



Contents lists available at ScienceDirect

Annals of Epidemiology

journal homepage: www.annalsofepidemiology.org

Original article

Case-control study of student-perpetrated physical violence against educators

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ARTICLE INFO

Article history:

Received 11 September 2013

Accepted 3 February 2014

Available online 15 February 2014

Keywords:

Occupational violence

School violence

Violence against educators/teachers

Student perpetrators

Assault risk factors

Work-related

ABSTRACT

Purpose: Although prior research focused primarily on student-on-student school violence, educators are also at risk. This study was designed to identify risk factors for assaults against educators.

Methods: Kindergarten-grade 12 educators ($n = 26,000$), randomly selected from a state license database, were screened for eligibility (6,469, eligible) by mailed questionnaire. Phase 1 (12-month recall) identified eligible assault cases ($n = 372$) and controls ($n = 1,116$), June 2004 to December 2005; phase 2 (case-control study; response, 78%) enabled identification of exposures through 1-month recall before student-perpetrated assaults (cases) and randomly selected months (controls). Directed acyclic graphs enabled confounder selection for multivariable logistic regression analyses; reweighting adjusted for potential biases.

Results: Risks (odds ratios, 95% confidence intervals) increased for working in: Special Education (5.84; 4.07–8.39) and School Social Work (7.18; 2.72–18.91); kindergarten to second grade (1.81; 1.18–2.77); urban (1.95; 1.38–2.76) schools; schools with less than 50 (8.40; 3.12–22.63), 50–200 (3.67; 1.84–7.34), 201–500 (2.09; 1.32–3.29), and 501–1000 (1.94; 1.25–3.01) students versus more than 1000; schools with *inadequate* resources always/frequently (1.62; 1.05–2.48) versus infrequently/never; *inadequate* building safety always/frequently (4.48; 2.54–7.90) versus infrequently/never; and environments with physical barriers (1.50; 1.07–2.10). Risks decreased with routine locker searches (0.49; 0.29–0.85) and accessible exits (0.36; 0.17–0.74).

Conclusions: Identification of assault risk factors provides a basis for further investigation and interventions.

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Introduction

Violence is an important cause of occupational mortality and morbidity [1,2]. In the United States, homicide is the second leading cause of occupational fatality for both men and women [3]. Although much is known about work-related fatalities, research on nonfatal violence, accounting for approximately 2 million events annually [4], and relevant risk factors is limited.

The contents of this effort are solely the responsibility of the authors and do not necessarily represent the official view of the Centers for Disease Control and Prevention or other associated entities.

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Based on 2005–2009 data, U.S. educators had the fifth highest annual nonfatal occupational violence rate: 6.5 events per 1000 educators—exceeded only by rates for law enforcement (47.7), mental health (20.5), transportation (12.2), and retail sales (7.7) employees [4]. Despite limited literature, it is evident that violence against educators is an international problem as well [5–9].

Students are primary perpetrators of violence against educators [10–14]. In the 2007–2008 school year, over 7% of U.S. elementary and secondary school educators were threatened and 4% physically attacked [15]. Greater percentages of public (vs. private) school educators reported being *threatened* (8% vs. 3%) or *physically attacked* (4% vs. 2%) by students [15]. Although student-on-student violence has been identified as a problem, little is known about nonfatal violence against educators, including risk factors.

The study objective was to examine specific exposures hypothesized *a priori* as associated with the risk of nonfatal work-related physical assault (PA) outcomes among Minnesota educators. This

includes environmental factors that enable opportunities for more permanent types of interventions that can benefit greater numbers of people.

Methods

Overview of the Minnesota Educators' Study

This study design involved two phases: phase 1, a comprehensive study to collect data on incidence and consequences of PA and nonphysical violence and phase 2, a nested case-control study (<http://www.strobe-statement.org>) to identify risk factors for PA—the primary focus of this article. Approval for the conduct of this study was obtained from the University of Minnesota Institutional Review Board.

Study population

The target population included all educators (teachers, specialists, and administrators), identified from the Minnesota Department of Education's License List [16], who were working during the study period. This is a population for which a database of contact addresses and demographic information, used for selection of subjects and subsequent adjustment, was available.

Study cohort

From pilot study results, most “lifetime” licensees (no expiration date) were retired or deceased and, thus, excluded. Also excluded were those whose licenses expired before 2003. From the remaining 116,661 educators, a sample of 26,000 individuals [17–19] was randomly selected for a screening survey to further determine eligibility, requiring employment as a Minnesota licensed educator in a kindergarten through 12th grade (K-12) school within the past 12 months (based on survey completion date between June 2005 and December 2005). Among the 8,614 educators returning a screening survey, 6,469 indicated that they met the eligibility requirement and were considered potentially eligible to be sent the phase 1 questionnaire (Fig. 1).

