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Western Journal of Emergency Medicine:

Integrating Emergency Care with Population Health

Special Issue from the Emory Center for Injury Control

VIOLENCE ASSESSMENT AND PREVENTION

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Western Journal *of* Emergency Medicine:

Integrating Emergency Care with Population Health

Special Issue from the Emory Center for Injury Control

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Western Journal *of* Emergency Medicine:

Integrating Emergency Care with Population Health

JOURNAL FOCUS

Emergency medicine is a specialty which closely reflects societal challenges and consequences of public policy decisions. The emergency department specifically deals with social injustice, health and economic disparities, violence, substance abuse, and disaster preparedness and response. This journal focuses on how emergency care affects the health of the community and population, and conversely, how these societal challenges affect the composition of the patient population who seek care in the emergency department. The development of better systems to provide emergency care, including technology solutions, is critical to enhancing population health.

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Integrating Emergency Care with Population Health

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Call for Papers

Gender-Specific Research in Emergency Medicine:
Investigate, Understand and Translate How Gender Affects Patient Outcomes

The 2014 *Academic Emergency Medicine* Consensus Conference, **Gender-Specific Research in Emergency Medicine** will be held on Wednesday, May 14, 2014, immediately preceding the SAEM Annual Meeting Dallas, TX. Original papers on the this topic, if accepted, will be published together with the conference proceedings in the December 2014 issue of *Academic Emergency Medicine.*

Gender-specific medicine is the "science of how normal human biology differs between men and women and how the manifestations, mechanisms and treatment of disease vary as a function of gender." While gender-specific medicine incorporates advances in reproductive health issues, the AEM consensus conference will focus on broad disease-specific EM issues that are relevant to both women and men. The key domains of the conference are cardiovascular/resuscitation, cerebrovascular, pain, trauma/injury/violence, diagnostic imaging, mental health and substance abuse.

Consensus Goal:
The goal of the 2014 AEM Consensus Conference is to stimulate EM researchers to methodically recognize, investigate and translate the impact of gender on their clinical research outcomes. The conference proposes to build a foundation upon which researchers can build interdisciplinary scholarship, networks of expertise, discussion forums, multicenter collaborations, evidence-based publications, and improved education. The overarching themes of the conference have been guided and informed by NIH research priorities on gender medicine and include study of the lifespan, sex/gender distinctions, health disparities/differences and diversity and interdisciplinary research.

Consensus Objectives:
1) Summarize and consolidate existing data and create a blueprint that furthers gender-specific research in the prevention, diagnosis and management of acute diseases

2) Discuss the conceptual models for designing studies and analysis that incorporate gender as an independent variable.

3) Build a multinational interdisciplinary consortium to study gender medicine for acute conditions.

Accepted manuscripts will describe relevant research concepts in gender-specific areas with priority placed on differential disease risk, vulnerability, progression and outcomes. They may include work in clinical/translational, health systems, policy or basic sciences research. Descriptions of specific research, projects, or collaborations may be used for illustrative purposes but should not comprise the core of the submission. Original contributions describing relevant research or concepts on these or similar topics will be considered, and original high-quality research may also be submitted alone or in conjunction with concept papers. Papers will be considered for publication in the December 2014 issue of *Academic Emergency Medicine* if received by Monday, March 11, 2014. All submissions will undergo peer review and publication cannot be guaranteed.

For queries, please contact Marna Rayl Greenberg, DO, MPH (Marna.Greenberg@lvh.com) or Basmah Safdar, MD (basmah.safdar@yale.edu) the 2014 Consensus Conference Co-Chairs.

Information and updates will be regularly posted in *Academic Emergency Medicine*, the SAEM Newsletter, and the journal and SAEM websites.

Using a Multidisciplinary Approach for a Multi-faceted Public Health Problem

Debra Houry, MD, MPH*
Monica H. Swahn, PhD, MPH†
Abigail Hankin, MD, MPH*

* Emory University, Department of Emergency Medicine, Atlanta, Georgia
† Georgia State University, School of Public Health, Atlanta, Georgia

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The Emory Center for Injury Control is a multi-university consortium dedicated to studying and preventing unintentional injuries and violence. A major goal of our Center is to transcend academic boundaries and disciplines to connect research to practice. As such, we are focusing our fourth special *Western Journal of Emergency Medicine* issue on multidisciplinary research.

In particular, this thematic issue provides innovative strategies for strengthening new research and adopting new practices that better incorporate injury prevention. For example, one study addresses the need to provide violence prevention strategies in trauma centers, underscoring how many of the youth seen in emergency departments are at increased risk for violence.[1] Similarly, there is a need to incorporate protection of vulnerable populations using new strategies and in broader settings. Self-Brown et al[2] make a case for including child maltreatment as part of broader disaster planning, and Strasser[3] suggests that we address elder mistreatment through screening in legal assistance settings.

This issue contains research spanning the lifespan and in varied populations. For example, one study assesses the rates of intimate partner violence (IPV) among men who identify as gay or bisexual, as well as their perceptions of police helpfulness and next steps given their potential need for legal protection,[4] while another study assesses individual relationship factors that modulate risk of IPV among men in a same-sex relationship.[5] Goldammer et al[6] focused on a younger population, investigating factors that influence the probability that a middle or high school student will intervene in a bullying situation, research that lays the groundwork for the development of effective bullying prevention programs. Also focusing on the adolescent population, a qualitative study by Kruger et al[7] describes the perspectives of young girls at risk for sexual exploitation, including their experiences with building trusting relationships, peer aggression, sexuality, and sexual commodification in the world around them. Another study, by Barlament et al[8], focuses on unintentional injury prevention among adolescents, and highlights the disparity in seatbelt use among teens in rural areas, making a case for interventions that address this problem.

With respect to increasing the resources for violence prevention, one of the most powerful arguments we can make highlights the costs of violence to individuals and to our society at large. Roldós et al[9] assess the economic burden of IPV in Ecuador and make a powerful argument against the asymmetry of the costs of violence versus the government resources allocated to this issue.

Finally, the editorial by Guedes[10] makes a compelling case for integrating different forms of violence in research and practice; in particular the authors address the intersection between child maltreatment and IPV and provide a framework accompanying their key points. Similarly, the manuscript by Swahn et al[11] focuses on high school students, and examines the overlapping risk factors for violence against others with violence against oneself, as well as the overlap between violence and another important risk behavior – early alcohol-use initiation. These manuscripts point to a critical frontier in violence and injury research: the development of an understanding of how distinct forms of violence overlap and potentiate one another.

The research findings in this issue move the field of violence and injury research forward, using a multidisciplinary approach to develop an understanding of violence and injury prevention across the entire spectrum of human development.

Address for Correspondence: Debra Houry, MD, MPH. Emory University, Department of Emergency Medicine, 531 Asbury Circle, Annex Building, Suite N340, Atlanta, GA 30322. Email: dhoury@emory.edu.

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REFERENCES

1. Hankin A, Meagley B, Wei SC, et al. Prevalence of Exposure to Risk Factors for Violence Among Young Adults Seen in an Inner-City Emergency Department. *West J Emerg Med*. 2013;14(4):303-308.
2. Self-Brown S, Anderson P, Edwards S, et al. Child Maltreatment and Disaster Prevention: Qualitative Study of Community Agency Perspectives. *West J Emerg Med*. 2013;14(4):401-407.
3. Strasser SM, Weaver S, Smith M, et al. Screening for Elder Mistreatment among Older Adults Seeking Legal Assistance Services. *West J Emerg Med.* 2013;14(4):309-315.
4. Finneran C, Stephenson R. Gay and Bisexual Men's Perceptions of Police Helpfulness in Response to Male-Male Intimate Partner Violence. *West J Emerg Med.* 2013;14(4):354-362.
5. Stephenson R, Sata KN, Finneran C. Dyadic, Partner, and Social Network influences on Intimate Partner Violence among Male-Male Couples. *West J Emerg Med.* 2013;14(4):316-323.
6. Goldammer L, Swahn MH, Strasser SM, et al. An Examination of Bullying in Georgia Schools: Demographic and School Climate Factors Associated with Willingness to Intervene in Bullying Situations. *West J Emerg Med.* 2013;14(4):324-328.
7. Kruger A, Harper E, Harris P, et al. Sexualized and Dangerous Relationships: Listening to the Voices of Low-Income African American Girls Placed at Risk for Sexual Exploitation. *West J Emerg Med.* 2013;14(4):370-376.
8. Davidson S, Barlament J, Dawson L, et al. Metrics for Local Community Planning and Evaluation: The Case for Observational Measurement of High Risk Rural Sub-Populations in Occupant Safety. *West J Emerg Med.* 2013;14(4):380-382.
9. Roldós MI, Corso P. The Economic Burden of Intimate Partner Violence in Ecuador: Setting the Agenda for Future Research and Violence Prevention Policies. *West J Emerg Med.* 2013;14(4): 347-353.
10. Guedes A, Mikton C. Examining the Intersections between Child Maltreatment and Intimate Partner Violence. *West J Emerg Med.* 2013;14(4):377-379.
11. Swahn MH, Bossarte RM, Palmier JB, et al. Co-Occurring Physical Fighting and Suicide Attempts among U.S. High School Students: Examining Patterns of Early Alcohol Use Initiation and Current Levels of Alcohol Use. *West J Emerg Med.* 2013;14(4):341-346.

Prevalence of Exposure to Risk Factors for Violence among Young Adults Seen in an Inner-City Emergency Department

Abigail Hankin, MD, MPH* * Emory University, Department of Emergency Medicine, Atlanta, Georgia
Brittany Meagley, MPH† † Emory University, Rollins School of Public Health, Department of Health Policy and Management, Atlanta, Georgia
Stanley C. Wei, MD, MPH‡ ‡ St. Joseph's Mercy Care Services, Atlanta, Georgia
Debra Houry, MD, MPH*

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Introduction: To assess the prevalence of risk factors for violent injury among young adults treated at an urban emergency department (ED).

Methods: This study is a cross-sectional analysis of data collected as part of a longitudinal study. Enrollment took place in an urban ED in a Level 1 trauma center, June through December 2010. All patients aged 18–24 years were eligible. Patients were excluded if they were incarcerated, critically ill, or unable to read English. Study participants completed a 10-minute multiple-choice questionnaire using previously validated scales: a) aggression, b) perceived likelihood of violence, c) recent violent behavior, d) peer behavior, and e) community exposure to violence.

Results: 403 eligible patients were approached, of whom 365 (90.1%) consented to participate. Average age was 21.1 (95% confidence interval: 20.9, 21.3) years, and participants were 57.2% female, 85.7% African American, and 82.2% were educated at the high school level or beyond. Among study participants, rates of high-risk exposure to individual risk factors ranged from 7.4% (recent violent behavior) to 24.5% (exposure to community violence), with 32.3% of patients showing high exposure to at least one risk factor. When comparing participants by ethnicity, no significant differences were found between White, African-American, and Hispanic participants. Males and females differed significantly only on 1 of the scales – community violence, (20.4% of males vs. 30.3% of females, p=0.03). Self-reported hostile/aggressive feelings were independently associated with initial presentation for injury-associated complaint after controlling for age, sex, and race (odds ratio 3.48 (1.49-8.13).

Conclusion: Over 30% of young adults presenting to an urban ED reported high exposure to risk factors for violent injury. The high prevalence of these risk factors among ED patients highlights the potential benefit of a survey instrument to identify youth who might benefit from a targeted, ED-based violence prevention program. [West J Emerg Med. 2013;14(4):303–308.]

INTRODUCTION

Injuries account for the majority of childhood injuries and deaths in the United States (U.S.), with homicide and suicide ranked as the second and third leading cause of death, respectively, among adolescents aged 15–19.[1] Furthermore, injuries from interpersonal assaults in this age group accounted for 656,000 visits to U.S. emergency departments (EDs) in 2008.[2] Non-fatal violent injuries in adolescents often precede fatal violence and homicide, making this a pressing public health concern for research and prevention initiatives.[3,4]

Previous research has identified risk factors that are associated with risk for violent injury among adolescents and young adults. These risk factors include low academic performance, peer delinquency, and availability of drugs in a neighborhood, as well as witnessing or being the victim of an act of violence, a history of violent injury, and a history of

physical fighting.[5,6] Among boys, a history of illicit drug use predicted violent injury, whereas among girls, a history of depressive symptoms was predictive.[6]

As both a societal safety net and a healthcare provider to those with limited resources, many behavioral scientists have highlighted the potential of the ED as a site for screening for health risks and initiating prevention programs.[7] The ED has been used as a site for primary and secondary prevention strategies for health-related behavioral risks ranging from intimate partner violence to substance abuse.[8,9] With respect to youth violence, prior studies have found that ED-based violence prevention can be an effective method of secondary prevention among previously-injured youth.[10]

To realize the potential of the ED as a site for primary prevention efforts, it is important to target research and prevention at youth who are at risk, rather focusing on youth who have been the victims of violent injury. Currently, there is a dearth of research assessing the prevalence of risk factors for violent injury among all young adults visiting the ED, or the relationship between these risk factors and risk for future ED visits for injury.

In this study, we sought to identify the prevalence of risk factors for violent injury among young adults presenting to an urban, inner-city ED, as well as the association between risk factor exposure and gender, age, ethnicity, and presentation for injury vs. non-injury complaint. By assessing the prevalence of these risk factors across all youth presenting to the ED, this study can provide a picture of the burden of risk for violent injury among young patients in the ED.

METHODS

Study Design

We conducted a cross-sectional survey of patients aged 18–24, presenting to the ED over a 7-month period. This study was approved by our university institutional review board and the hospital research oversight committee.

Setting

The ED is in an inner-city academic hospital predominantly serving a minority (88% African- American), indigent population. The ED serves over 100,000 patients annually.

Study Protocol

Participants were enrolled by research assistants, including both departmental research assistants (RA) and a dedicated study research assistant. Both the departmental RAs and the study RA were specially trained in recruiting and consenting patients for ED-based research, and had specialized training in ED patient recruitment, study ethics, and informed consent procedures. The RAs were present in the ED for 8-hour shifts, with shift day and time varying to include weekend days, as well as weekdays, and day shifts as well as evening shifts.

Any patient between the ages of 18–24, regardless of presenting complaint, was eligible for participation. We excluded participants if they were critically ill, incarcerated, had a psychiatric emergency, or if they were unable to read English. All eligible patients were approached for participation in the study. Potential participants were asked to participate in a study about health and health behaviors among young adults, and were asked whether they would be willing to complete a written survey requiring approximately 10 minutes of their time. If participants were in the waiting room when approached, they were taken to a private area to complete the survey. If participants were in treatment rooms, RAs endeavored to identify periods during the ED course when the patient would not be interrupted for the duration of survey completion. Visitors were asked to step away during completion of the survey.

Participants in the study were asked to complete an 8-page written survey, consisting of Likert-style questions (details below). Completion of the survey took approximately 10 minutes, and the RA approached patients only during naturally occurring episodes of waiting, such as in the waiting room or while awaiting results. Patients were provided with verbal and written informed consent, and were given a $5 gift card for their time.

Measures

The survey was composed of 6 different instruments; instruments were identified via a Centers for Disease Control and Prevention (CDC) compendium of Youth Violence assessment tools, and were selected based on risk factors evaluated and relevance to the study age group.[11] To assess hostile/aggressive behavior, we used the Hostility portion of the Product-Symptom Checklist-90, 6 items scored on a Likert scale and designed to measure symptoms of aggression, and hostility.[12] This instrument has been shown to have an internal consistency of 0.73 when tested among adolescent African-American males.[13] To assess self-perceived likelihood of violence, we used the Likelihood of Violence and Delinquency Scale of the Sage Baseline Survey. The scale has 9 items, each with a Likert-type scale of multiple-choice options. When studied in a population of adolescent African-American males, it was found to have an internal consistency of 0.84.[14] To assess recent history of engagement in violence, we used the Aggressive Behavior Scale of the Sage Baseline Survey, a 12-item survey of Likert-type questions which has been found to have an internal consistency of 0.66 to 0.80 among adolescent African-American males.[15] To assess peer-group violence, we used the Friend's Delinquent Behavior scale from the Denver Youth Survey, an 8-item scale found to have an internal consistency among adolescent African-American males of 0.89.[15] Finally, exposure to community violence was measured using the Children's Exposure to Community Violence survey, a 12-item survey with an internal consistency of 0.84 among adolescent African-American males.[16]

Although the survey instruments used had been developed and validated in adolescent populations, the majority have not been used to define 'high-risk' and "low-risk" youth based on survey results. For the purpose of defining the prevalence of violence risk factor exposure in the ED, we defined a "high risk" exposure to a given risk factor as strong endorsement (greater than the midpoint on the Likert scale) on more than half of items within a given assessment. Two alternative definitions of high risk were also evaluated: 1.) Any endorsement (2 or more on the Likert scale) on more than half of the items and 2.) Any endorsement of any item in the assessment.

