. Mace/Pepper Spray?
1 ☐ Yes
2 ☐ No

b. Alarm device (whistle, screamer, etc.)?
1 ☐ Yes
2 ☐ No

c. Cellular telephone?
1 ☐ Yes
2 ☐ No

d. Firearm?
1 ☐ Yes
2 ☐ No

e. Sharp Instrument?
1 ☐ Yes
2 ☐ No

f. Blunt Instrument?
1 ☐ Yes
2 ☐ No

g. Other
1 ☐ Yes **specify:**_____
2 ☐ No

31. ***During previous month***, **what was the typical level of lighting in your work environment?** *Check only one.*

1 ☐ As bright as daylight
2 ☐ Soft light, but I could still see a person's face clearly
3 ☐ Dim light; I could not see a person's face clearly, but I could see a figure
4 ☐ I could not see anything
8 ☐ Unsure

32. ***During previous month***, **were exits in your work environment easily accessible?** *Check only one.*

1 ☐ Yes
2 ☐ No
8 ☐ Unsure

33. ***During previous month***, **were there any physical barriers that prevented you from seeing others in your work environment?** *Check only one.*

1 ☐ Yes
2 ☐ No
8 ☐ Unsure

34. **During the 12 months *prior to target month* please indicate your satisfaction with your typical work environment.** *Circle one number for each item (a-l).*

		Very Dissatisfied	Somewhat Dissatisfied	Satisfied	Somewhat Satisfied	Very Satisfied
a.	Cleanliness of school	1	2	3	4	5
b.	Ventilation/air quality	1	2	3	4	5
c.	Temperature	1	2	3	4	5
d.	Lighting	1	2	3	4	5
e.	Size of classrooms	1	2	3	4	5
f.	Width of most hallways	1	2	3	4	5
g.	Spaciousness of main entrance	1	2	3	4	5
h.	Color scheme/artwork	1	2	3	4	5
i.	Displays of students' work	1	2	3	4	5
j.	Building safety/security	1	2	3	4	5
k.	Inclusive environment	1	2	3	4	5
l.	School learning climate	1	2	3	4	5

This section asks about the administration, co-workers and expectations in the work environment of the school in which you worked most often.

35. ***During previous month***, **how much would you have agreed or disagreed with the following statements relevant to the school in which you worked the most time?** *Check only one answer for each of the following (a-f).*

a. Administration expected that assault was a possible consequence of the job.
1 ☐ Strongly agree
2 ☐ Agree
3 ☐ Disagree
4 ☐ Strongly disagree
8 ☐ Unsure

b. Administration took corrective/preventive measures against assault in the workplace.
1 ☐ Strongly agree
2 ☐ Agree
3 ☐ Disagree
4 ☐ Strongly disagree
8 ☐ Unsure

c. Coworkers expected that assault was a possible consequence of the job.
1 ☐ Strongly agree
2 ☐ Agree
3 ☐ Disagree
4 ☐ Strongly disagree
8 ☐ Unsure

d. Coworkers took corrective/preventive measures against assault in the workplace.
1 ☐ Strongly agree
2 ☐ Agree
3 ☐ Disagree
4 ☐ Strongly disagree
8 ☐ Unsure

Please continue to the next page. →

e. **I expected that assault was a possible consequence of the job.**
- 1 ☐ Strongly agree
- 2 ☐ Agree
- 3 ☐ Disagree
- 4 ☐ Strongly disagree
- 8 ☐ Unsure

f. **I took corrective/preventive measures against assault in the workplace.**
- 1 ☐ Strongly agree
- 2 ☐ Agree
- 3 ☐ Disagree
- 4 ☐ Strongly disagree
- 8 ☐ Unsure

This section asks about policies in the work environment of the school in which you worked most often.