Selection of cases and controls

Cases were initially identified by educators reporting at least one work-related PA event during the previous 12 months on the phase 1 survey ($n = 372$). Controls, selected randomly (3:1 ratio; $n = 1,116$), reported no PA events during their eligible reported working months.

Variables and measures

Definitions

Violence is the intentional use of physical force or emotional abuse against an individual resulting in physical or emotional injury and consequences. In this article, only PA was addressed; PA occurs when one is hit, slapped, kicked, pushed, choked, grabbed, sexually assaulted, or otherwise subjected to physical contact intended to injure or harm. Violence is work-related if it occurs during any activities in the work environment or is associated with the job (including travel). These definitions, primarily consistent with those incorporated in a prior occupational violence study [20–22], reflect those identified by the National Institute for Occupational Safety and Health [23] and were approved for this study in consultation with the Educational Advisory Consulting Team, involving teachers and administrators who participated in study development, instrument review, and results discussions.

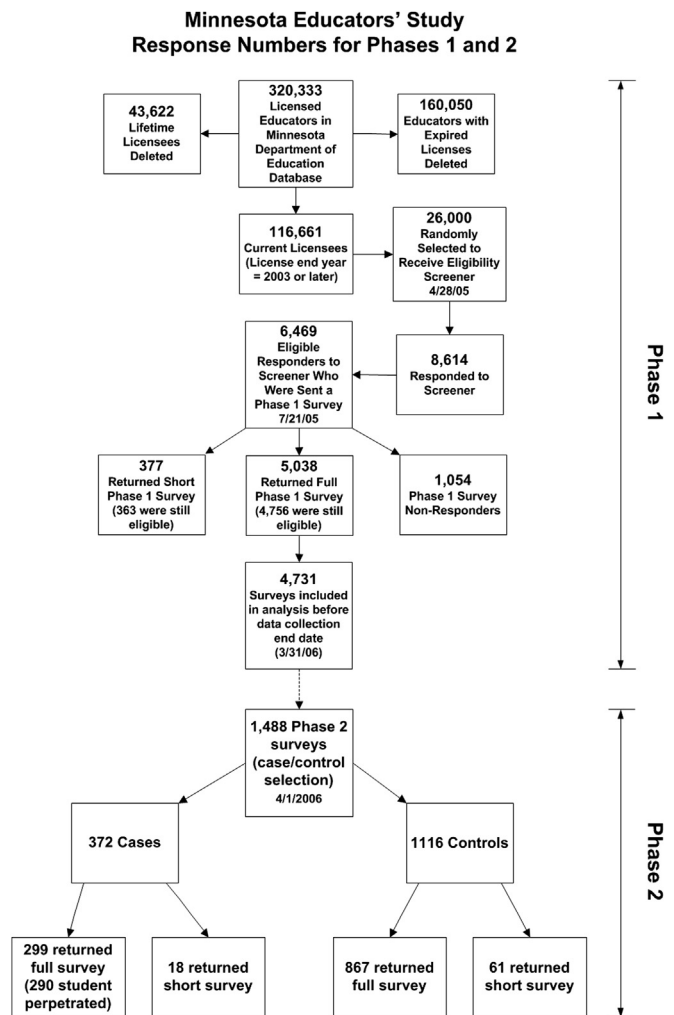


Fig. 1. Minnesota Educators' Study: response numbers for phases 1 and 2.

Exposure assessment

The following data were collected on specific characteristics and relevant exposures established *a priori*, based on a conceptual model derived from the literature [24]: *educator characteristics* (age; gender; race; highest education level; years worked as licensed educator and in current school; grade levels taught; job classification; and primary professional activity); *characteristics of students with whom educators interacted* (average number of students assigned per day; student contact hours per day; most common age group and primary gender of students taught; student race/ethnicity primarily same/different from educator; any type of student impairment; and parental involvement); *workplace/surrounding environmental factors* (type/location of school; average number of students enrolled; school resources and building safety; routine locker searches; level of lighting; exit accessibility; physical barriers; whether administration took corrective measures against workplace assault; and frequency of educators witnessing students involved in PA or nonphysical violence [threats; sexual harassment; verbal abuse; and bullying]). Continuous variables, such as years worked as a licensed educator and average number of students assigned per day, were categorized for data analysis using percentile cut points (median, quartiles).

Data collection

The specially designed data collection instruments and contact procedures were tested through a pilot study ($n = 300$) and, after

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