Data Analysis

We analyzed data using SAS 9.2 (Cary, NC). We analyzed the survey data using Pearson's χ^2 test or Fisher's Exact test as appropriate to determine the associations between survey results and demographic factors (gender and ethnicity). T-tests were used for assessing associations with age, which we entered as a continuous variable. We used bivariate and multivariate logistic regression to evaluate the association between demographic and violence risk factors and initial presentation to the ED for injury. Given small cell sizes for non-black races, we used a binary variable for black versus non-black race in the models. Final model selection was by backwards elimination with forced inclusion of key demographic variables. We included all usable data for participants who were unable to finish the survey.

RESULTS

Four hundred three eligible patients were approached, of whom 365(90.1%) consented to participate. Average age was 21.1 years. Participants were 57.2% female, 85.7% African-American, and 82.2% had completed high school.

When comparing participants across all categories, we found that 32.3% of patients reported a high exposure to 1 or more risk factors surveyed. Rates of exposure to tested risk factors for violence/violent injury ranged from 7.4% of participants reporting recent violent behavior, to 24.5% reporting exposure to community violence (Table 1).

When comparing responses by ethnicity, we found no significant differences between rates of risk factor exposure between black vs. non-black participants. These results are limited by the very small numbers of participants who identified as a race/ethnicity other than African-American. This reflects the patient population served in study ED, as described in other research studies undertaken in this ED (Table 2).[17]

Male vs. female participants also showed notable similarities, with significant variation found only in responses to questions about exposure to community violence (20.4% of females vs. 30.3% of males, p=0.03). Risk exposures showing trends towards significance included hostile/aggressive feelings (19.4% among females vs. 12.5% among males, p=0.08) and self-reported prior violent behavior (6.2% among females vs. 11.2% among males, p=0.09) (Table 3). Differences in age between those identified as high risk versus low risk were small and not statistically significant (Table 4).

Age, sex, and race were not significantly associated with presentation to the ED for evaluation of an injury-related complaint versus a non-injury complaint. Those who reported high levels of hostile/aggressive impulses were significantly more likely to have presented for an injury-related complaint (odds ratio [OR] 3.02, 95% confidence interval [CI] 1.34, 6.83). This association remained significant after controlling for age, sex, and race (OR 3.48, 95% CI 1.49, 8.13). No statistically significant association was found between injury and other violence risk factors (Table 5).

DISCUSSION

These study findings show high rates of exposure to risk factors for violent injury among young adults presenting to this urban ED, including hostile/aggressive impulses (16.5% of the overall study sample), self-reported probability of future violent behavior (8.2%), prior history of violent/aggressive behavior (7.4%), peer group violent behavior (9.9%), and exposure to community violence (24.5%).

The most notable finding from this cross-sectional study was the strikingly similar rates of risk factor exposure when comparing participants by gender, ethnicity, and based on reason for ED visit, comparing patients seen for an injury compliant vs. those presenting for a non-injury complaint. When comparing participants by gender, we found a trend towards higher rates of hostile/aggressive feelings among females, and significantly higher exposure to community violence among males. These findings correlate with recent ED research, which found that gender was not significantly related with risk of peer violence.[18] Reasons for the differences noted in this study might be based on a) gender differences in perceived social norms around reporting emotions (i.e., females might be more willing to report anger/hostility), and b) gender-based differences in time spent outdoors in the community, and different settings chosen for social aggregation, which may impact the likelihood of directly witnessing community violence.

Similarly, when comparing participants who presented to the ED for an injury complaint vs. a non-injury complaint, most categories surveyed did not show a significant difference in risk exposure by presenting complaint. The only risk factor that varied significantly was the proportion of patients with frequent hostile/aggressive feelings, at 37.5% among injured patients vs. 16.6% of non-injury patients. We found the similarities between injured vs. non-injured patients to be as illuminating as the difference; this suggests that targeting violence-prevention interventions toward patients who present after a severe injury may miss a large population of youth presenting for unrelated complaints, but who are nonetheless at very high risk.

Across the board, the findings of this study suggest that traditional expectations about demographic factors that indicate

Table 1. Rates of "high risk" responses to survey instruments testing exposure to individual risk factors for future violence. For the purposes of this study, "high risk" exposure was defined as responses of ≥4 on a 5-factor Likert scale on at least 50% of items in a given scale.

Risk factor measured	Instrument utilized	Rate of high exposure among ED patients	Individual item responses			
			Most frequently endorsed items:		Least frequently endorsed items:	
Hostile/ aggressive emotions	Product-symptom checklist –	16.5%	"How often do you. . .			
			"Feel easily annoyed or irritated?"	43.2%	"Shout or throw things?"	13.0%
			"Get into frequent arguments?"	20.6%	"Have the urge to beat, injure, or harm someone?"	7.0%
Recent prior violent behavior	Sage baseline survey	7.4%	"When was the last time you. . ."			
			"Watched a fight?"	37.6%	"Used a gun or knife to injure someone?"	3.3%
			"Pushed, grabbed, or shoved someone?"	27.8%	"Threatened someone with a knife or gun?"	5.0%
Perceived probability of violence in 30 days	Sage baseline survey	8.2%	"In the next 30 days, how likely are you to. . ."			
			"Injure someone else in a fight?"	16.0%	"Get injured in a fight?"	4.9%
Peer group violence	Denver youth study	9.9%	"During the past year, how many of your friends have. . ."			
			"Gotten drunk?"	26.5%	"Purposely damaged property that did not belong to them?"	4.2%
			"Carried a gun or knife?"	12.4%	"Been hurt in a fight?"	7.6%
Exposure to community violence	Children's exposure to community violence	24.5%	"How often have you seen or heard the following things around your home and neighborhood?"			
			"I have seen someone arrested"	53.7%	"I have seen someone in my home get shot or stabbed."	4.5%
			"I have heard guns being shot"	47.2%	"My house has been broken into"	10.3%

Table 2. Rates of high exposure to specific violence risk factors as associated with patient race/ethnicity.

	Caucasian N=18	African American N=314	Hispanic N=13	Fisher's exact p-value
Hostile/ aggressive emotions	3 (16.7%)	54 (17.2%)	1 (7.7%)	p=0.86
Recent prior violent behavior	2 (11.1%)	23 (7.3%)	1 (7.3%)	p=0.73
Perceived probability of violence in 30 days	2 (11.1%)	26 (8.3%)	1 (7.7%)	p=0.87
Peer group violence	2 (11.1%)	32 (10.2%)	1 (7.7%)	p=0.89
Community exposure to violence	4 (22.2%)	83 (26.4%	0 (0.0%)	p=0.08

Table 4. Mean age among persons at high versus low risk according to different violence risk factors.

	High risk (95% CI)	Low risk (95% CI)	p-value by t-test
Hostile/ aggressive emotions	20.7 (20.2, 21.2)	21.2 (21.0, 21.4)	0.09
Recent prior violent behavior	21.1 (20.3, 21.9)	21.1 (20.9, 21.3)	0.96
Perceived probability of violence in 30 days	20.7 (19.9, 21.5)	21.1 (20.9, 21.3)	0.26
Peer group violence	20.5 (19.7, 21.2)	21.2 (21.0, 21.4)	0.07
Community exposure to violence	21.0 (20.6, 21.4)	21.1 (20.9, 21.4)	0.58

CI, confidence interval

a patient is high risk for violent injury may result in interventions that target only a small segment of the at-risk population, and that a targeted, uniform screening process may more effectively identify youth who would benefit from a violence-prevention program.

LIMITATIONS

This study is limited by the use of surveys relying on self-report data; we attempted to minimize bias introduced by self-report by providing patient privacy while completing the written survey and by assuring patient confidentiality and protection of patient data.

An additional challenge was presented by the fact that there is no current standardization for defining "high" levels of exposure to each tested risk factor that could be employed evenly across all of the scales. To operationalize risk factor exposure, and to facilitate future research about health consequences of risk factor exposure, the study authors developed a definition that intentionally defines a rather high threshold for a "positive screen." Two less stringent definitions of high risk were also evaluated, but these alternative definitions showed no significant association of any of the risk factors with presentation for injury, suggesting they would be less effective for prediction of future injury. Future research into dose-response effects of risk factor exposure would be vital for violence-protection efforts. Association between self-reported risk factors and presentation for injury may be complicated by the fact that presentation for a violent injury

Table 3. Rates of high exposure to specific violence risk factors as associated with patient gender.

	Male N=211	Female N=152	Chi-square p-value
Hostile/aggressive emotions	41 (19.4%)	19 (12.5%)	p=0.07
Recent prior violent behavior	12 (5.7%)	15 (9.9%)	p=0.13
Perceived probability of violence in 30 days	13 (6.2%)	17 (11.2%)	p=0.08
Peer group violence	17 (8.1%)	19 (12.5%)	p=0.16
Community exposure to violence	43 (20.4%)	46 (30.3%)	p=0.03

Table 5. Association of violence risk factors and demographic variables with presentation for injury in bivariate and multivariate logistic regression models.

Variable	Bivariate odds ratio (95% CI)	Adjusted odds ratio (95% CI)
Age	0.97 (0.80, 1.19)	0.99 (0.81, 1.23)
Male (vs. Female)	0.76 (0.35, 1.61)	0.64 (0.28, 1.43)
Non-black (vs. Black)	0.98 (0.32, 3.05)	1.36 (0.37, 5.05)
hostile/aggressive emotions	3.02 (1.34, 6.83)	3.48 (1.49, 8.13)
Recent prior violent behavior	0.86 (0.18, 4.01)	
Perceived probability of violence in 30 days	1.46 (0.39, 5.48)	
Peer group violence	1.09 (0.35, 3.41)	
Community exposure to violence	1.63 (0.73, 3.65)	

may itself impact likelihood to report aggressive emotions, reported probability of future violence, etc.

Finally, this survey was performed at a single site, which was the ED of an inner-city, urban trauma center. Future studies in other clinical settings would help policymakers and health practitioners understand the degree to which these levels of exposures may be generalized to other geographic and clinical settings.

CONCLUSION

Over 30% of young adults presenting to an urban ED self-reported high exposure to risk factors for violent injury, with the most prevalent exposure being high rates of community violence, as reported by 25.8% of participants. When comparing by demographic categories, male and female patients varied only with respect to exposure to community violence, and we found no significant difference by participant ethnicity. We also found remarkable similarity when comparing participants who were initially seen in the ED for an injury complaint as compared with patients initially seen for a non-injury complaint. These findings suggest that a screening for violence risk factors would provide an important tool to identify and provide prevention services for young adults at risk for violent injury.

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Address for Correspondence: Abigail Hankin, MD, MPH. Emory University, Department of Emergency Medicine, 1364 Clifton Road, NE, Atlanta, GA 30322. Email: ahankin@emory.edu.

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REFERENCES

1. Anon. CDC - WISQARS (Web-based Injury Statistics Query and Reporting System). Available at: http://www.cdc.gov/injury/wisqars/index.html. Accessed October 31, 2009.
2. Centers for Disease control and Prevention. Web-based Injury Statistics Query and Reporting System (WISQRS) [online]. National Center for Injury Prevention and Control, Centers for Disease Control and Preventino [2010 Jun 14]. Available at: www.cdc.gov/injury.
3. Luckenbill DF. Criminal homicide as a situated transaction. *Social Problems*. 1977;25(2):176–186.
4. Sege R, Stringham P, Short S, et al. Ten years after: examination of adolescent screening questions that predict future violence-related injury. *J Adolesc Health*. 1999;24(6):395–402.
5. Herrenkohl TI, Maguin E, Hill KG, et al. Developmental risk factors for youth violence. *J Adolesc Health*. 2000;26(3):176–186.
6. Borowsky IW, Ireland M. Predictors of future fight-related injury among adolescents. *Pediatrics*. 2004;113(3):530.
7. Walls CA, Rhodes KV, Kennedy JJ. The emergency department as usual source of medical care: estimates from the 1998 National Health Interview Survey.*Acad Emerg Med*.2002;9(11):1140–1145.
8. Houry D, Kemball R, Rhodes KV, et al. Intimate partner violence and mental health symptoms in African American female ED patients. *Am J Emerg Med*. 2006;24(4):444–450.
9. D'Onofrio G, Pantalon MV, Degutis LC, et al. Brief Intervention for Hazardous and Harmful Drinkers in the Emergency Department. *Ann Emerg Med*. 2008;51(6):742–750.e2.
10. Zun LS, Downey L, Rosen J. The effectiveness of an ED-based violence prevention program. *Am J Emerg Med*. 2006;24(1):8–13.
11. Dahlberg LL, Toal SB, Swahn MH, et al. *Measuring violence-related attitudes, beliefs, and behaviors among youths: a compendium of assessment tools*. Atlanta: Centers for Disease Control. 2005.
12. Derogatis LR, Rickels K, and Rock A. "The SCL-90 and the MMPI a step in the validation of a new self-report scale" *Br J Psychiatry*, 1976; 19:1–15.
13. Paschall MJ, Flewelling RL. Measuring intermediate outcomes of violence prevention programs targeting African-American male youth: an exploratory assessment of the psychometric properties of six psychosocial measures. *Health Educ Res*. 1997;12(1):117.
14. Flewelling RL, Pashcall MJ, Ringwalt CL. SAGE baseline survey. Research Triangle Park, NC: Research Triangle Institute. *Flewelling, Paschall and Ringwalt*. 1993.
15. Huizinga D, Weiher AW, Espiritu R, et al. Delinquency and crime: Some highlights from the Denver Youth Survey. *Taking stock of delinquency: An overview of findings from contemporary longitudinal studies*. 2003: 47–91.
16. Richters JE, Martinez P. The NIMH community violence project: I. Children as victims of and witnesses to violence. *Psychiatry*. 1993; 56(1):7–21.
17. Houry D, Kaslow NJ, Kemball RS, et al, "Does screening in the Emergency Department Hurt or Help Victims of Intimate Partner Violence?" *Ann Emerg Med*. 2008; 51(4):433–442.
18. Walton MA, Cunningham RM, Goldstein AL, et al. Rates and correlates of violent behaviors among adolescents treated in an urban emergency department. *J Adolesc Health*. 2009; 45(1):77–83.

Screening for Elder Mistreatment among Older Adults Seeking Legal Assistance Services

Sheryl M. Strasser, PhD, MPH* * Georgia State University, School of Public Health, Atlanta, Georgia
Megan Smith, MPH* † East Tennessee State University, College of Public Health, Johnson City, Tennessee
Scott Weaver, PhD*
Shimin Zheng, PhD†
Yan Cao, PhD, MS†

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Introduction: The aging population is a rapidly growing demographic in the United States. Isolation, limited autonomy, and declining physical and mental health render many older adults vulnerable to elder mistreatment (EM). The purpose of this study was to assess the prevalence and correlates of EM among a sample of older adults using legal assistance services in Atlanta, Georgia.

Methods: Researchers administered surveys to consenting older adults (aged 60+) in 5 metro Atlanta community centers that hosted legal assistance information sessions as part of the Elderly Legal Assistance Program. The surveys screened for risk factors and prevalence of EM risk using valid and reliable measures and included additional questions regarding demographics characteristics and healthcare use behaviors.

Results: Surveys were completed by 112 participants. Findings reveal that 32 (28.6%) respondents met the criteria for elder abuse / neglect risk; 17 (15.2%) respondents met criteria for depression; and 105 (93.7%) had visited a healthcare provider during the past 6 months.

Conclusion: The rates of EM risk in this sample were higher than those previously reported in research. Findings support continued examination of unique risks that may be present among older adults who may be possibly facing legal issues. Additionally, the reported frequency of healthcare visits among participants reveals a promising opportunity to examine development of a more widespread EM screening approach to be conducted in non-emergency settings. Interdisciplinary collaboration is required to inform screening approaches that account for complexities that EM cases present. [West J Emerg Med. 2013;14(4):309–315.]