Please consider the following definitions when completing the next set of questions.
Work-related includes any activities associated with your job or events that occur in your work environment; work-related travel should be included.
Work-related violence is defined as the intentional use of physical force or emotional abuse, against an employee, that results in physical or emotional injury and consequences. This includes *physical assault, threat, sexual harassment, verbal abuse and bullying*.
Physical assault occurs when you are hit, slapped, kicked, pushed, choked, grabbed, sexually assaulted, or otherwise subjected to physical contact intended to injure or harm you.
A **threat** occurs when someone uses words, gestures, or actions with the intent of causing harm to you (physically or otherwise). Threats may also include theft or property damage.
Sexual harassment occurs when you experience any type of unwelcome sexual behavior (words or actions) that creates a hostile work environment.
Verbal abuse occurs when someone yells or swears at you, calls you names, or uses other words intended to control or hurt you.
Bullying is defined as repeated acts of intimidation or coercion.

36. ***Prior to target month***, **did your school have a *written* policy on violence that addressed. . .**
Check only one answer for each of the following (a-g).

a. **requirements for violence prevention training of employees?**
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure

b. **types of violent behaviors against employees (physical assault, threat, sexual harassment, or verbal abuse) that were prohibited?**
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure

c. **types of violent behaviors against students (physical assault, threat, sexual harassment, or verbal abuse) that were prohibited?**
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure

d. **how to report if someone sexually harassed, threatened, or verbally abused you?**
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure

e. **how to report if someone physically assaulted you?**
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure

f. **assurance that reporting of violent incidents would be kept confidential?**
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure

g. **consequences for those who used violence?**
- 1 ☐ Yes, consequences for students
- 2 ☐ Yes, consequences for employees
- 3 ☐ Yes, consequences for students and employees
- 4 ☐ No
- 8 ☐ Unsure

37. ***Prior to target month***, **to what degree was this (were these) written policy(ies) enforced?**
Check only one.
- 1 ☐ Always enforced
- 2 ☐ Almost always enforced
- 3 ☐ Sometimes enforced
- 4 ☐ Almost never enforced
- 5 ☐ Never enforced
- 6 ☐ No policy on any of the above
- 8 ☐ Unsure

38. ***Prior to target month***, **did your school have a "zero tolerance" policy for violence?** A zero tolerance policy for violence is one that does not tolerate violence at any level and has strict guidelines for the consequences of violating the policy. *Check only one.*
- 1 ☐ Yes
- 2 ☐ No **Skip to Question 39.**
- 8 ☐ Unsure **Skip to Question 39.**

Please continue to the next page. →

a. ***Prior to target month***, **to what degree was this zero tolerance policy enforced?** *Check only one.*

1 ☐ Always enforced **Skip to item c, below.**
2 ☐ Almost always enforced
3 ☐ Sometimes enforced
4 ☐ Almost never enforced
5 ☐ Never enforced
8 ☐ Unsure

b. **If not "always enforced," why not?** *Check all that apply.*

1 ☐ No actions result from enforcement
2 ☐ Causes problems with students
3 ☐ Causes problems with parents
4 ☐ Causes problems with staff
5 ☐ Not a priority for administration
6 ☐ Other, specify_____
8 ☐ Unsure

c. **What consequence(s) was/were the most common for students who violated the zero tolerance policy?** *Check up to two most common consequences.*

1 ☐ No consequences
2 ☐ Written up with reprimand
3 ☐ In-school suspension
4 ☐ Out-of-school suspension
5 ☐ Transfer to alternative school
6 ☐ Saturday detention
7 ☐ Expulsion recommended for less than one year
8 ☐ Expulsion recommended for one year or more
9 ☐ Other, specify _____

d. **Are you aware of any instances in your work environment, *prior to target month*, of retaliation or backlash directed toward an educator following the enforcement of a zero tolerance policy?** *Check only one.*

1 ☐ Yes
2 ☐ No
3 ☐ Unsure

→ **If yes, by whom?** *Check all that apply.*

4 ☐ Students
5 ☐ Parents/Guardians
6 ☐ Coworkers
8 ☐ Unsure

e. **Do you believe this zero tolerance policy adequately protected you?** *Check only one.*

1 ☐ Yes
2 ☐ No
8 ☐ Unsure

39. **Do you believe a zero tolerance policy is necessary to reduce violent events in your work environment?** *Check only one.*

1 ☐ Yes
2 ☐ No
8 ☐ Unsure

40. ***Prior to target month***, **did your school have a visitor policy? (May include a visitor sign-in sheet and/or a visitor identification badge.)** *Check only one.*

1 ☐ Yes
2 ☐ No **Skip to Question 42.**
8 ☐ Unsure **Skip to Question 42.**
3 ☐ Not Applicable **Skip to Question 42.**

41. ***Prior to target month***, **to what degree was the visitor policy enforced?** *Check only one.*

1 ☐ Always enforced
2 ☐ Almost always enforced
3 ☐ Sometimes enforced
4 ☐ Almost never enforced
5 ☐ Never enforced
8 ☐ Unsure

This section asks about training in the work environment of the school in which you worked most often.

42. ***Prior to target month***, **were you ever trained about...** *Check all that apply for each of the following (a-k).*

a. **work-related violence prevention policy?**

1 ☐ Yes, by my current school/employer
2 ☐ Yes, by my previous school/employer
3 ☐ Yes, by my college
4 ☐ Yes, by another institution/agency
5 ☐ No
8 ☐ Unsure

b. **operating safety alarms or other safety devices?**

1 ☐ Yes, by my current school/employer
2 ☐ Yes, by my previous school/employer
3 ☐ Yes, by my college
4 ☐ Yes, by another institution/agency
5 ☐ No
8 ☐ Unsure

c. **reporting work-related harassment?**

1 ☐ Yes, by my current school/employer
2 ☐ Yes, by my previous school/employer
3 ☐ Yes, by my college
4 ☐ Yes, by another institution/agency
5 ☐ No
8 ☐ Unsure

d. **reporting work-related physical assault?**

1 ☐ Yes, by my current school/employer
2 ☐ Yes, by my previous school/employer
3 ☐ Yes, by my college
4 ☐ Yes, by another institution/agency
5 ☐ No
8 ☐ Unsure

e. **managing threats or assaults?**

1 ☐ Yes, by my current school/employer
2 ☐ Yes, by my previous school/employer
3 ☐ Yes, by my college
4 ☐ Yes, by another institution/agency
5 ☐ No
8 ☐ Unsure

Please continue to the next page. →

f. recognizing risk factors for violence?
- 1 ☐ Yes, by my current school/employer
- 2 ☐ Yes, by my previous school/employer
- 3 ☐ Yes, by my college
- 4 ☐ Yes, by another institution/agency
- 5 ☐ No
- 8 ☐ Unsure

g. using appropriate restraining techniques?
- 1 ☐ Yes, by my current school/employer
- 2 ☐ Yes, by my previous school/employer
- 3 ☐ Yes, by my college
- 4 ☐ Yes, by another institution/agency
- 5 ☐ No
- 8 ☐ Unsure

h. using self defense?
- 1 ☐ Yes, by my current school/employer
- 2 ☐ Yes, by my previous school/employer
- 3 ☐ Yes, by my college
- 4 ☐ Yes, by another institution/agency
- 5 ☐ No
- 8 ☐ Unsure

i. preventing bullying?
- 1 ☐ Yes, by my current school/employer
- 2 ☐ Yes, by my previous school/employer
- 3 ☐ Yes, by my college
- 4 ☐ Yes, by another institution/agency
- 5 ☐ No
- 8 ☐ Unsure

j. resolving conflicts?
- 1 ☐ Yes, by my current school/employer
- 2 ☐ Yes, by my previous school/employer
- 3 ☐ Yes, by my college
- 4 ☐ Yes, by another institution/agency
- 5 ☐ No
- 8 ☐ Unsure

k. other violence prevention methods?
- 1 ☐ Yes **Please specify:** _____
- 2 ☐ No