INTRODUCTION

The aging population in America is rapidly increasing. In 2010, an estimated 40 million Americans, or 13%, were age 65 and older.[1] Projections indicate that by year 2050, the aged population will more than double to 88.5 million people, or approximately 20% of the population.[1] This growth can be attributed to the aging of the large "baby-boomer" generation and improvements in medical technology that have contributed to extending the average lifespan.[2,3] As the elderly population increases, so too will the number of people living with chronic illnesses and other risk factors for preventable injury.

One form of preventable injury is elder mistreatment (EM). Estimates of the prevalence of EM range from 4% to 10% in the United States (U.S.), although it is widely accepted that the number of cases reported to Adult Protective Services (APS) is representative of only a small proportion of elders suffering various forms of mistreatment.[4] A recent survey of a national sample of community-dwelling, cognitively intact adults aged 60 and older estimates the 1-year prevalence of

physical, sexual, and emotional abuse, financial mistreatment, and neglect to be 11.4%.[5] Importantly, research has also demonstrated an association between EM and emergency department visits, hospitalization, nursing home placement, and premature mortality.[6–8]

The spectrum of EM (identified as physical, sexual and psychological abuse, as well as neglect and financial exploitation) has been defined by the National Research Council as "intentional actions that cause harm or create a serious risk of harm (whether or not harm is intended) to a vulnerable elder by a caregiver or other person who stands in a trusting relationship to the elder; or failure of a caregiver to satisfy the elder's basic needs or protect the elder from harm."[9] Researchers have dedicated numerous studies to the examination of risk factors associated with EM. The risks for EM have been classified as demographic, physical and mental health, social relationships, as well as having a history of abuse. Risk factors for elder abuse have been identified as older age, co-habitation, cognitive impairment/illness, depression and social isolation.[10–15]

Depression is an especially important risk factor for EM. Symptoms of depression likely will not be overtly disclosed by older adults without direct assessment, as there is a strong stigma associated with mental health issues.[14] Further exacerbating this issue is the widespread social norm of ageism, which upholds that depression is natural at the end of life, among the younger adult generations.[16] Often older people themselves think depression is a natural part of aging and is due to other common physical and social hardships that often accompany aging.[17] Depression is not a normal symptom of aging, and studies show that depression that initially appears later in life is linked to a more chronic course of illness.[18,19]

Although screening for depression typically takes place in a clinical setting, research has demonstrated that community screenings are also feasible and appropriate. In a study conducted by Schonfeld et al[20] a community-based screening and brief intervention among older adult substance users demonstrated that non-clinical research staff were able to administer a range of screens, including measures of mental health and suicidal risk. Additionally, the Harvard National Depression Screening Day Scale (HANDS) instrument used in this EM study was previously found to be effective in assessing depression among people using a community pharmacy.[21]

The purpose of this pilot study was to use valid and reliable screens to estimate the prevalence of EM and depression among older adults using legal assistance services provided by an urban Elder Legal Assistance Program (ELAP) and to identify risk factors associated with EM among this population. The ELAP program is required by federal law, funded primarily by the Older Americans Act and provides adults aged 60 and over with legal representation, information and education in civil legal matters. The program does not base eligibility on a person's income or resources; however, federal law requires that the program direct services to those persons 60 years of age and older who are in the greatest social and/or economic need, limited English-speaking persons, rural or low income minorities.[22]

According to data from FY 2009, the majority of persons served by the ELAP program in the metropolitan Atlanta area (n=698) were black or African American (n=497) or white (n=168). Less than 1% of program participants identified as being Hispanic/Latino or belonging to another race. Of those served, 540 persons were categorized by the program as having an economic need and 203 were categorized as frail or having social need.[23]

Given the vulnerability of the population served by ELAP, there is reason to suspect that the prevalence of EM may be higher among this population. Further, older adults seeking legal assistance may have a higher prevalence of EM, given that EM may be a reason for seeking legal assistance among this population. Depression among those seeking legal advice may also be higher due to stressors and possibly perceived hopelessness faced by those seeking assistance.

We based the conceptual model for exploring risk factors related to EM involved in this study on the Rose and Killien's Risk and Vulnerability Model[24] as applied to elder abuse by Frost and Willette.[25] Vulnerability relates to characteristics of the elder. Items related to vulnerability include age, gender, and the depression scale. Risk refers to hazards or stressors external to the older adult—which is measured by co-habitation. This approach encompasses the major defining theories for causation for elder violence.

METHODS

The pilot study used a cross-sectional survey design. Study subjects were recruited from 5 community centers offering legal assistance information presentations to older adults by representatives of the State of Georgia's Elderly Legal Assistance Program (ELAP) within metro Atlanta over the course of 9 weeks. To enroll the maximum number of participants, eligibility requirements were broad. Study subjects had to be English speaking and at least 60 years of age. This study was reviewed and approved by the university institutional review board of the principal investigator. No incentives were offered for participation.

The questionnaire consisted of measures for depression and EM. We selected HANDS, a 13-item validated screening tool, for its brevity, ease of administration, and sensitivity for major depression and suicide.[26]

Research has also demonstrated that the HANDS instrument is reliable in a community setting.[21] We used the Hwalek-Sengstock Elder Abuse Screening Test (HS-EAST) to identify indications of EM. The HS-EAST is a 15-item instrument containing questions that indicate 3 distinct domains: violation of personal rights or direct abuse, characteristics of vulnerability and potentially abusive situations.[27] Scores of 3 or higher on the HS-EAST have been

shown to be indicative of abuse, neglect and exploitation risk when compared to the non-abused comparison group.[27] The HS-EAST is recognized among EM researchers as a valid screening instrument.[28,29]

Demographic data collected included race, ethnicity, age, gender, marital status, educational attainment, occupational status and living arrangements (living alone vs. cohabitation). Additional information was collected regarding the number of medical and mental health visits in the past 6 months. Study participants were given the option of completing a paper-based or computer-based survey.

We ran descriptive statistics to obtain study sample characteristics. For the purpose of analysis, we recoded the following variables as dichotomous, categorical variables: marital status (married or living with partner v. single), race (white v. another race), employment status (works outside the home v. does not work outside the home), EM (yes v. no) and depression (yes v. no).

We categorized study participants who scored 3 or above on the HS-EAST scale as having a positive screen for EM, while respondents that scored a 9 or above on the HANDS scale were categorized as being depressed. We created the following age categories using continuous data: 60–69, 70–79, 80–89, and 90 or above. Imputation was used to replace missing observations.

We performed chi-square and both univariate and multivariate regression analyses to estimate and test the association between EM and the following covariates: gender, age, race, ethnicity, employment status, cohabitation, depression, number of visits to a healthcare provider in the past 6 months and number of visits to a mental health care provider in the past 6 months.

RESULTS

One hundred and twelve individuals 60 years of age or older, English speaking and attending elderly legal assistance information presentations at metro-Atlanta community centers provided written, signed consent and enrolled in the study. Seventy respondents (62.5%) completed computer-based surveys. The majority of respondents, (n=76, 67.9%) were female, white (n=81, 72.3%), and between the ages of 60 and 79 (n=83, 74.1%). Slightly over half of the sample (n=61, 54.5%) had a high school education or less. Ninety-three respondents (83%) were not employed. More respondents were single (n=60, 60.7%) and reported living with someone else (n=69, 61.2%). Over 16 % (n=17) of the study sample met criteria for depression and 32 (31.1%) met criteria for EM. Table 1 presents the complete demographic profile of the sample.

The majority of participants reported seeing a healthcare provider between 1 and 3 times within the past 6 months (60.7 %). Nearly 22% reported visiting a healthcare provider 4 to 6 times, 11.2%reported visiting a healthcare provider more than 6 times, while 6.5% of participants reported never having visited a healthcare provider within the past 6 months. The large majority of participants reported never having visited a mental health provider within the past 6 months (93.4%), while 6.6% reported having visited a mental health provider between 1 and 3 times within the past 6 months.

Table 1. Sociodemographic profile of study sample of older Americans to screen for prevalence of elder mistreatment.

Characteristic	n (percent)
Age (n=105)	
60–69	40 (38.1)
70–79	36 (34.3)
80–89	27 (25.7)
90 and above	2 (1.9)
Gender (n=107)	
Male	34 (31.8)
Female	73 (68.2)
Race (n=107)	
American Indian/Alaskan Native	5 (4.7)
White	76 (71.0)
Asian	3 (2.8)
Black or African American	23 (21.5)
Ethnicity (n=90)	
Hispanic/Latino	5 (5.6)
not Hispanic/Latino	85 (94.4)
Cohabitation (n=104)	
live alone	40 (38.5)
live with someone else	64 (61.5)
Employment (n=106)	
full-time	9 (8.5)
part-time	10 (9.4)
retired	69 (65.1)
unemployed	7 (6.6)
disabled and unable to work	8 (7.5)
homemaker	3 (2.8)
Marital Status (n=107)	
married or living with partner	42 (39.3)
single/never married	6 (5.6)
divorced or separated	21 (19.6)
widowed	38 (35.5)
Educational Attainment (n=105)	
some middle school	4 (3.8)
middle school	5 (4.8)
some high school	22 (21)
high school	26 (24.8)
some college	18 (17.1)
bachelor degree	17 (16.2)
graduate degree	13 (12.4)

Table 2. Associations of demographic characteristics and risk factors with positive elder mistreatment screens.

Risk Factor	Chi-square	DF†	p-value
Gender	14.027	1	<0.001*
Race	1.623	1	0.203
Ethnicity	5.441	1	0.02*
Age	3.753	3	0.289
Education	0.495	1	0.482
Employment	0.531	1	0.466
Marital status	1.041	1	0.308
Cohabitation	4.388	1	0.036*
Visits to healthcare provider	0.371	3	0.946
Visits to mental health provider	6.457	1	0.011*
Depression	8.62	1	0.003*

* significant association $p \leq 0.05$
† Degrees of freedom

We analyzed the following demographic and risk variables using chi-square to test the association between EM and each of the following variables: sex, race, ethnicity, education, age, employment status, marital status, cohabitation, depression, number of visits to a healthcare provider (physician or nurse practitioner) in the past 6 months and number of visits to a mental healthcare provider (psychiatrist, psychologist or therapist) in the past 6 months. We detected no significant associations between EM and age, marital status, race, employment status, education, or visits to a healthcare provider in the past 6 months.

However, results indicated a significant association between EM and sex, ethnicity, cohabitation and number of visits to a mental health provider (Table 2). A higher proportion of men (56.3% or 18 of 32) met the criteria for EM as compared to women (19.1% or 13 of 68), X^2 (1, 100) =14.027, $p < 0.001$, and of the 5 respondents identifying as Hispanic/Latino, 4 (80%) met the criteria for EM, as compared to 24 of 81 (29.6%) of non-Hispanic/Latino subjects [X^2 (1, 86) = 5.441, p=0.020]. Nearly half (48.3% or 14 of 29) of those who met EM criteria reported living with another person [X^2 (1, 97)=4.388, p=0.036]. Additionally, among the 29 respondents who had a positive screen for EM, 5 (17.2%), reported having had 1–3 visits to a mental health provider within the past 6 months, as compared to 2.9% (2 of 70) of respondents who did not meet criteria for abuse [X^2 (1, 99)=6.457, p=0.011].

We performed univariate logistic regression for those variables that demonstrated statistically significant associations ($p \leq 0.05$) with the independent variable, EM. Results (Table 3) indicate that men in this population were 5 times as likely as women to suffer from or be at risk for EM. Respondents who lived with another person, whether he/she were a spouse, other family member or non-relative were more than twice as likely to suffer or be at risk for abuse/neglect. Depression and number of visits to a mental health provider also increased one's risk of EM.

Table 3. Logistic regressions and predictors for positive elder mistreatment screen.

Covariates	OR	CI	B	Wald	p-value
Sex (male vs. female)	5.44	[2.160–13.699]	1.694	12.917	<0.001
Ethnicity (Hispanic vs. Non-Hispanic)	9.5	[1.01–89.47]	2.251	3.871	0.049
Cohabitation (no vs. yes)	2.571	[1.050–6.299]	0.944	4.269	0.039
Depression (yes vs. no)	5.4	[1.619–18.012]	1.686	7.528	0.006
Visits to mental health provider (1–3 vs. none)	7.08	[1.29–38.95]	1.958	5.067	0.024

OR, odds ratio; *CI,* confidence interval

Lastly, we performed multiple logistic regression analysis, which included those variables that remained significant in the univariate regression analyses: sex, ethnicity, cohabitation, depression and visits to a mental health provider. Using this regression model, cohabitation and visits to a mental health provider were not found to be significant predictors of EM. The final multiple logistic regression model included 3 predictors—sex, ethnicity and depression. Males were 5.5 times more likely to meet have a positive screen for EM than females (odds ratio [OR]: 5.54, confidence interval [CI]: 1.85-16.57, p=0.002), and Hispanic respondents were 11.7 times more likely to have a positive EM screen than their non-Hispanic counterparts (OR: 11.73, CI: 1.06–130.06, p=0.045). Depressed respondents were 6 times more likely to have a positive EM screen than their non-depressed peers (OR: 6.07, CI: 1.54-23.09, p=0.01). Results are presented in Table 4.

DISCUSSION

In this cross-sectional survey of older adults attending legal assistance presentations, we found that nearly one-third of our sample met criteria for EM, which is higher than more modest estimates in the general U.S. population ranging from

Table 4. Multiple logistic regression results.

Covariates	OR	CI	b	Wald	p-value
Sex (male vs. female)	5.536	[1.85-16.57]	1.711	9.36	0.002
Ethnicity (Hispanic vs. Non-Hispanic)	11.73	[1.06–130.06]	2.46	4.02	0.045
Depression	6.07	[1.54-23.09]	1.8	4.02	0.01

OR, odds ratio; *CI,* confidence interval

4–11%.[4,5] However, this result serves to confirm our hypothesis that older adults seeking legal services may have a higher prevalence of EM either because EM has led them to seek legal advice or their legal situation has contributed to their vulnerability and put them at greater risk for EM.

Study findings were also different from EM literature concerning demographic risk factors. While other studies indicate that older elderly people are at a greater risk of or abuse and neglect than the younger old, no differentiation of EM by age was found in this sample.[10,33] Further, men in this study sample were over 5 times more likely to meet EM criteria than females. While other studies have indicated women are at a greater risk of abuse than men,[8,34] Pillemer and Finkelhor[13] found that men in their random survey study were more likely to be victims of EM.

Other research has indicated that poorer physical and mental health may put elderly at risk;[33] however, our findings indicated that mental health and not physical health was a predictor of EM/EM risk. Depression, and other mental health issues, as implied by the number of visits to a mental health provider in the past 6 months in this study, as well as cohabitation have all been identified as risk factors in the literature. While depression was a significant predictor of EM/EM risk in this study, neither visits to a mental health provider or cohabitation were found to predict EM/EM risk in the multivariate analyses.

We also found that Hispanics/Latinos in this study were substantially more likely than non-Hispanics to meet EM criteria. Examination of EM within Hispanic/Latino communities in the U.S. is gaining attention. In a recent study by DeLiema et al[35] in a randomized community sample of 200 Latinos in Los Angeles, 2 out of 5 older adult Latinos reported abuse in the last year, and among those, 22% of the abuse was categorized as "severe," While the number of Hispanics/Latinos respondents included in this study was very small, this finding highlights the need to further investigate unique interpersonal dynamics and risk factors for EM that may exist in this subpopulation. Because Hispanic/Latino older adults have historically been underrepresented in EM research, explanations for this significant disparity are not readily available.

The differences in our study findings may be due to several factors. First, this study used the HS-EAST instrument, which is not widely used in EM-prevalence studies. Because the instrument was developed for administration by non-clinical professionals, the domains and items may not reflect highly specific measures of EM and thus, there is a potential for over-estimation of EM risk. The high prevalence among this sample may also be attributed to the unique circumstances of the study setting. Older adults attending legal presentations may be different than the general older adult population. For these individuals, there may be underlying legal stressors that may lead to strained personal situations, mental distress, depression, and ultimately, violent relationships. The cumulative burden of these stressors may likely place this vulnerable population segment at risk for being the target of abuse by someone who perceives the pending legal matters as "hopeless," Older adults who are receiving legal services may be in a help-seeking mode; therefore, they are reaching out for services that potentially could assist in address legal problems they face.

Overall, our study findings highlight the need for more robust, sophisticated research that can examine issues related to EM among community-dwelling older adults who may be facing legal issues. The legal circumstances in which clients seek ELAP services may offer an explanation for our high rates of EM/EM risk and depression. Since the prevalence of those who were depressed was much higher than those visiting mental health providers, it is likely that many in the study population needed but were not receiving treatment for depression and therefore at a greater risk for EM.

LIMITATIONS

This study was based on a small and homogenous sample and was further limited by the voluntary nature of the survey; therefore, the answers provided by the respondents may not be indicative of the non-respondents. The results from this study are not generalizable to other older adults who may be seeking legal advice or assistance as a convenience sampling methodology was employed. Additionally, while findings indicate a number of statistically significant associations, temporal ordering is not possible due to the cross-sectional nature of data collected. Additionally, this study used proxy measures for physical and mental health status, number of visits to a healthcare provider and number of visits to a mental health provider. While it stands to reason that high healthcare utilization would be associated with poorer health among older adults, and there is research to support this,[36] using healthcare visits as proxy measures does not take into account older adults who may be in need of, but not receiving healthcare for physical or mental health issues. Finally, this study captured respondents' self-reported answers, not actual behaviors or occurrences of EM. Nonetheless, these findings provide insight into avenues for future research that probes EM risks more profoundly.

CONCLUSION

Elder mistreatment is complex and continued research that advances our understanding of risk factors is essential for prevention efforts. More collaboration among professionals from diverse disciplines who play a role in EM identification and resolution is needed. Professionals trained in law, criminal justice, social services, and mental health may potentially be involved in EM case detection, management, and resolution.[36–42] Traditionally the responsibility for recognizing, identifying, and responding to EM has been assumed primarily by healthcare professionals. Jones et al[43] determined that the majority of cases are detected by clinicians during urgent care visits. However,

through effective screening, EM may be detected before it escalates to a need for emergency medical attention.

The early detection of EM relies heavily on professionals who may interact with older adults earlier than those in urgent healthcare settings, such as primary care physicians, social workers, bankers, lawyers, mental health professionals, and law enforcement. Professionals on the frontline of initial case reporting must receive adequate training to improve identification of signs and symptoms of EM. Enhanced screening and professional collaborations can flourish when EM policies are responsive to scientific evidence that reveal individual-level vulnerabilities and external risk factors for violence.

Given the exponentially growing older adult segment of the United States, the number of adults who may become victims of violence will likely increase until more sensitive, widespread screening is developed and implemented. Progressive national policies responsive to these trends can foster guidelines and screening practices that proactively prepare professionals to identify older adults most at risk for EM. Professionals practicing in the community, such as law enforcement, social services, law, and banking among others, may provide important early screening for EM risks that are frequently associated with victimization. Enhancing the recognition and collaborative partnerships among professionals provide a promising structure (opportunity) for resolving increasingly difficult situations for older adults.

Address for Correspondence: Sheryl M. Strasser, PhD, MPH, MSW, MCHES, School of Public Health, Georgia State University, 140 Decatur Street, Room 847, Atlanta, GA 30303. E-mail: sstrasser@gsu.edu.

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REFERENCES

1. Vincent GK, Velkoff V. The next four decades: the older population in the United States 2010 to 2050. Available at: http://www.census.gov/prod/2010pubs/p25-1138.pdf. Accessed January 11, 2010.
2. Daichman LS, Aguas S, Spencer C. Elder abuse. In: Heggenhougen K, Quah, S, eds. *International Encyclopedia of Public Health*. Vol 2. San Diego: Academic Press;2008:310–315.
3. Dauenhauer, JA, Mayer KC, Mason A. Evaluation of adult protective services: perspectives of community professionals. *J Elder Abuse Negl*. 2007;19:41–57.
4. Taylor DK, Bachuwa G, Evans J, Jackson-Johnson V. Assessing barriers to the identification of elder abuse and neglect: a communitywide survey of primary care physicians. *J Natl Med Assoc*. 2006;98(3):403–4.
5. Acierno R, Hernandez MA, Amstadter AB, Resnick HS, Steve K, Muzzy W, Kilpatrick DG. Prevalence and correlates of emotional, physical, sexual, and financial abuse and potential neglect in the United States: the national elder mistreatment study. *Am J Public Health*. 2010;100(2): 292–297.
6. Cooper C, Selwood A, Livingston G. The prevalence of elder abuse and neglect: a systematic review. *Age Ageing*. 2008;37(2):151–160.
7. Bonnie RJ, Wallace RB, eds. *Elder Mistreatment: Abuse, Neglect, and Exploitation in an Aging America. National Research Council (US) Panel to Review Risk and Prevalence of Elder Abuse and Neglect*;Washington (DC): National Academies Press (US);2003.
8. Dunlop BD, Rothman MB, Condon KM, et al. Elder abuse: risk factors and use of case data to improve policy and practice. *J Elder Abuse Negl*. 2001;12(3):95.
9. Pillemer K, Finkelhor D. The prevalence of elder abuse: a random sample survey. *Gerontologist*. 1988;28(1):51–57.
10. Dyer CB, Pavlik VN, Murphy KP, Hyman DJ. The high prevalence of depression and dementia in elder abuse or neglect. *J Am Geriatr Soc*. 2000;48(2):205–208.
11. Pillemer K, Finkelhor D. Causes of elder abuse: caregiver stress versus problem relatives. *Am J Orthopsychiatry*. 1989;59(2):179–187.
12. Alexopoulos GS, Bruce ML, Hull J, et al. Clinical determinants of suicidal ideation and behavior in geriatric depression. *Arch. Gen. Psychiatry*. 1999;56(11):1048–1053.
13. Lachs MS, Williams C, O'Brien S, Hurst L, Horwitz R. Risk factors for reported elder abuse and neglect: a nine-year observational cohort study. *Gerontologist*. 1997;37(4):469–474.
14. Choi NG, Jun J. Life regrets and pride among low-income older adults: relationships with depressive symptoms, current life stressors and coping resources. *Aging Ment Health*. 2009;13:213–225.
15. Centers for Disease Control and Prevention. Healthy aging: depression is not a normal part of growing older. Available at: http://www.cdc.gov/aging/mentalhealth/depression.htm. Accessed January11, 2010.
16. Feldman EL, Jaffe A, Galambos N, et al. Clinical practice guidelines on depression: awareness, attitudes, and content knowledge among family physicians in New York. *Arch Fam Med*. 1998;7(1):58–62.
17. Lebowitz BD. Diagnosis and treatment of depression in late life. Consensus statement update. *J Amer Med Assoc*. 1997;278(14):1186–1190.
18. Schonfeld L, King-Kallimanis BL, Duchene DM, et al. Screening and brief intervention for substance misuse among older adults: the Florida BRITE project. *Am J Public Health*. 2010;100(1):108–114.
19. Rose MH, Killien M. Risk and vulnerability: a case for differentiation. *Adv Nurs Sci*. 1983;5(3):60–73.
20. Frost MH, Willette K. Risk for abuse/neglect: documentation of assessment data and diagnoses. *J Gerontol Nurs*. 1994;20(8):37–45.
21. Baer L, Jacobs DG, Meszler-Reizes J, et al. Development of a brief screening instrument: the HANDS. *Psychother Psychosom*. 2000;69(1): 35–41.
22. Neale AV, Hwalek MA, Scott RO, et al. Validation of the Hwalek-

Sengstock elder abuse screening test. *J Appl Gerontol*. 1991;10(4): 406–418.
23. Daly JM, Jogerst GJ. Readability and content of elder abuse instruments. *J Elder Abuse Negl*. 2005;17(4):31–52.
24. Fulmer T, Guadagno L, Bitondo Dyer C, et al. Progress in elder abuse screening and assessment instruments. *J Am Geriatr Soc*. 2004;52(2): 297–304.
25. Comijs HC, Pot AM, Smit JH, et al. Elder abuse in the community: prevalence and consequences. *J Am Geriatr Soc*. 1998;46:885–888.
26. Ogg J, Bennett G. Elder abuse in Britain. *BMJ*. 1992;305:988–989.
27. Podnieks E. National survey on abuse of the elderly in Canada. *J Elder Abuse Negl*. 1992;4:5–58.
28. Gorbien MJ, Eisenstein AR. Elder abuse and neglect: an overview. *Geriatr Med*. 2005;21: 279–292
29. Comijs HC, Smit JH, Pot AM, et al. Risk indicators of elder mistreatment in the community. *J Elder Abuse Negl*. 1998;9:67–76.
30. World Health Organization. Abuse of the elderly. Available at: http://www.who.int/violence_injury_prevention/violence/global_campaign/en/elderabusefacts.pdf. Accessed December 11, 2012.
31. DeLiema M, Gassoumis ZD, Homeier DC, et al. Determining Prevalence and correlates of elder abuse using promotores: low-income immigrant Latinos report high rates of abuse and neglect. J Amer Geriatr Soc. 2012;60(7):1333–1339.
32. Ciccarello MJ. Recent legal trends affecting your older patients. *Clin Obstet Gynecol*. 2007;50:790–799.
33. Choi NG, Mayer J. Elder abuse, neglect, and exploitation. *J Gerontol Soc Work*. 2000;33:5–25.
34. Lachs, MS, Pillemer K. Elder abuse. *Lancet*. 2004;364:1263–1272.
35. Payne, BK. *Crime and elder abuse: an integrated perspective*. Springfield, IL: Charles C Thomas;2005.
36. Strasser SM, Kerr J, King P, et al. A survey of Georgia adult protective service staff: implications for older adult injury prevention and policy. *West J Emerg Med*. 2011;12(3):357–364.
37. Strasser S, O'Quin K, Price T, et al. Older adults with intellectual disabilities: targets for increasing victimization, a call for a preemptive screening policy. *J Ment Health Res Intellect Disabil*. 2012;5(2):157–167.
38. Jones J, Dougherty JD, Schelbie D, et al. Emergency department protocol for the diagnosis and evaluation of geriatric abuse. *Ann Emerg Med*. 1998;17:1006–1015.

Dyadic, Partner, and Social Network Influences on Intimate Partner Violence among Male-Male Couples

Rob Stephenson, PhD
Kimi N. Sato, MPH
Catherine Finneran, MPH

Rollins School of Public Health, Hubert Department of Global Health, Atlanta, Georgia

Supervising Section Editor: Abigail Hankin, MD, MPH
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Introduction: Despite a recent focus on intimate partner violence (IPV) among men who have sex with men (MSM), the male-male couple is largely absent from the IPV literature. Specifically, research on dyadic factors shaping IPV in male-male couples is lacking.

Methods: We took a subsample of 403 gay/bisexual men with main partners from a 2011 survey of approximately 1,000 gay and bisexual men from Atlanta. Logistic regression models of recent (<12 month) experience and perpetration of physical and sexual IPV examined dyadic factors, including racial differences, age differences, and social network characteristics of couples as key covariates shaping the reporting of IPV.

Results: Findings indicate that men were more likely to report perpetration of physical violence if they were a different race to their main partner, whereas main partner age was associated with decreased reporting of physical violence. Having social networks that contained more gay friends was associated with significant reductions in the reporting of IPV, whereas having social networks comprised of sex partners or closeted gay friends was associated with increased reporting of IPV victimization and perpetration.

Conclusion: The results point to several unique factors shaping the reporting of IPV within male-male couples and highlight the need for intervention efforts and prevention programs that focus on male couples, a group largely absent from both research and prevention efforts. [West J Emerg Med. 2013;14(4):316–323.]

INTRODUCTION

Programmatic efforts and research studies of intimate partner violence (IPV) have long focused on female victim – male perpetrator models, almost to the exclusion of both male victims and IPV within same-sex relationships. Recently, studies have begun to look at intimate partner violence (IPV) among men who have sex with men (MSM): MSM refers to the behavior of same-sex male sexual behavior, and is not linked to a sexual identity such as gay or bisexual. Studies of IPV among MSM have found both a similarly high prevalence to that observed among heterosexual women, and that IPV among MSM occurs at significantly higher rates in comparison to heterosexual men.[1,2] Studies focusing specifically on gay and bisexual men have found that approximately 25–50% of gay and bisexual men in the U.S. report experiencing physical IPV, while 12–52% report experiencing sexual IPV.[1,3–5] Tjaden et al,[4] showed that 21.5% of men reporting a history of cohabitation with a same-sex partner reported experiencing physical abuse in their lifetimes in comparison to 7.1% of men with a history of opposite-sex cohabitation. There is evidence that MSM – and gay/bisexual men – are especially at risk for IPV over their lifetimes, and that the risks of experiencing IPV are higher among MSM of color, human immunodeficiency virus (HIV)-positive men, and MSM with lower levels of education.[6–10] Several studies have also found associations between IPV and sexual risk-taking and increased risk of HIV

acquisition among MSM.[9,11] Many studies have examined how dyadic characteristics of heterosexual couples shape the risk of IPV and how the risk of IPV is influenced by patterns of social support. Despite the comparably high rates of IPV in male-male couples (which may consist of combinations of MSM and gay and bisexual men), there is a dearth of studies that have examined how partner and dyadic characteristics and the social network characteristics of the individual shape the experience of IPV among male-male couples.[12–14]

The existing evidence suggests that IPV affects approximately one quarter to one half of all same-sex relationships.[15–18] The National Coalition of Anti-Violence Programs reported 6,523 cases of IPV in lesbian, gay, bisexual, and transgender (LGBT) relationships in 2003, with most cases (83%) occurring in gay and lesbian relationships.[19] Physical abuse seems to occur in a significant portion of abusive same-sex relationships. Elliot[20] and De Vidas[21] suggest that between 22–46% of lesbians have been in relationships in which physical violence has occurred. McClennen et al,[22] using a sample of 63 gay men, found that participants were often physically struck by their partners, while Greenwood et al[6] reported that 22% of a sample of MSM had been subjected to physical abuse from an intimate partner. Research also indicates that sexual abuse is common in IPV-afflicted same-sex relationships. Walder-Haugrud and Gratch[5] reported that 52% of their sample of gay men experienced one or more incidents of sexual abuse. Similarly, Toro-Alfonso and Rodriques-Madera[23] found that approximately 25% of a sample of Puerto Rican gay males had experienced sexual coercion. Clearly, a large number of same-sex relationships experience IPV, and the levels experienced appear to be similar, if not higher, than those seen in heterosexual couples.[20]

Capaldi et al[24] conducted a systematic review of 228 IPV-focused research articles and found that social support characteristics and the behaviors and characteristics of main partners were a strong influence on the experience of IPV. However, none of the studies that focused exclusively on same-sex couples met the criteria for inclusion in the systematic review, due primarily to small sample sizes, and only 2 of the studies included in the review had samples that contained both heterosexual and same-sex relationships, pointing to the lack of research examining dyadic or social support influences on IPV among same-sex couples.[25,26] In terms of dyadic influences on IPV, among heterosexual populations a number of studies suggest that the experience of IPV decreases as the age of the partner increases, while others have shown that education and income, in particular dyadic differences in education and income, are significantly associated with the risk of IPV among heterosexual couples.[27–29] Additionally, economic stress has been shown to be a major risk factor for IPV among heterosexual couples: in a cross-sectional study of men and women in the U.S. Air Force, researchers found that financial stress was a significant predictor of both men's and women's perpetration of IPV.[30] Main partners who were exposed to violence as a child, either witnessing parental IPV or experiencing early childhood abuse, have also been shown to report higher levels of violence in their relationships.[31]Although these findings suggest that partner characteristics play an important role in the experience of IPV among heterosexual couples, information on what these characteristics look like in male-male couples is lacking. Furthermore, the majority of the research on partner characteristics involves individual-level data rather than couple-level data, thus largely ignoring how *differences* in dyadic characteristics (e.g. age or educational differences) may influence the risk of IPV.