43. In the 12 months *prior to target month*, how often did you have training related to violence prevention (violence prevention includes items such as those listed in the previous question)? *Check only one.*
- 1 ☐ Never
- 2 ☐ 1–2 times
- 3 ☐ 3-5 times
- 4 ☐ 6-8 times
- 5 ☐ 9-11 times
- 6 ☐ 12 or more times

44. In the 12 months *prior to target month*, approximately how many total hours of violence prevention training did you have? *Check only one.*
- 1 ☐ None
- 2 ☐ Less than 5 hours
- 3 ☐ 5 to less than 10 hours
- 4 ☐ 10 to less than 15 hours
- 5 ☐ 15 to less than 20 hours
- 6 ☐ 20 to less than 25 hours
- 7 ☐ 25 hours or more

45. In what year did you receive your most recent violence prevention training? *Write in year.*

19____ or 20____
- 1 ☐ I have never had violence prevention training.

46. *Prior to target month*, were any of the following violence prevention programs offered to train students in your school? *Check only one for each of the following (a-e).*

a. Reporting physical and non-physical violence?
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure

b. Peer counseling?
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure

c. Conflict Resolution?
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure

d. Diffusing assaultive or violent students or situations?
- 1 ☐ Yes
- 2 ☐ No
- 8 ☐ Unsure

e. Other violence prevention programs? Please specify:_____

47. *During previous month*, were you aware of any students in your classroom (or other setting in which instruction occurred) who ever had training related to violence? *Check only one.*
- 1 ☐ Yes
- 2 ☐ No
- 3 ☐ I did not have a classroom/instructional setting
- 8 ☐ Unsure

This section asks about events in your work environment (at the school in which you worked most often) and your non-work environment.

48. *Prior to target month*, how often were you the target of physical assault? *Check only one for each of the following (a-b).*

a. Work-related physical assault?
- 1 ☐ Never
- 2 ☐ 1-3 times
- 3 ☐ 4-10 times
- 4 ☐ More than 10 times

b. Physical assault not related to work?
- 1 ☐ Never
- 2 ☐ 1-3 times
- 3 ☐ 4-10 times
- 4 ☐ More than 10 times

Please continue to the next page. ⟶

49. ***Prior to target month***, **how often were you the target of a threat, sexual harassment, verbal abuse, or bullying?** *Check only one for each of the following (a-h).*

a. Work-related threat?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

b. Work-related sexual harassment?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

c. Work-related verbal abuse?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

d. Work-related bullying?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

e. Threat not related to work?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

f. Sexual harassment not related to work?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

g. Verbal abuse not related to work?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

h. Bullying not related to work?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

50. ***During previous month*** **how often did you witness *students* involved in any of the following against anyone in your work environment?** *Check only one for each of the following (a-e).*

a. Physical assault?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

b. Threat?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

c. Sexual harassment?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

d. Verbal abuse?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

e. Bullying?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

51. ***During previous month***, **how often were you made aware of *students* involved in any of the following against anyone in your work environment that you did not witness?** *Check only one for each of the following (a-e).*

a. Physical assault?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

b. Threat?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

c. Sexual harassment?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

d. Verbal abuse?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

e. Bullying?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

52. ***During previous month*** **how often did you witness *any person(s), other than a student,* involved in any of the following against anyone in your work environment?** *Check only one for each of the following (a-e).*

a. Physical assault?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

b. Threat?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

Please continue to the next page. →

c. Sexual harassment?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

d. Verbal abuse?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

e. Bullying?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

53. *During previous month*, how often were you made aware of *any person(s) other than a student* involved in any of the following against anyone in your work environment that you did not witness? *Check only one for each of the following (a-e).*

a. Physical assault?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

b. Threat?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

c. Sexual harassment?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

d. Verbal abuse?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

e. Bullying?
1 ☐ Never
2 ☐ 1-3 times
3 ☐ 4-10 times
4 ☐ More than 10 times

The next section asks about general demographic information.

54. What was your highest level of education *prior to target month*? *Check only one.*

1 ☐ Associate Degree
2 ☐ Bachelor's Degree
3 ☐ Master's Degree
4 ☐ Education Specialist Degree
5 ☐ Doctorate Degree

55. *Prior to target month*, how long had you worked as a licensed educator?

_____ Years _____ Months

56. Which of the following categories best describes your annual household income from all sources, before taxes, in the year *prior to target month*? *Check only one.*

1 ☐ Less than $10,000
2 ☐ $10,000 to less than $20,000
3 ☐ $20,000 to less than $30,000
4 ☐ $30,000 to less than $40,000
5 ☐ $40,000 to less than $50,000
6 ☐ $50,000 to less than $60,000
7 ☐ $60,000 to less than $70,000
8 ☐ $70,000 to less than $80,000
9 ☐ $80,000 to less than $90,000
10 ☐ $90,000 to less than $100,000
11 ☐ $100,000 and over
12 ☐ Prefer not to answer.

57. How many members were in your household (including yourself) in the year prior to *target month*?

_____ Number of Members

58. *During previous month*, what was your approximate weight?

_____ Pounds

59. What is your height in feet and inches?

_____ Feet _____ Inches

60. Do you have any additional comments about work-related violence? ***Please use extra paper if necessary.***

_____

_____

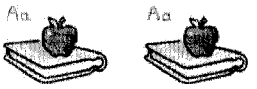
_____

61. We would greatly appreciate it if you could indicate the name of the school in which you worked the most time *during previous month* to enable an understanding of the geographic representation of schools and districts in this study.
School name: _____

Thank you for taking the time to participate in this important study! Please return this questionnaire in the enclosed envelope.

MES (Phase II), Short Form

MINNESOTA EDUCATORS' STUDY: PHASE II



Confidentiality - The information that you provide will be kept strictly confidential and no information that could personally identify you or the facility in which you work(ed) will ever be made public. Only investigators at the University of Minnesota will ever have access to this information. **If there is any question you do not wish to answer, please mark an X on the question number and continue to the next question.**

Drawing - We are providing savings bonds valued at $100 each to a minimum of 250 randomly selected individuals. You are not required to complete the questionnaire to be eligible for this drawing; however, you do need to check yes or no below, and return this questionnaire in the envelope provided.

1 ☐ **Yes**, include me in the savings bond drawing 2 ☐ **No**, do not include me in the savings bond drawing

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The following definitions are provided to help you respond to the questions below.

Work-related includes any activities associated with your job or events that occur in your work environment; work-related travel should be included.

Work-related violence is defined as the intentional use of physical force or emotional abuse, against an employee, that results in physical or emotional injury and consequences. This includes *physical assault, threat, sexual harassment, verbal abuse and bullying.*

Physical assault occurs when you are hit, slapped, kicked, pushed, choked, grabbed, sexually assaulted, or otherwise subjected to physical contact intended to injure or harm you.

A threat occurs when someone uses words, gestures, or actions with the intent of causing harm to you (physically or otherwise). Threats may also include theft or property damage.

Sexual harassment occurs when you experience any type of unwelcome sexual behavior (words or actions) that creates a hostile work environment.

Verbal abuse occurs when someone yells or swears at you, calls you names, or uses other words intended to control or hurt you.

Bullying is defined as repeated acts of intimidation or coercion.

1. Prior to target month, how often were you the target of the following?
Check only one for each of the following.

a. **Work-related physical assault?**
1 ☐ Never 2 ☐ 1-3 times 3 ☐ 4-10 times 4 ☐ More than 10 times

b. **Work-related threat?**
1 ☐ Never 2 ☐ 1-3 times 3 ☐ 4-10 times 4 ☐ More than 10 times

c. **Work-related sexual harassment?**
1 ☐ Never 2 ☐ 1-3 times 3 ☐ 4-10 times 4 ☐ More than 10 times

d. **Work-related verbal abuse?**
1 ☐ Never 2 ☐ 1-3 times 3 ☐ 4-10 times 4 ☐ More than 10 times

e. **Work-related bullying?**
1 ☐ Never 2 ☐ 1-3 times 3 ☐ 4-10 times 4 ☐ More than 10 times