Several studies have shown that social isolation or lack of social support is a significant risk factor for experience and perpetration of IPV among heterosexual populations.[25,32,33] Lanier and Maume found that women in rural and urban areas of the U.S. with greater levels of social support and social interaction were less likely to experience IPV.[32] Similarly, Van Wyk et al[33] found that women living in economically disadvantaged neighborhoods and those receiving less social support were at a greater risk of IPV. For MSM, or gay and bisexual men, social networks may influence the risk of IPV through the provision of social support, increasing access to services and resources, by providing access to role models in the forms of successful relationships, and through the provision of social acceptance through normalizing the presence of same-sex couples in a heterosexually-dominated society.[34–36] However, research on social networks and social support among MSM has focused almost exclusively on the influence of social networks in shaping sexual risk taking and risk of HIV, and we find no studies that have examined how social support or social networks shape the risk of IPV among male-male couples.[37,38]

The majority of studies of IPV among MSM have focused on prevalence and individual-level risk factors for IPV.[17–23] To date, research has largely ignored the role of dyadic characteristics in shaping the risk of IPV among male couples, and has overlooked how the risk of IPV may be shaped by the size and composition of an individual's social network. In this study, we examine how dyadic characteristics, dyadic differences and the size and composition of social networks influence the reporting of recent physical and sexual IPV among a sample of 403 gay and bisexual men with main partners in Atlanta, Georgia. This new information has the potential to inform the development of culturally appropriate interventions tailored to the unique contexts of male-male couples, a population largely overlooked in current research and prevention efforts.

METHODS

Emory University's institutional review board approved this study. Between September–December 2011, participants were recruited into the study using venue-based sampling.

Venue-based sampling is a derivative of time-space sampling, in which sampling occurs within prescribed blocks of time at particular venues. As a method to access hard-to-reach population, venue-based recruitment is a process in which a sampling frame of venue-time units is created through formative research with key informants and community members. After creating a list of potential venues where the target population is reported to be more prevalent than in the general community, researchers visit each venue at the times it is reported to be active (for example, Thursdays from 9PM–1AM) to confirm that the venue is active at those times and the population in question accesses the venue; this venue-time unit is then added to the sampling frame. In order to reach a diverse population of gay and bisexual men in the Atlanta area, the venue sampling frame used for this study consisted of a wide variety of gay-themed or gay-friendly venues, including Gay Pride events, gay sports teams events, gay fundraising events, downtown areas, gay bars, bathhouses, and an AIDS service organization. All venues were within the Atlanta Metropolitan area. The sampling frame used in this study contained over 160 venue-time units, and was updated monthly as venues closed or as new venues became available. A randomized computer program assigned venue-time units monthly, with at least one recruitment event per day.

During recruitment, 2 or more study recruiters wearing study t-shirts stood adjacent to the venue during the time period prescribed by the computer program. Recruiters then drew an imaginary line on the ground and then approached every *n*th man who crossed it; *n* varied between 1 and 3 depending on the volume of traffic at the venue. After introducing him/herself, the recruiter would ask if the man was interested in seeing if he was eligible for a research study. If he agreed to be screened, he was then asked a series of 8 questions to assess his eligibility, including his sexual orientation, recent sex with a man, race, age, and residence in the Atlanta Metro Area. Responses for all persons were recorded on palm-held computers, including whether or not a person agreed to be screened for eligibility. Eligible men were then read a short script that described the study process: a web-based survey approximately 20 minutes in length that could be completed at home, or, in the case of 5 venues (the AIDS service organization, the drop-in center, Atlanta Pride, In the Life Pride, and a National Coming Out Day event), at the venue itself on a tablet computer. Men interested in study participation were then given a card with a web address and a unique identifier that would link their recruitment data to their survey data. Participants who completed the survey at the venue were compensated with a gift card; participants who completed the survey at home were compensated with the same value of gift card sent to them electronically.

The self-administered, web-based survey contained several domains of questions regarding demographics, recent sexual behavior with male partners, intimate partner violence (IPV), couples' coping and communication, social network characteristics, and minority stress (e.g., internalized homophobia). Of 4,903 men approached, 2,936 (59.9%) agreed to be screened for the study. Of these, 2,093 (71.3%) were eligible for study participation. Men were eligible for study participation if they reported being 18 years of age or older, being male, identifying as gay/homosexual or bisexual, living in the Atlanta Metropolitan Area, and having had sex with a man in the previous 6 months. Of eligible participants, 1,965 (93.9%) were interested in study participation. A total of 1,075 men completed the survey; thus 21.9% of men approached and 51.4% of eligible men completed the survey. Approximately one third (33.7%) completed the survey at a venue, while the remaining two thirds (66.3%) of respondents completed the survey at home. Of the 1,075 men who completed the survey, approximately half (49.3%) reported having a main partner *("Are you currently in a relationship with a male partner? Is this male partner someone who you feel committed to above all others? You might call this person a boyfriend, life partner, husband, or significant other.")*. Of the men who responded that they had a main partner, 403 had complete data for all covariates of interest and were included in the final analysis sample (Table 1).

Survey participants were assessed for recent intimate partner violence from a male partner, either physical (*"In the last 12 months, have any of your partners ever tried to hurt you? This includes pushing you, holding you down, hitting you with a fist, kicking you, attempting to strangle you, and/or attacking you with a knife, gun or other weapon"*) or sexual ("*In the last 12 months, have any of your partners ever used physical force or verbal threats to force you to have sex when you did not want to?"*). We used the same questions to measure perpetration of IPV in the last 12 months. The analysis examines 4 outcomes, each of them self-reported: experience of physical violence, experience of sexual violence, perpetration of physical violence, and perpetration of sexual violence in the 12-month period prior to the survey. We grouped covariates of interest into 3 categories: dyadic differences, main partner characteristics, and social network characteristics. The dyadic differences consisted of differences in race, education, differences in sexual orientation, and the age difference between the main partner and the participant. The main partner characteristics consisted of covariates related to the participant's main partner including race, age, and their sexual orientation.

To capture data on social networks, we asked respondents about up to 5 of their closest friends, who were classified as "*people that you talk to at least once a month*." Respondents were asked to provide the age, gender, perceived sexual orientation, whether their friend was out to others if they were gay or bisexual, and relationship status of each of the friends they listed. To measure the age difference within the network of friends, the average age of the network was subtracted from the

Table 1. Distribution of covariates used in final models among men with main partners (n=403).

Exposure	Mean/Range	%
Respondent characteristics		
Age	36.1 (18–71)	–
Race		
White	–	59.8
Black	–	25.6
Latino/Other	–	14.6
Sexual orientation		
Homosexual/Gay	–	93.6
Bisexual	–	6.5
Human immunodeficiency virus status		
Negative	–	72.7
Education level		
High school or less	–	16.1
Some college or 2-year degree	–	29
College or more	–	54.8
Employment status		
Employed	–	83.9
Social network characteristics		
Network age difference ratio		
3.4 or more years younger	–	29
3.25-0.2 years younger	–	18.6
Same age to 3 years older	–	28.8
3.2 or more years older	–	23.6
Proportion of network comprised of friends in the closet	0.1 (0–1)	–
Proportion of network comprised of sex partners	0.1 (0–1)	–
Proportion of network comprised of gay friends	0.7 (0–1)	–
Proportion of network comprised of out gay friends	1.0 (0–1)	–
Proportion of network comprised of straight friends in relationships	0.2 (0–1)	–
Proportion of network comprised of gay friends in relationships	0.3 (0–1)	–
Proportion of network comprised of friends of the same race	0.8 (0–1)	–
Main partner characteristics		
Main partner age	35.9 (16–73)	–
Main partner race		
White	–	60.1
Black	–	27.5
Latino/Other	–	12.4
Main partner sexual orientation		
Homosexual/Gay	–	92.8
Bisexual	–	5.2
Heterosexual/Straight/Unsure/ Questioning/Other/Don't know	–	2
Dyadic characteristics		
Age difference between respondent and main partner		
Main partner 5+ years younger	–	25.6
Main partner 1–4 years younger	–	22.1
Main partner same age to 4 years older	–	27.8
Main partner 5+ years older	–	24.6
Same race	–	67.7
Same sexual orientation	–	88.6

respondent's age and then categorized into 4 categories based on the distribution of the quartiles: 3.4–2 years older, 3.25–0.2 years older, 0–3 years younger, and 3.2 years or more younger than the respondent. The analysis also considered the proportion of the respondent's network that was comprised of gay friends, gay friends in relationships, closeted gay friends, out gay friends, straight friends in relationships, and sexual partners. The analysis also considered the number of friends with the same race as the respondent. For individual characteristics, the analysis considered education, employment, age (continuous variable), race (white, black/African American, or Latino/other), sexual orientation (homosexual/gay or bisexual) and HIV status (positive, negative or unknown/never been tested).

We analyzed the data using STATA 12. Using a backwards stepwise procedure, we created 4 separate logistic regression models for the 4 outcomes of interest. In each model, we included individual characteristics, dyadic differences, main partner characteristics and social network characteristics.

RESULTS

The sample of 403 participants reflected a diverse sample with 59.8% white non-Hispanic, 25.6% black/African-American, and 14.6% Latino/other. In addition, 54.8% reported having a college education or more, 29.0% reported some college or a two-year degree, and 16.1% reported a high school education or less. The mean age was 36.1 years (18-71years) with the majority reporting homosexual/gay sexual orientation (93.6%), negative HIV status (72.7%), and current employment (83.7%). Reporting of physical IPV was higher than sexual IPV: 10.2% of respondents reported experiencing physical IPV in the last 12 months, while 4.8% reported perpetrating physical IPV. Fewer participants reported experiencing (3.7%) or perpetrating (3.5%) sexual IPV (Figure).

The results of the logistic models are shown in Table 2. Of the demographic variables, only age, race and employment status were found to be associated with 2 of the 4 outcomes.

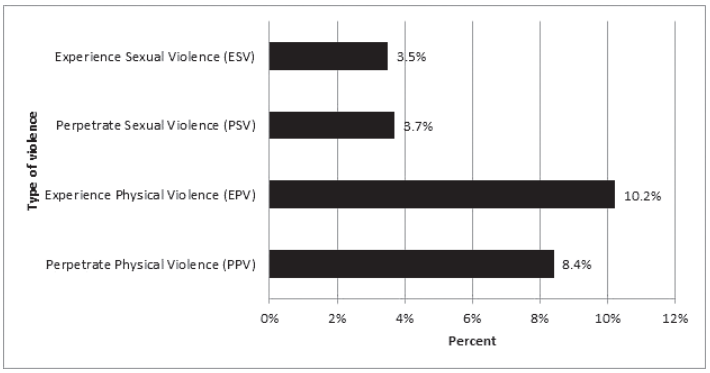

Figure. Reported prevalence of experience or perpetration of physical and sexual intimate partner violence among gay/bisexual men with main partners (n=403).

Older men were significantly less likely to report perpetration of physical violence (odds ratio [OR]: 0.92, 95% confidence interval [CI]: 0.88, 0.97). Black/African American men were 7.91 times (95% CI: 1.45, 43.23) more likely to report perpetration of sexual violence when compared to white men. Unemployed men had significantly higher odds of reporting recent perpetration of sexual violence (OR 3.65, 95% CI: 1.03, 12.89) than employed men.

Of the dyadic factors, men who were the same race as their main partner had significantly lower odds of reporting perpetration of physical violence towards their partner in the past year compared to men in inter-racial dyads (OR 0.32 95% CI: 0.14, 0.73). Of the main partner characteristics, only the main partner's age was found to be associated with experience of physical violence: men with older main partners were significantly less likely to report experiencing physical IPV.

Several social network factors were significantly associated with IPV. The greater the proportion of their network that was comprised of closeted gay friends, the more likely they were to report experience of sexual violence (OR: 8.90, 95% CI: 1.46, 54.37). Conversely, the greater the proportion of their network that was comprised of openly gay friends, the less likely they were to report perpetration of sexual violence (OR: 0.12, 95% CI: 0.02, 0.75). Men whose social networks had a high proportion of sex partners were more likely to report perpetration of physical violence (OR: 4.47, 95% CI: 1.11, 17.94) and sexual violence (OR: 8.85, 95% CI: 1.45, 54.09). Respondents whose social network was on average slightly younger than them (0.2–3.25 years) were significantly less likely to report experiencing physical IPV (OR: 0.28 95% CI 0.08, 0.89).

DISCUSSION

Studies of IPV among gay and bisexual men are relatively new, at least relative to the wealth of studies on male-female IPV, and previous studies have shown rates of male-to-male IPV ranging between 11% and 44%.[39] The results presented here show slightly lower levels of physical IPV than have been shown in some previous studies, yet show relatively high levels of reporting of the experience of and perpetration of sexual IPV: interestingly, similar percentages of participants reported experience or perpetration of sexual IPV. The present analyses are unique in their focus on IPV among male-male dyads (which may include both MSM and gay and bisexual men), and the inclusion of covariates beyond the individual level to include dyadic differences, partner characteristics, and social network size and composition.

The factors that were significantly associated with the reporting of IPV among male-male couples highlight the potential role of minority stress in shaping the risk of experience or perpetration of violence among male-male couples. Respondents who identified as a racial minority (black/African American) or experienced financial stress (unemployed men) were more likely to report increased perpetration of sexual IPV. Lower levels of income may be reflective of a lack of access to social capital and resources, creating an economic stress that manifests as perpetration of or vulnerability to IPV. Men who identify as a racial minority may face stress through exposure to racism, both in the LGBT community and beyond, or through increased levels of homophobia known to exist in communities of color in the U.S.[44,45] However, the sample for this study was predominantly white, with too few numbers in each of the ethnic and racial groups to allow a deeper investigation other than white versus other of the racial differences in IPV among participants (as noted by the large confidence intervals around estimate for black/ African American men).

At the dyadic level, being in an inter-racial dyad was associated with increased levels of perpetration of physical IPV. Again, the suggested causal pathway lies in the stress that may be placed on the relationship due to either perceived or experienced racism or homophobia in the LGBT community or communities of color. Related to the main partner characteristics, the main partner's age was found to be significantly associated with a reduction in experiencing physical IPV. This finding is similar to studies of heterosexual couples, where violence decreases as the main partner's age increases.[27,28]

The majority of the research on the social networks of gay and bisexual men has focused on how social networks influence sexual risk-taking behaviors.[34–36] The results of this study suggest a role for minority stress in explaining how social networks shape the risk of IPV within male-male couples. Men with more closeted gay friends in their network were more likely to experience sexual violence, and men with more sex partners in their network were more likely to perpetrate physical and sexual violence. The latter result is similar to other studies that have linked perpetration of violence to a greater number of sexual partners among heterosexual individuals.[40,41] Both of these results could be interpreted as minority stress: men whose social networks are primarily composed of closeted

Table 2. Backwards Stepwise Logistic Regression modeling of experience and perpetration of physical and sexual intimate partner violence among gay/bisexual men with main partners (n=403).