******Thank you for taking the time to participate in this important study!******

123456-7  123456 

APPENDIX C

Minnesota Department of Education (MDE) Sample School Report Card

HOPKINS SENIOR HIGH 2006

Department of Education
http://education.state.mn.us

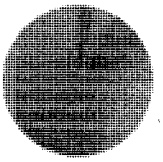
District Name: HOPKINS PUBLIC SCHOOL DISTRICT
Address: 2400 LINDBERGH DRIVE
MINNETONKA, MN 55305
Phone: 952-988-4500

Principal: WILLIE JETT
Website: www.hopkins.k12.mn.us
Grades served:

(Data from 2005-06 school year unless otherwise noted)

Student Information

Demographics



Student Population	2,087
Limited English Proficient	5%
Special Education	12%
Free and Reduced Price Lunch	17%

Enrollment

Is school eligible for open enrollment at any single grade level(s)?	Yes
AYP Attendance Rate	92.73%
AYP Graduation Rate	99.22%
Dropout Rate	0.30%

(Data from 2004-05 school year)

District Mobility

Students from other districts who attend school in this district	1,188
Students from this district who attend school in another district	802
Rate of students transferring out of the district	7.47%
Rate of students transferring between schools in district	0.49%
Rate of students transferring into the district	4.95%

2006 Report Card Five Star Ratings

Minnesota Comprehensive Assessment (MCA) - Series II

MCA - Series II - Reading ★★★★★

Our school is a five star school for reading:
3 stars for meeting federal accountability requirements this year.
Exceptional Academic Performance
1 star for having more than 30% of students scoring in top level on the MCAs.
1 star for outstanding performance compared to schools with similar numbers of students receiving free and reduced price lunch.

MCA Series II - Mathematics ★★★★

Our school is a four star school for mathematics:
3 stars for meeting federal accountability requirements this year.
Exceptional Academic Performance
1 star for outstanding performance compared to schools with similar numbers of students receiving free and reduced price lunch.

Stars for Exceptional Academic Performance

Schools that make AYP can earn up to two more stars by meeting any of the following:

- Fewer than 10% of students not meeting or partially meeting standards.
- More than 30% of students exceeding standards.
- Outstanding performance compared to schools with similar numbers of students receiving free and reduced price lunch.
- Outstanding performance compared to schools of similar size.

HOPKINS SENIOR HIGH

Advanced Academic Opportunities

High School:

The school provides academic opportunities and support outside of the school day	Yes
The school integrates technology into curriculum and instruction across subject areas	Yes
The students can meet art standards in four of the following areas: dance, media arts, music, theater & visual arts	Yes
The school challenges all learners by differentiating instruction in classrooms from basic through college	Yes
The school offers strategies to meet the needs of culturally and economically diverse learners	Yes

(Information collected directly from schools)

School Safety Policies and Programs

Crisis Management Policy	Yes
Harassment Policy	Yes
Dangerous Weapons Policy	Yes
Alcohol/Drug Education	Yes
Anti-Violence/Anti-Bullying Programs	Yes

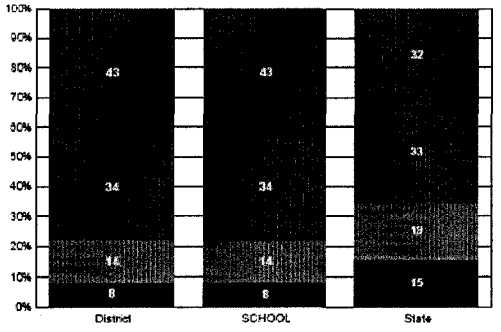
(Information collected directly from schools)

2006 Minnesota Comprehensive Assessment Series II Scores

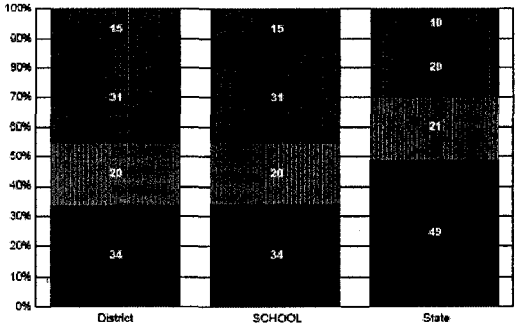
Exceeds standard
Meets standard
Partially meets standard
Does not meet standard

Values are percentages - test documents with valid test scores relative to total test documents.

Reading - Grade 10



Math - Grade 11



Adequate Yearly Progress (AYP)

Schools must meet requirements in each eligible category as shown below.

	Reading		Mathematics		Other	
	Participation	Proficiency	Participation	Proficiency	Attendance	Graduation
All students	Yes	Yes	Yes	Yes	-	Yes
American Indian/Alaskan Native	-	-	-	-		
Asian/Pacific Islander	-	-	-	Yes		
Hispanic	-	Yes	-	Yes		
Black, not of Hispanic origin	Yes	Yes	Yes	Yes		
White, not of Hispanic origin	Yes	Yes	Yes	Yes		
Limited English Proficient	Yes	-	Yes	-		
Special Education	Yes	Yes	Yes	Yes		
Free and Reduced-Priced Meals	Yes	Yes	Yes	Yes		

Attendance - AYP attendance is 90% or progress toward that goal.

Graduation - AYP graduation rate goal is 80% or progress toward that goal.

Participation - To meet AYP goals, 95% of students must participate in testing.

Proficiency - A calculation that determines whether schools have made AYP.

HOPKINS SENIOR HIGH

School Opportunities

High School:

College and Career Readiness Students at this school can participate in:		Extra Curricular Activities School offers:	
EPAS: Plan Assessments	Yes	Competitive Athletics	Yes
ACT Tests	Yes	Non-competitive Athletics	Yes
SAT Tests	Yes	Co-curricular Athletics	Yes
Advanced Placement Courses	Yes	Dance, Media Arts, Music, Theater and/or Visual Arts	Yes
International Baccalaureate Courses	No	Student Clubs and Organizations	Yes
College in the Schools	Yes		
CLEP Tests	Yes		
Vocational Certification	Yes		
Tech Prep for College Credit	No		

(Information collected directly from schools)

School & District Staffing

School Staff

Number of School Staff by Position	School #	State #
Teachers	112.50	52,255
Media Specialists	1.93	877
Other Licensed Professionals	20.01	6,410
Paraprofessionals	27.59	15,109
Administrators	3.00	2,649
Other Staff Including Non-licensed Staff	60.72	28,252
Total Staff	225.75	105,552

Teacher Degree Preparation	School %	State %
Bachelor's	17.96%	48.87%
Master's	79.67%	48.76%
Doctorate	1.48%	0.33%

Teacher Years of Experience	School %	State %
Less than 3 years	2.07%	5.00%
More than 10 years	63.70%	60.03%

State Licensure Compliance	School %	State%
Staff in compliance by licensure	99.27	97.81
Staff in compliance by permission	0.00	1.91

Federal Highly Qualified Requirements	School %	State %
Teachers meeting Federal requirements for "Highly Qualified"	99.57%	98.19%
Title I Paraprofessionals considered "Highly Qualified"	N/A	91.31%

Full Time Equivalent (FTE)

District Staff

Average Administrative Salaries	District	State
Superintendents:	$174,000	$98,073
Principals:		
Elementary:	$103,942	$86,231
Middle School:	NA	$89,490
High School:	$109,029	$83,546
School Board Members: *	$4,761	

Teacher Salary Information	District	State
Average Teacher salary	$55,822	$47,523
Bachelor's Degree - beginning level*	$33,607	
Bachelor's Degree - highest level*	$63,923	
Master's Degree - highest level*	$72,099	