Exposure	Experience physical violence OR (95% CI)	Experience sexual violence OR (95%)	Perpetrate physical violence OR (95%)	Perpetrate sexual violence OR (95%)
Age				
Age	0.69 (0.21, 2.31)	0.97 (0.91, 1.03)	*0.92 (0.88, 0.97)**	0.98 (0.93, 1.04)
Race				
White	1.00	1.00	1.00	1.00
Black	1.51 (0.66, 3.45)	2.33 (0.59, 9.18)	0.99 (0.41, 2.41)	*7.91 (1.45, 43.23)**
Latino/Other	1.03 (0.35, 3.08)	1.33 (0.22, 8.20)	0.62 (0.18, 2.07)	5.94 (0.91, 38.97)
Sexual orientation				
Homosexual/Gay	1.00	1.00	1.00	1.00
Bisexual	0.69 (0.21, 2.31)	0.42 (0.05, 3.77)	1.49 (0.45, 4.91)	0.72 (0.12, 4.17)
HIV status				
Negative	1.00	1.00	1.00	1.00
Positive/Never tested/unknown	0.55 (0.24, 1.30)	0.63 (0.16, 2.45)	0.68 (0.27, 1.70)	0.78 (0.22, 2.75)
Education				
High school or less	1.00	1.00	1.00	1.00
Some college or 2-year degree	1.03 (0.42, 2.53)	2.44 (0.57, 10.34)	1.50 (0.55, 4.10)	1.53 (0.39, 6.02)
College or more	0.40 (0.15, 1.11)	0.45 (0.06, 3.41)	0.50 (0.16, 1.59)	0.41 (0.06, 2.95)
Employment status				
Employed	1.00	1.00	1.00	1.00
Unemployed	0.74 (0.28, 2.00)	2.78 (0.74, 10.44)	0.60 (0.19, 1.89)	*3.65 (1.03, 12.89)**
Social network characteristics				
Network age difference ratio				
3.4 or more years younger	1.00	–	–	–
3.25-0.2 years younger	0.28 (0.08, 0.89)*	–	–	–
Same age to 3 years older	0.73 (0.30, 1.77)	–	–	–
3.2 or more years older	0.71 (0.22, 2.24)	–	–	–
Proportion of network comprised of friends in the closet	–	*8.90 (1.46, 54.37)**	–	–
Proportion of network comprised of sex partners	–	–	*4.47 (1.11, 17.94)**	*8.85 (1.45, 54.09)**
Proportion of network comprised of gay friends	–	–	–	*0.12 (0.02, 0.75)**
Main partner characteristics				
Main partner age	*0.93 (0.88, 0.99)**	–	–	–
Dyadic characteristics				
Same race	–	–	*0.32 (0.14, 0.73)**	–

* significant at the 5% level

gay men may have less access to the wider LGBT community, and as such may have lower access to positive LGBT role models, social support and culturally appropriate services. Additionally, these men may themselves be experiencing difficulties in disclosing their own sexual orientation, and this stress may manifest as IPV in relationships. Men whose social networks are largely composed of sex partners may have fewer opportunities to create positive social bonds and interactions, they may be less socially visible in the LGBT community, may have fewer positive LGBT role models, or may themselves be struggling with issues around their sexual orientation, all of which may reduce their access to information and resources in the LGBT community. However, it is possible that the experience of IPV may act as a barrier to involvement or participation in social aspects of the LGBT community. Surprisingly, men whose network was slightly younger than

them were less likely to experience physical IPV, perhaps suggesting that access to peers acts as a source of information and resources. Further research is needed to understand the causal mechanisms between these social network measures and IPV. However, men with more gay friends in their network were less likely to perpetrate sexual IPV, further suggesting that access to the LGBT community, social support and resources may reduce the stressors that lead to IPV within male-male couples.

LIMITATIONS

There are several limitations to the current study. We used venue-based sampling to recruit the participants instead of random sampling; however, previous studies have demonstrated that this form of sampling results in a sample of similar diversity as is found when using random sampling methods, and is a useful tool for sampling hard-to-reach populations – such as gay/bisexual men – for whom no pre-existing sample frame is available.[42] The small sample size and possible selection bias in both the decision to complete the questionnaire and the decision to answer the questions on IPV are also limitations. Kaschak[49] refers to the "*double closet*" that surrounds IPV in same-sex relationships; the dual burden of shame and silence surrounding both the discussion of IPV and the discussion of sexuality; hence, it is possible that IPV may be under-reported. Although a recent recall period (one-year) was used to measure both experience of IPV and receipt of IPV, the variables used to measure IPV may have captured IPV that occurred outside of the respondent's current main partnership. Additionally, the cross-sectional nature of the data means that only associations between dyadic characteristics and the reporting of IPV can be drawn; there are no causal relationships identified here. Further work, using longitudinal data, is required to further understand the relationships between dyadic and social network characteristics and IPV among gay and bisexual men.

CONCLUSION

The results highlight that there are influences on IPV within male-male couples that stretch beyond the commonly examined individual characteristics to include the characteristics of the partner, the differences in characteristics between partners, and the social networks within which individuals socialize. Clearly examining individual risk factors alone is not sufficient in addressing IPV among gay and bisexual men; this has already been shown for studies of IPV among heterosexual populations. There is clearly a need for further research into issues surrounding IPV in same-sex male relationships, which are vulnerable to high levels of IPV, and to understand the complex relationships that exist between IPV, dyadic characteristics and social networks. Many of the results point to the role of minority stress in shaping the risk of IPV in male-male couples. Future areas of research and intervention should focus on how structural stressors, such as racism, homophobia and heteronormativity, may manifest as IPV in same-sex dyads. Such information is vital for the development of effective interventions to reduce violence and improve health among gay and bisexual men in the U.S.

Address for Correspondence: Rob Stephenson, PhD. Hubert Department of Global Health, Rollins School of Public Health, 1518 Clifton Road, NE, #722, Atlanta, GA 30322. Email: rbsteph@sph.emory.edu.

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REFERENCES

1. Blosnich JR, Bossarte RM. Comparisons of intimate partner violence among partners in same-sex and opposite-sex relationships in the United States. *Am J Public Health*. 2009;99:2182–2184.
2. Messinger, AM. Invisible victims: Same-Sex IPV in the national violence against women survey. *J Interpers Violence*. 2011;26: 2228–2243.
3. Balsam KF, Lehavot K, Beadnell B, et al. Childhood abuse and mental health indicators among ethnically diverse lesbian, gay, and bisexual adults. *J Consult Clin Psychol*. 2010;78:459.
4. Tjaden P, Thoennes N, Allison CJ. Comparing violence over the life span in samples of same-sex and opposite-sex cohabitants. *Violence Vict*. 1999;14(4):413–425.
5. Waldner-Haugrud LK, Gratch LV, Magruder B. Victimization and perpetration rates of violence in gay and lesbian relationships: Gender issues explored. *Violence Vict*. 1997;12:173–184.
6. Greenwood GL, Relf MV, Huang B, et al. Battering victimization among a probability-based sample of men who have sex with men. *Am J Public Health*. 2002;92:1964–1969.
7. Houston E, McKirnan DJ. Intimate partner abuse among gay and bisexual men: Risk correlates and health outcomes. *J Urban Health*. 2007;84:681–690.
8. Kalichman SC, Simbayi L. Traditional beliefs about the cause of AIDS and AIDS-related stigma in South Africa. *AIDS care*. 2004;16:572–580.
9. Koblin BA, Husnik MJ, Colfax G, et al. Risk factors for HIV infection among men who have sex with men. *Aids*. 2006;20:731–739.
10. Stall R, Mills TC, Williamson J, et al. Association of co-occurring psychosocial health problems and increased vulnerability to HIV/AIDS among urban men who have sex with men. *Am J Public Health*. 2003;93: 939–942.
11. Welles SL, Corbin TJ, Rich JA, et al. Intimate partner violence among men having sex with men, women, or both: early-life sexual and physical abuse as antecedents. *J Community Health*. 2011;36:477–485.

12. Bradbury TN, Lawrence E. Physical aggression and the longitudinal course of newlywed marriage. In: Arriaga, XB, Oskamp, S, eds. *Violence in intimate relationships*. Thousand Oaks, CA: Sage;1999: 181–202.
13. Capaldi DM, Shortt JW, Kim HK. A life span developmental systems perspective on aggression toward a partner. In: Pinsof, WM, Lebow, J, eds. *Family psychology: The art of the science*. New York: Oxford University Press;2005:141–167.
14. O'Leary KD, Smith Slep AMS. A dyadic longitudinal model of adolescent dating aggression. *J Clini Child Adolesc Psychol*. 2003;32:314–327.
15. McClennen JC. Domestic violence between same-gender partner recent findings and future research. *J Interpers Violence*. 2005;20(2): 149–154.
16. Burke TW, Jordan ML, Owen SS. A cross-national comparison of gay and lesbian domestic violence. *J Contemporary Criminal Justice*. 2002; 18:231–56.
17. Alexander CJ. Violence in gay and lesbian relationships. *J Gay Lesbian Soc Serv*. 2002;14:95–8.
18. Pitts EL. Domestic violence in gay and lesbian relationships. *Gay and Lesbian Med Associa Jl*. 2000;4:195–6.
19. National Center on Domestic and Sexual Violence. *Lesbian/gay power and control wheel* (adapted from Domestic Abuse Intervention Project, Duluth, MN). National Center on Domestic and Sexual Violence. Available at: http://www.ncdsv.org/publication_wheel.html. Accessed November 11, 2012.
20. Elliott P. Shattering illusions: Same-sex domestic violence. *J Gay Lesbian Soc Serv*. 1996;4:1–8.
21. De Vidas M. Childhood sexual abuse and domestic violence: A support group for Latino gay men and lesbians. *J Gay Lesbian Soc Serv*. 1999; 10:51–68.
22. McClennen JC, Summers B, Vaugh C. Gay men's domestic violence: dynamics, help-seeking behaviors, and correlates. *J Gay Lesbian Soc Serv*. 2002;14:23–49.
23. Toro-Alfonso J, Rodriguez-Madera S. Sexual coercion in a sample of Puerto Rican gay males. *J Gay Lesbian Soc Serv*. 2004;17:47–58.
24. Capaldi DM, Knoble NB, Shortt JW, et al. A systematic review of risk factors for intimate partner violence. *Partner Abuse*. 2012;3:231–280.
25. Golinelli D, Longshore D, Wenzel SL. Substance use and intimate partner violence: Clarifying the relevance of women's use and partners' use. *J Behav Health Serv Res*. 2009;(2)36:199–211.
26. Moracco KE, Runyan CW, Bowling JM, et al. Women's experiences with violence: A national study. *Womens Health Issues*. 2007;(1)17:3–12.
27. Rodriguez E, Lasch KE, Chandra P, et al. Family violence, employment status, welfare benefits, and alcohol drinking in the United States: what is the relation?. *J Epidemiol Community Health*. 2001;55(3):172–178.
28. Kim HK, Laurent HK, Capaldi DM, et al. Men's aggression toward women: A 10-year panel study. *J Marriage Fam*. 2008;70:1169–1187.
29. Cunradi CB, Caetano R, Schafer J. Socioeconomic predictors of intimate partner violence among White, Black, and Hispanic couples in the United States. *J Fam Violence*. 2002;17:377–389.
30. Smith Slep AMS, Foran HM, Heyman RE, et al. Unique risk and protective factors for partner aggression in a large scale Air Force survey. *J Community Health*, 2010;35:375–383.
31. Jain S, Buka SL, Subramanian SV, et al. Neighborhood predictors of dating violence victimization and perpetration in young adulthood: A multilevel study. *Am J Public Health*. 2010;100:1737–1744.
32. Lanier C, Maume MO. Intimate partner violence and social isolation across the rural/urban divide. *Violence against Women*, 2009;15:1311–1330.
33. Van Wyk JA, Benson ML, Fox GL, et al. Detangling individual-, partner-, and community-level correlates of partner violence. *Crime & Delinquency*. 2003;49:412–438.
34. Brooks VR. *Minority stress and lesbian women*. Lexington, MA: Lexington Books;1981.
35. Friedman RC. Couple therapy with gay couples. *Psychiatric Annals*. 1991;21:485–490.
36. Meyer IH. Minority stress and mental health in gay men. *J Health Social Behav*. 1995;36:38–56.
37. Johnson SB, Frattaroli S, Campbell J, et al. " I Know What Love Means." Gender-Based Violence in the Lives of Urban Adolescents. *J Womens Health*. 2005;14:172–179.
38. Walton MA, Chermack ST, Shope JT, et al. Effects of a brief intervention for reducing violence and alcohol misuse among adolescents. *JAMA*. 2010;304:527–535.
39. Herek GM, Sims C. Sexual orientation and violent victimization: Hate crimes and intimate partner violence among gay and bisexual males in the United States. In: Wolitski, RJ, Stall, R,.Valdiserri, RO, eds. *Unequal opportunity: Health disparities among gay and bisexual men in the United States* New York: Oxford University Press;2008:35–71
40. Collins FH, Sutherland MA, Kelly-Weeder S. Gender differences in risky sexual behavior among urban adolescents exposed to violence. *J Am Acad Nurse Pract*;2012;24:436–442.
41. Stephenson R, Rentsch C, Salazar LF, et al. Dyadic characteristics and intimate partner violence among men who have sex with men. *West J Emerg Med*. 2011;12:324–332.
42. Kaschak E. Intimate betrayal: domestic violence in lesbian relationship. *Women Therapy*. 2001;23:1–5.

An Examination of Bullying in Georgia Schools: Demographic and School Climate Factors Associated with Willingness to Intervene in Bullying Situations

Lori Goldammer, MPH*
Monica H. Swahn, PhD, MPH*
Sheryl M. Strasser, PhD, MPH*
Jeffrey S. Ashby, PhD†
Joel Meyers, PhD†

* Georgia State University, School of Public Health, Atlanta, Georgia
† Georgia State University, Counseling and Psychological Services, Atlanta, Georgia

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Introduction: Research dedicated to identification of precursors to cases of aggravated bullying in schools has led to enhanced knowledge of risk factors for both victimization and perpetration. However, characteristics among those who are more likely to intervene in such situations are less understood. The purpose of this study is to examine the associations between demographic characteristics, school climate and psychosocial factors, and willingness to intervene in a bullying situation among middle and high school students in Georgia.

Methods: We computed analyses using cross-sectional data from the Georgia Student Health Survey II (GSHS 2006) administered to public school students in grades 6, 8, 10, and 12 (n=175,311). We used logistic regression analyses to determine the demographic, school climate and psychosocial factors associated with a willingness to intervene in a bullying situation.

Results: Students who were white and who were girls were most likely to report willingness to intervene in bullying situations. Several school-climate factors, such as feeling safe at school, liking school, feeling successful at school and perceiving clear rules at school, were associated with willingness to intervene, while youth who reported binge drinking were less willing to intervene.

Conclusion: These findings, while preliminary, indicate that girls, students who are white, and students who experience a relatively positive school climate and adaptive psychosocial factors are more likely to report that they would intervene in bullying situations. These findings may guide how bullying is addressed in schools and underscore the importance of safe school climates. [West J Emerg Med. 2013;14(4):324–328.]

INTRODUCTION

There has been a significant concern nationally in the number of reported school bullying incidents across the United States (U.S.). Approximately 30% of students report being involved in bullying situations as bullies, victims, or bully-victims.[1] A promising new area for bullying prevention and intervention research is considering the role of bystanders and their willingness to intervene in a bullying incident. Recent findings show that students' willingness to intervene is linked to the bystander's perception of the level of harm.[2] Intriguingly, empirical data on the demographic and psychosocial characteristics of youth who may be willing to intervene is scarce, even though this information can be beneficial to the design and implementation of new strategies to reduce bullying and its many adverse consequences among youth.

The current study sought to remedy this gap by addressing 2 largely unaddressed research questions about how common is it for youth to be willing to intervene in a bullying situation and determining the characteristics of the youth who are willing to intervene. This research is a direct extension of previous literature [2,3] and sought to address these questions by empirically examining existing data from the Georgia Student Health Survey II (GSHS, 2006) to determine the prevalence of students willing to intervene in bullying situations, the characteristics of these students and the climate within their schools to benefit future research and practice related to bullying prevention.

METHODS

The Georgia Student Health Survey, conducted in 2006, was administered to 181,316 students in grades 6, 8, 10, and 12.[4] Data were collected in middle and high schools to assess youth risk behaviors and other factors.[5] Of the 181,316 completed questionnaires, 6,005 were eliminated due to an affirmative response on a validity check question regarding a fictitious drug (Have you ever used the drug zenabrillatol?), resulting in 175,311 remaining valid completed questionnaires. The overall participation rate was 45.9%. The survey was designed by the state's Department of Education to gather information required by the Federal Department of Education for annual yearly progress reporting. Students in grades 6, 8, 10 and 12 who attended public middle and high schools participated in the study by completing the surveys anonymously and on school computers during school hours. The survey was a census; all public schools in the state of Georgia were invited to participate. However, participation rates varied. The study sought parental permission for participation via a passive consent process. The authors received approval from the Institutional Review Board at Georgia State University to conduct these secondary analyses.

Measures

The primary purpose of the GSHS II was to examine behaviors, beliefs and trends pertaining to student health. Specifically, several questions pertained to school climate, drug and alcohol usage and access, as well as other health-related behaviors. With respect to bullying, students were asked separate questions to determine if they had been bullied or threatened or if they had bullied or threatened others in the past 30 days. These 2 questions were combined to determine what bullying experiences student may have had (bully-perpetrators, bullying victims, both, or neither). Students were also asked if they would help someone who was being bullied.

Analysis

We conducted a cross-sectional multilogistic regression analysis to determine the associations between willingness to intervene in a bullying incident and demographics, psychosocial characteristics and school climate factors in a multivariate model. The 3-level outcome variable indicated whether a student was always, or was sometimes, willing to intervene versus not at all willing to intervene in a bullying situation. We analyzed the data using the SAS 9.2 and SUDAAN 10.0 statistical software.