(*Information collected directly from districts
NA - data not available
NS ** - data not submitted)

HOPKINS SENIOR HIGH

Core Academic Classes Taught by Highly Qualified Teachers Statewide				
		Core Academic Classes Total #	Core Academic Classes Taught by Highly Qualified Teachers Total F.T.E.	Percent F.T.E.
Elementary level	High Poverty Schools	4,407	4,284	97.20%
	Low Poverty Schools	6,102	6,053	99.20%
	All Elementary Schools	20,170	19,905	98.69%
Secondary level	High Poverty Schools	2,034	1,884	92.65%
	Low Poverty Schools	7,179	7,066	98.43%
	All Secondary Schools in State	18,387	17,954	97.64%
All Schools in State		38,557	37,858	98.19%

Q Comp and Professional Development for Staff

The district staff development program has the following components:

This school participates in Q Comp	Yes
Aligned with student and staff needs	Yes
Informed by student data	Yes
Based on curricular and instructional needs	Yes
Based on formal assessment of instructional effectiveness	Yes
Designed to enhance coordination across grades	Yes
Aligned to district and site strategic goals	Yes

(Information collected directly from districts)

HOPKINS SENIOR HIGH

Report to Taxpayers (Data from 2004-05 school year)

General Fund Expenditure per Student by Program

	School	District	State
District Level Administration	$496	$496	$360
School Level Administration	$429	$453	$364
Regular Instruction	$4,441	$3,945	$3,828
Career & Technical Instruction	$557	$132	$130
Special Education Instruction	$2,036	$2,036	$1,533
Student Activities/Athletics	$391	$131	$226
Instructional Support Services	$881	$744	$382
Pupil Support Services	$347	$245	$234
Operations, Maintenance & Other	$834	$732	$716
Student Transportation	$653	$653	$476
Subtotal - General Fund Operating Expenditures	**$11,065**	**$9,567**	**$8,249**
Capital Expenditures	$547	$545	$431
Total - General Fund	$11,612	$10,112	$8,680

Revenue per Student generated by students attending this school

	School	District	State
Basic General Education	$5,888	$5,127	$5,173
Extended Time	$0	$46	$62
Compensatory	$42	$90	$316
Limited English Proficiency	$36	$46	$41
Sparsity	$0	$0	$21
Operating Capital	$270	$237	$223
Operating Referendum	$1,665	$1,463	$603
Other General Education	$4	$4	$173
Subtotal, General Education	**$7,905**	**$7,013**	**$6,612**
Special Education	$1,203	$3,024	$987
Title I	$0	$0	$122
First Grade Preparedness	$0	$0	$9
Other Operating	$589	$251	$158
Other Capital Expenditures	$0	$0	$765
Total - General Fund	$9,696	$10,288	$8,658

General Fund Revenue per Student by Source

	District	State
Federal Grants	$378	$446
State Aids and Grants	$6,610	$6,997
Local Property Tax	$2,101	$818
Student Fees/Admissions	$98	$77
Tuition from other Districts	$540	$115
Investment Earnings	$6	$31
Other Local	$181	$174
TOTAL General Fund	$9,914	$8,658

Expenditures as percent of revenues generated by students attending this school

School	District	State
120%	113%	100%

District Revenue and Expenditure Totals by Fund

	Revenue	Expenditures
General	$83,523,776	$85,199,981
Food Service	$4,296,301	$4,946,402
Community Service	$8,184,537	$8,108,907
Debt Service	$8,524,408	$8,182,598
TOTAL	$104,529,022	$106,437,888

Trends Over Time

	2002-03	2003-04	2004-05
General Fund Revenue per Student	$9,317	$9,780	$9,913
Unreserved General Fund Balance per Student	($95)	($136)	($502)

School District Property Tax Information

	District	State
Average Home Value	$234,622	$159,334
Average School District Property Tax per Home	$859	$521
Average School District Property Tax per $100,000 of Home Value after Credits	$366	$327