RESULTS

Among study participants, 27.9% indicated being involved in bullying incidents as a bully, victim or bully-victim. Moreover, 91.6% of students indicated they would be willing to intervene (always 41.2% or sometimes 50.4%) in a bullying situation. Girls and students identified as white were most likely to report a willingness to always intervene in a bullying situation (Table 1). Students' own experiences with bullying had a relationship with their willingness to intervene as those who identified themselves as bullies were most likely to report that they were always willing to intervene in a bullying situation (Adjusted odds ratio [OR]= 1.26; 95% confidence interval [CI]: 1.17-1.35) (Table 2). Similarly students teased in the last 30 days (Adjusted OR=1.42; CI: 1.36-1.49) were also more willing to intervene. Several school climate factors, such as feeling safe at school (Adjusted OR= 1.83; 95% CI: 1.75-1.91), feeling successful (Adjusted OR= 1.94; 95% CI: 1.78-2.12), reporting clear school rules (Adjusted OR= 1.95; 95% CI: 1.83-2.08) or liking school (Adjusted OR= 2.28; 95% CI: 2.11-2.24), were associated with always being willing to intervene in a bullying situation. The only school climate factor that did not have an impact on student's willingness to always intervene was students that missed school due to feeling unsafe (Adjusted OR= 0.81; 95% CI: 0.74-0.87). In terms of psychosocial factors, those who reported binge drinking (Adjusted OR=0.73; 95% CI: 0.69-0.78) were less likely to report that they were always willing to intervene. No associations were observed between drug use or any suicidal ideation and willingness to intervene.

DISCUSSION

This study found that levels of bullying in the state of Georgia mirror that of estimates for the U.S.[6] Also, the study found significant associations between several demographic and school climate factors and the willingness to intervene in a bullying situation. Students who were girls and white, and students who felt safe and successful at school were most likely to report that they would intervene. It was intriguing to find that several of the school climate factors examined, such as feeling safe at school, liking school, feeling successful at school and perceiving clear rules at school, were associated with willingness to always intervene. These findings, combined with the high prevalence of willingness to intervene, suggest students may be willing and interested in participating in more structured bullying prevention and intervention initiatives.[7]

Previous research has documented that students felt safer when a bystander intervened to help the victim, and

Table 1. Wording of variables included in the analyses of participants in the Georgia Student Health Survey II (2006).

Variable	Wording and response options
Willingness to intervene	I would help someone who was being bullied (always, sometimes, never).
Bully victim	Have been bullied or threatened by other students (yes or no), in past 30 days.
Bully	Bullied or threatened other students (yes or no).
Always/Sometimes like school	I like school (always, sometimes, or not at all).
Always/Sometimes feel successful at school	I feel successful at school (always, sometimes, or not at all).
Always/Sometimes clear rules at school	My school sets clear rules for behavior (always, sometimes or not at all).
Any binge drinking	I have drunk five or more drinks of alcohol at one sitting during the last 30 days (yes, no).
Any drug use	I have used. . . smoking tobacco, chewing tobacco, marijuana, cocaine, inhalants, steroids, ecstasy and/or methamphetamines (number of days used in past 30 days). (Measures were aggregated to indicate any use of any of these substances).
Considered suicide	I seriously considered attempting suicide (yes, no) in past 12 months.
Missed school	Have been absent from school because they have felt I would be unsafe at school or on my way to or from school (yes or no).
Teased	Have been picked on or teased at school (yes or no).
School safety	School is a place at which I feel safe (always, sometimes, not really very safe, no, it's dangerous).

conversely felt unsafe when students joined in the bullying. [7] In other words, a systematic, all- encompassing approach needs to be employed to make students more comfortable to intervene.[7–8] Moreover, previous research shows that in schools where students perceived more positive school climates and were less accepting of bullying, students were more likely to intervene.[9] Furthermore, it is interesting to note that bullies were most likely to always be willing to intervene in comparison to victims or bully-victims. While this finding may seem counterintuitive, there is a plausible explanation. Many bullies may have been victimized previously and some researchers speculate that they may in fact have the ability to empathize better than once expected and as such, may be more willing to intervene in situations involving other bullies. Furthermore, researchers have presented a conceptual framework that represents students' motives relating to willingness to intervene as it pertains to their 1) Interpretation of harm; 2.) Emotional reaction; 3) Social evaluating; 4) Moral evaluating; and 5) Intervention self-efficacy. Based on this model, the more confident students may be regarding favorable outcomes, the more likely they are to intervene.

Findings regarding willingness to intervene also have implications for how bullying is addressed in the educational system. Preferably, bullying prevention programs in school should be designed to be more comprehensive and also build on evidenced-based programs. [10–11] There are numerous potential benefits of enhancing and strengthening the school climate, such as increased academic achievement, improved attendance and fewer behavioral problems. However, further research needs to examine the role of school climate and the factors that may facilitate a student's willingness to intervene in bullying situations. In addition, future research should determine the extent to which levels of willingness to intervene is modifiable and can safely be encouraged among students as part of a comprehensive bullying prevention program in school settings.

LIMITATIONS

There are several limitations of this study that should be considered when interpreting these findings. First, the results from the survey may not be generalizable to other populations or youth who no longer attend school. Second, while the study was based on a census of students in Georgia, not a sample, the relatively low participation rate (45.9%) may limit the generalizability of the findings beyond students who participated in the survey. Nonetheless, the analyses are based on a very large number of participants (n=175,311). Third, while the findings show statistically significant associations, more specific temporal ordering cannot be determined, nor can causality be inferred. Finally, this study only examined students' willingness to intervene and not their actual behavior. As reported by others, those who indicate they would always intervene in our survey may not do so when confronted with an actual bullying incident.[11] Students may report wanting to help, but they may overestimate their willingness to actually respond.[10] While research is limited in this area, it has been estimated that approximately 19% of

Table 2. Demographic, school climate and psychosocial factors and their association with willingness to intervene in a bullying incident among participants in the Georgia Student Health Survey II (2006).

	Always willing to intervene vs. never adjusted OR (95% CI)	Sometimes willing to intervene vs. never adjusted OR (95% CI)
Sex		
Girls	1.66 (1.60-1.73)	1.41 (1.36-1.46)
Boys	1.00	1.00
Grade		
6th	0.68 (0.64-0.72)	0.56 (0.52-0.59)
8th	0.68 (0.64-0.73)	0.68 (0.64-0.72)
10th	0.79 (0.75-0.85)	0.86 (0.81-0.92)
12th	1.00	1.00
Race		
Black	1.00	1.00
Hispanic	1.42 (1.32-1.52)	1.11 (1.04-1.19)
White	3.42 (3.28-3.57)	2.23 (2.14-2.33)
Asian	1.30 (1.18-1.44)	1.25 (1.14-1.37)
Other	1.69 (1.55-1.84)	1.25 (1.15-1.35)
School climate factors		
Missed school due to feeling unsafe	0.81 (0.74-0.87)	0.62 (0.57-0.67)
Teased	1.42 (1.36-1.49)	1.39 (1.32-1.45)
Feel safe at school	1.83 (1.75-1.91)	1.15 (1.10-1.21)
Always like school	2.28 (2.11-2.46)	1.18 (1.10-1.28)
Sometimes like school	2.12 (2.00–2.24)	1.87 (1.77-1.97)
Always feel successful	1.94 (1.78-2.12)	1.65 (1.52-1.79)
Sometimes feel successful	1.62 (1.50-1.75)	1.79 (1.67-1.93)
Always clear rules at school	1.95 (1.83-2.08)	1.72 (1.62-1.83)
Sometimes clear rules at school	1.41 (1.32-1.50)	1.66 (1.56-1.77)
Psychosocial factors		
Binge drinking	0.73 (0.69-0.78)	0.70 (0.66-0.74)
Drug use	0.99 (0.94-1.04)	1.00 (0.95-1.05)
Considered suicide	0.99 (0.93-1.05)	0.86 (0.81-0.91)
Role		
Bully	1.26 (1.17-1.35)	0.99 (0.92-1.06)
Victim	0.61 (0.58-0.65)	0.87 (0.82-0.92)
Bully-victim	0.75 (0.69-0.80)	0.86 (0.80-0.92)
Neither	1.00	1.00

CI, confidence interval
All variables included in the multivariate model. Reference categories were those student who reported the absence of the factor measured (i.e., did not miss school due to feeling unsafe, were not teased, did not feel safe at school, did not like school, did not feel successful at school, did not report clear rules at school, did not binge drink, did not use drugs, did not consider suicide).

students actually intervene. Intriguingly, when students intervene they are 57% successful in stopping the bullying within 10 seconds.[12] As such, the self-reported willingness to intervene and the factors that may increase the likelihood of actually intervening in a bullying situation remain an important area for future research and program implementation. Furthermore, we recommend development of new tools to better assess student levels of actually intervening through questionnaires that can provide more variability in responses. The scarce research in this area combined with our current findings give us better insight about the youth who report being willing to intervene and the school factors that may increase willingness to intervene, but they also raise important questions for future research.

CONCLUSION

The focus of this research was to examine youth willingness to intervene in bullying situations in a very large population of students in Georgia. Intriguingly, the vast majority of students indicated they would be willing to intervene in a bullying situation. The findings also demonstrate that a positive school climate is associated with a willingness to intervene. These findings provide empirical support for strategies that seek to develop effective bullying prevention programs that involve students. In particular, several potentially modifiable factors, such as feeling safe at school, liking school and feeling successful at school, were found to be associated with willingness to intervene. These factors can be targeted in prevention programs and guide future research to build a stronger school climate that may in turn prevent and reduce bullying and thereby reduce its adverse impact on learning and mental health.

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Address for Correspondence: Lori Goldammer, MPH. Email: l.goldammer@gmail.com.

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REFERENCES

1. Carlyle K, Steinman K. Demographic differences in the prevalence, co-occurrence, and correlates of adolescent bullying at school. *J Sch Health*. 2007;*77*(9):623–629.
2. Thornberg R, Tenenbaum L, Varjas K, et al. Bystander motivation in bullying incidents: to intervene or not to intervene? *West J Emerg Med*, 2012;*13*(3): 247–252.
3. Olweus D. Bullying at school. Basic facts and an effective intervention programme. *Promot Educ*. 1994;*1*(4):27 –31.
4. Georgia Department of Education. *Georgia Student Health Survey II*. Available at: http://admin.doe.k12.ga.us/gadoe/sla/GSHS.nsf/Printable-SurveyMS. Accessed December 12, 2010.
5. Swahn MH, Topalli V, Ali B, et al. Pre-teen alcohol use as a risk factor for victimization and perpetration of bullying among middle and high school students in Georgia. *West J Emerg Med*. 2011;12(3):305–309.
6. Nansel TR, Overpeck MD, Haynie DL, et al. Relationships between bullying and violence among US youth. *Arch Pediatr Adolesc Med*. 2003;157(4):348–353.
7. Gini G, Pozzoli T, Borghi F, et al. The role of bystanders in students' perception of bullying and sense of safety. *J Sch Psychol*. 2008;46(6): 617–638.
8. Orpinas P, Horne AM. Bullying prevention: creating a positive school climate and developing social competence. Washington, DC: US: American Psychological Association. 2006.
9. Eliot M, Cornell D, Gregory A, et al. Supportive school climate and student willingness to seek help for bullying and threats of violence. *J Sch Psychol*. 2010;48(6):533–553.
10. O'Connell P, Pepler D, Craig W. Peer involvement in bullying: insights and challenges for intervention. *J Adolesc*, 1999;22(4):437–452.
11. Pepler DJ. Bullying Interventions: A Binocular Perspective. *J Can Acad Child Adolesc Psychiatry*. 2006;15(1):16–20.
12. Hawkins D, Pepler D, Craig W. Naturalistic Observations of Peer Interventions in Bullying. *Social Dev*. 2001;10 (4):512–527.

Sexual Violence Perpetration by Adolescents in Dating versus Same-Sex Peer Relationships: Differences in Associated Risk and Protective Factors

Kathleen C. Basile, PhD*
Merle E. Hamburger, PhD*†
Monica H. Swahn, PhD, MPH‡
Colleen Choi, PhD§

* Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention, Atlanta, Georgia
† Formerly at Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention, Atlanta, Georgia
‡ Georgia State University, School of Public Health, Atlanta, Georgia
§ Independent Researcher, Bethesda, Maryland

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Introduction: Little is known about the risk and protective factors for youth sexual violence (SV) perpetration across different types of relationships. This study examined factors associated with perpetrating SV against a dating partner and a same-sex peer.

Methods: Analyses were based on data from a survey conducted in 2004 with public school boys and girls in grades 7, 9, 11, and 12 (N=4,131) in a high-risk, urban school district in the United States. SV perpetration was defined broadly to include forcing someone, about the same age and of the same or opposite sex as the respondent, to have sex or to do something sexual that they did not want to do. Analyses examined the associations between risk and protective factors and SV perpetration, adjusting for SV victimization and demographic characteristics.

Results: Findings revealed that 2.1% of respondents reported perpetration against a same-sex peer and 3.2% reported perpetration against a date during the past 12 months. Victims of SV for each relationship type were more likely than non-victims to perpetrate SV. A combination of factors across the individual, relationship, and community level were significantly associated with SV perpetration and there were both shared and unique factors across the relationship types.

Conclusion: Data suggest that programs to prevent SV perpetration for both relationship types should start when students are young, with particular focus on middle school boys. Prevention efforts should have slightly different foci to address these 2 types of SV perpetration. [West J Emerg Med. 2013;14(4):329–340.]

INTRODUCTION AND SIGNIFICANCE OF PROBLEM

Sexual violence (SV) of adolescents is a major public health problem in the United States (U.S.). Evidence from decades of research has shown that both boys and girls are vulnerable to SV victimization, girls are significantly more vulnerable than boys, and males are the large majority of perpetrators of penetrative SV.[1,2] For the purposes of this paper, SV encompasses a range of unwanted or non-consensual sexual experiences. SV can include any attempted or completed vaginal, oral, or anal penetration, as well as unwanted sexual contact (i.e., unwanted touching).[3]

The national rates of penetrative SV victimization (eg, rape) are alarming and indicate that youth are overwhelmingly the victims. Among a national sample of adolescents in 9th to 12th grades, 11% of girls and 5% of boys had experienced unwanted physically forced sexual intercourse during their lifetime.[4] In the most comprehensive national survey of adults on the topic to date, 1 in 5 women (18.3%) and 1 in 71 men

(1.4%) reported an attempted or completed rape (defined as forced penetration without consent or when the victim was drunk, high, drugged, or passed out and unable to consent) during their lifetime.[3] Most female victims of completed rape (79.6%) experienced their first rape before age 25 and almost half of female victims (42.2%) experienced their first rape before age 18. More than a quarter of male victims of completed rape (27.8%) were first raped when they were 10 years old or younger. In addition, 4.8% of men have been made to penetrate someone else, either by force or when the victim was not able to consent.[3] For both males and females, the majority of victims of penetrative SV know their perpetrators, and the perpetrator is commonly a current or former intimate partner or an acquaintance.[2,3]

While we know victimization rates among U.S. adolescents are high, national prevalence rates of SV perpetration are limited because that information is typically not collected in nationally representative surveys. Estimates of the prevalence of SV perpetration, broadly defined, from smaller studies range from 4.3% to 34% for males and 1.3% to 28% for females.[5–10] For example, Banyard et al[5] found that of a sample of 980 adolescents in grades 7–12, 10% of males and 2.5% of females reported perpetrating sexual coercion (eg unwanted kissing, touching or intercourse). In a study of approximately 131,000 public school children in grades 6, 9, and 12 in Minnesota, the authors found that 4.8% of males and 1.3% of females reported that they had forced sexual acts on someone.[6]

SV Perpetration in Different Relationships

SV can occur in numerous types of relationships. In 80% of SV cases, perpetrators know their victims.[2,11] Such violence may be perpetrated, for example, by a dating partner, a friend, or an acquaintance. Research has identified many important factors that are associated with SV perpetration within dating relationships, primarily among college students, such as impulsivity, having negative peer influences, and having hostile attitudes toward women.[12,13] Whether these factors are also applicable to the younger populations who date, such as those in middle or high school, is less known. SV perpetration of same-sex peers is also less studied. While there is extensive literature about physical violence involving peers (eg, fighting, physical bullying, gang involvement), information on SV victimization of or perpetration by non-dating peers is limited, and few SV studies to date have specifically examined non-dating same-sex peers. To our knowledge, moreover, no studies have examined differences in SV perpetration across dating and same-sex peer relationships.

Dating Relationships. Dating violence encompasses physical, sexual, or psychological harm against a dating partner. The SV component of dating violence is less studied than the physical and emotional aspects of it, particularly among youth, with a few exceptions. In the identified studies, rates of SV perpetrated in dating relationships vary given different samples and measures, and range from 4.5% to 17% for boys and from 1.2% to 5% for girls.[14–16]

Same-Sex Peer Non-Dating Relationships. There is scarce literature on SV experiences involving physical contact of or by a same-sex peer, but what is available suggests that it is not as common as opposite sex perpetration. Bennett and Fineran[17] found that most SV (rape, attempted or pressuring to do something sexual) perpetrated in their sample of high school students was perpetrated by the opposite sex with little same-sex violence; 66% of the 74 cases of SV perpetration reported in their sample were boy on girl, with 27% girl on boy, 5% girl on girl, and only 1 case of boy on boy. However, studies that examine more *non-contact* sexual harassment behaviors tend to find more same-sex perpetration. For example, a study of sexual harassment in middle and high schools found that the majority of male harassers (72%) had perpetrated against other males, and 41% of female harassers perpetrated against females.[18] Beyond these studies, little is known about the prevalence of SV in same-sex peer non-dating relationships.

Correlates of SV Perpetration across Different Levels of the Social Ecology

Most of the work examining factors associated with SV has focused on opposite sex victims and perpetrators, such as heterosexual dating partners or acquaintances. Few studies were identified that explicitly focused on the prevalence and correlates of SV by a same-sex peer.

Individual Level Factors. Borowsky et al[6] found that SV perpetration was associated with frequent use of illegal drugs, anabolic steroid use, and daily alcohol use. For male adolescents, being emotionally healthy was found to decrease the likelihood of perpetration (suggesting that depression may be related to increased likelihood of perpetration).[6] Delinquency has been repeatedly associated with perpetrating SV.[19–20] Previous SV victimization experience has also been found to be associated with SV perpetration.[16] While little is known about self-efficacy to avoid conflict and its relationship to SV perpetration, previous work has found a link between low self-efficacy to avoid conflict and physical dating violence perpetration.[21] While not connected specifically to SV perpetration, higher commission of property crimes has been connected to higher bullying perpetration in a longitudinal study of adolescents.[22] Further research is needed to examine if these individual correlates of dating violence and bullying are also associated with SV perpetration by youth.

A large portion of the violence research has examined attitudinal variables related to SV, particularly with regard to perpetration. For example, some have shown that sexist and violent attitudes toward women, attitudes that support and accept dating violence, traditional sex roles, and friendships

with peers who endorse dating violence are linked to perpetrating sexual dating violence.[12,16,23–26]

Family and Peer Level Factors. At the family level, childhood experiences with violence and witnessing IPV are important correlates. For example, Borowsky et al[6] found that SV perpetration was associated with experiencing intrafamilial or extrafamilial sexual abuse, as well as witnessing family violence. Wolf and Foshee[27]examined 8th and 9th graders and found that boys who experienced child physical abuse were more likely to perpetrate physical and/or sexual dating violence than those boys who did not experience it. In addition, girls who witnessed parental violence were more likely to perpetrate physical and/or sexual dating violence than girls who did not witness it.

While less is known about protective factors for SV at the family or peer level, positive influences in the home, such as parental monitoring and parental support, have been found in some studies to be important correlates of SV perpetration. For example, the lack of parental supervision discriminated former male child victims of sexual abuse who abuse later in life from former male child victims who did not abuse later in life.[28] Another study found that Uganda adolescent perpetrators of sexual coercion were less likely than non-perpetrating youth to have social support from their family.[29]

Peer influences have also emerged as important correlates of SV perpetration. For example, 1 study found that males who engaged in peer violence were more likely to perpetrate sexual aggression.[10] Borowsky et al[6] found that adolescent perpetration of SV was associated with excessive time spent "hanging out" and gang membership for both girls and boys.

Factors as Proxies for Community Level. While not truly community level factors because they were measured at the individual level, some studies have tried to understand the influence of connections and experiences in a person's community on SV perpetration. For male adolescents, connectedness with friends and adults in the community has been found to decrease the likelihood of sexually aggressive behavior.[6] Exposure to community violence has been associated among females with being the recipient of dating violence (including forced sexual activity).[30]

Present Study Objectives and Hypothesis

The present study contributes to the existing body of knowledge in several ways. First, we identify the risk and protective correlates that are associated with being an adolescent perpetrator of SV in 2 different relationship types – dating and non-dating same-sex peer. Few studies have focused on correlates of adolescent SV perpetration across different relationships. We examine correlates that have been linked to SV (or another similar type of aggressive behavior) either empirically or theoretically to better determine factors associated with SV perpetration across dating and same-sex peer relationships. Further, we examine factors that, although measured at the individual level, are proxies for the family/relationship level and community level of the social ecology.

While these 2 types of relationships are different and thus they may have some different risk and protective factors, theoretically, SV perpetrated in either of these relationships could be explained by a combination of individual level traits and family and peer life experiences. For example, Malamuth et al's[31] confluence model found that a mix of adverse childhood experiences (i.e., maltreatment), individual characteristics (eg, impulsivity), attitudes (i.e., hostile attitudes toward women) and antisocial behavior (i.e., delinquency) work in combination to make SV perpetration more likely. While the current study is not longitudinal and did not capture all the variables included in previous models explaining SV perpetration, the current study includes many variables found in the literature to be associated with SV or other similar types of perpetration (dating physical violence or bullying). Based on previous work, we expect most of the correlates measured in this study to be associated with SV perpetration for both dating and same-sex non-dating relationships.

METHODS

Analyses are based on data from the Youth Violence Survey: Linkages among Different Forms of Violence study, a cross-sectional survey of all public school students enrolled in grades 7, 9, 11, and 12 in a school district in a high-risk community (i.e., based on indicators such as high levels of poverty, unemployment, and serious crimes). Because of their low enrollment, students in grades 11 and 12 were grouped together to produce a sufficient number of participants in the oldest of the 3 age groups. Active, signed, written parental permission and student assent were obtained from all students younger than 18 years of age, and students 18 years of age or older provided written consent before participating. The study received institutional review board approval from the Centers for Disease Control and Prevention (CDC) and ORC Macro International. The participation rate for the study was 80% (see Swahn et al[32] and Swahn et al[33] for additional details about participant recruitment procedures and methodology).

Data were collected in April 2004 from 4,131 students who voluntarily completed an anonymous, self-administered 174-item questionnaire during a 40-minute class period. Students received a gift card for participation. While the peer SV perpetration models in the current analysis are based on the full sample, the dating SV perpetration models in the current analyses are limited to those participants who reported having been on a date (broadly defined as "hanging out with someone, eating out, playing a game, watching a movie, or doing other things with someone you like") within the last 12 months (n = 3,012). See Table 1 for statistics on the relationship between the risk/protective factors and SV perpetration across dating and same-sex peer relationships.

Table 1. Logistic regression analyses of the associations between risk and protective factors and perpetration of sexual violence (SV) across dating and same-sex peer relationships among high risk youth in grades, 7, 9, 11, and 12.

	SV perpetration					
	Dating relationship[a]			Same-sex peer relationship[b]		
	n	%	OR_{adj} (95% CI)[c]	*n*	%	OR_{adj} (95% CI)[c]
Individual level						
SV victimization						
No	2809	1.9	referent	3986	1.2	referent
Yes	203	21.7	15.64 (9.75–25.08)	145	29.0	30.86 (18.67–51.00)
Delinquency						
Low	1,405	1.5	referent	2,218	0.7	referent
High	1,607	4.7	2.55 (1.58–4.11)	1,913	3.9	5.91 (3.31–10.55)
Gang interest/Involvement						
No	2,609	2.3	referent	3,656	1.4	referent
Yes	403	9.4	3.44 (2.20–5.37)	475	8.0	4.83 (3.07–7.60)
High episodic drinking (HED)						
No drink	917	1.6	referent	1,645	0.8	referent
Drink, no HED	1,214	2.4	1.62 (0.86–3.05)	1,097	1.7	2.01 (1.04–3.91)
Drink, yes HED	881	6.0	5.23 (2.89–9.45)	1,388	5.1	8.59 (4.59–16.07)
Illicit drug use						
No	2,118	2.2	referent	3,119	1.4	referent
Yes	894	5.6	2.87 (1.86–4.43)	1,012	4.4	3.87 (2.47–6.06)
Impulsivity						
Low	1,460	2.1	referent	2,124	1.9	referent
High	1,552	4.2	2.07 (1.30–3.29)	2,007	2.4	1.54 (0.98–2.42)
Efficacy to avoid fights						
Low	1,634	4.3	referent	2,116	2.9	referent
High	1,378	2.0	0.57 (0.26–0.92)	2,015	1.4	0.53 (0.33–0.85)
Depressive symptoms						
Low	1,407	2.7	referent	2,060	1.6	referent
High	1,605	3.7	1.84 (1.19–2.86)	2,071	2.8	2.67 (1.66–4.31)
Attitudes about peer violence						
Low	1,402	2.1	referent	2,079	1.5	referent
High	1,610	4.2	1.75 (1.12–2.74)	2,052	2.8	1.55 (0.97–2.48)
Attitudes about date violence						
Low	1,659	2.0	referent	2,272	1.3	referent
High	1,353	4.7	2.21 (1.42–3.42)	1,859	3.2	2.65 (1.65–4.25)
Family/Peer level						
Parental monitoring						
Low	1,700	4.6	referent	2,229	3.2	referent
High	1,312	1.4	0.39 (0.22–0.66	1,902	1.0	0.38 (0.22–0.65)
Parental positive affect						
Low	1,705	3.9	referent	2,288	2.6	referent
High	1,307	2.4	0.55 (0.35–0.88)	1,843	1.6	0.57 (0.35–0.91)
Peer delinquency						
Low	1,500	1.5	referent	2,327	1.0	referent
High	1,512	4.9	3.30 (2.03–5.37)	1,804	3.8	4.69 (2.78–7.92)

Table 1. Continued.

	SV perpetration					
	Dating relationship[a]			Same-sex peer relationship[b]		
	n	%	OR_{adj} (95% CI)[c]	*n*	%	OR_{adj} (95% CI)[c]
Social support						
Low	1,689	4.0	referent	2,324	3.0	referent
High	1,323	2.2	0.56 (0.35–0.90)	1,807	1.1	0.38 (0.22–0.66)
Childhood physical abuse						
No	2,258	2.8	referent	3,214	1.8	referent
Yes	754	4.4	1.52 (0.97–2.32)	917	3.5	1.92 (1.22–3.03)
Childhood sexual abuse						
No	2,697	2.6	referent	3,766	1.5	referent
Yes	315	8.9	4.54 (2.78–7.69)	365	9.3	8.33 (5.56–14.28)
Witness domestic violence						
No	1,950	2.8	referent	2,831	1.6	referent
Yes	1,062	4.0	1.52 (0.96–2.38)	1,300	3.4	2.32 (1.52–3.70)
Community level						
School connectedness						
Low	1,900	3.6	referent	2,606	2.1	referent
High	1,112	2.5	0.67 (0.43–1.06)	1,525	2.3	1.04 (0.67–1.61)
Community violence						
Low	1,437	1.3	referent	2,208	0.7	referent
High	1,575	5.0	3.37 (1.97–5.77)	1,923	3.8	4.65 (2.59–8.36)

CI, confidence interval
[a] Only assessed for respondents who indicated having been on a date during the 12 months prior to completing the survey (*n*=3,012).
[b] Assessed for entire sample (*n*=4,131).
[c] Odds ratios (OR) adjusted only for sex, grade, race/ethnicity, and family status.

Outcome Variables

SV perpetration was assessed within both dating and same-sex peer relationships. These 2 types of relationship categories were mutually exclusive for the purpose of this study because the respondents were asked about people they dated first, and then, when asked about same sex peers, respondents were directed to exclude dates, siblings or other family members. In both cases, respondents were asked if they had *forced (a dating partner/ same-sex peer) to have sex or to do something sexual that they did not want to do* in the past 12 months.[14] Response options for both questions were never, 1–3 times, 4–9 times, and 10 or more times; however, because of skewed data, these items were dichotomized (never versus ever). Analyses were conducted separately for each relationship type.

Explanatory Variables

Eighteen self-report variables, representing the individual, family/peer, and community levels of the social ecological model, were assessed. Unless otherwise specified, scale scores were computed for all explanatory variables and then dichotomized using a median-split.

Individual Level Factors

SV Victimization. As with SV perpetration, victimization was assessed both within a dating and same-sex peer relationship with the item: *Has (a dating partner/ same-sex peer) forced you to have sex or to do something sexual that you did not want to do* in the past 12 months.[14] Response options included never, 1–3 times, 4–9 times, and 10 or more times; once again, because of skewed data, these items were dichotomized (never versus ever).

Delinquency. Delinquency was assessed using an 8-item measure based on the Delinquency Scale used in the National Longitudinal Study of Adolescent Health (eg, Resnick et al[34]). Sample items include "*How often did you deliberately damage property that didn't belong to you?*" and "*How often did you steal things?*" Response alternatives included: Never, 1 or 2 times, 3 or 4 times, and 5 or more times. In the current study, the scale had high internal consistency (α=0.80).

Gang Interest or Involvement. Gang involvement was assessed using the single item, "*Which answer best describes how you feel about joining a gang?*" Response options included, "I

don't want to join a gang;" "I would like to join a gang;" "I am in a gang now;" "I am in a gang, but would like to get out of it;" and "I was in a gang, but I got out of it." Respondents who selected the first response were categorized as having no gang interest or involvement. All other respondents were categorized as having at least some gang interest or involvement.

Heavy Episodic Drinking (HED). HED was assessed with the question "*During the past 12 months, on how many days did you drink 5 or more drinks in a row?*" Respondents were considered to have engaged in HED if they reported ever having had 5 or more drinks in a row (National Institute on Alcohol Abuse and Alcoholism[35]). Because not all respondents reported having consumed alcohol, this variable was trichotomized into the following categories: non-drinker; drinker but no HED; and drinker with HED.

Drug Use. Drug use was assessed with the question "*During the past 12 months, on how many days did you use inhalants (glue or solvents) or illegal drugs such as marijuana, cocaine, or heroin?*" Because the majority of respondents indicated little or no drug use, this variable was dichotomized (no drug use versus some drug use).

Impulsivity. Impulsivity was assessed by a 4-item measure adapted from Bosworth and Espelage.[36] Sample items included "*I have a hard time sitting still*" and "*I do things without thinking*." Response alternatives include never; rarely; sometimes; often; and always. In the current study, the scale had good internal consistency (α=0.79).

Self-Efficacy to Avoid Fights. Self-efficacy was assessed by a 7-item measure adapted from Bosworth and Espelage.[36] Respondents were asked their level of confidence with being able to make a series of behavioral choices. Sample items include "*Stay out of fights by choosing other solutions*" and "*Avoid a fight by walking away.*" Response options included not at all confident; not very confident; unsure; somewhat confident; and very confident. In the current study, the scale had high internal consistency (α=0.88).

Depressive Symptoms. Symptoms of depression were assessed using a 6-item measure developed by Orpinas.[37] Sample items include "*In the past 30 days, how often were you very sad?*" and "*In the past 30 days, how often did you sleep a lot more or a lot less than usual?*" Response options included never, rarely, sometimes, often, and always. In the current study, the scale had high internal consistency (α=0.85).

Attitudes Toward Dating and Same-Sex Peer Violence. Two scales were used to assess attitudes toward violence within dating (10-item scale) and same-sex peer relationships (8-item scale), both of which were adapted from Foshee et al.[38] Half of the questions on each scale focusing on boys' use of violence and the other half focusing on girls' use of violence. Sample items from the dating violence scale include "*It is okay for a boy to hit his girlfriend if she did something to make him mad*" and "*It is okay for a girl to hit her boyfriend if he insulted her in front of friends*." Sample items from the same-sex peer violence scale include "*Boys sometimes deserve to be hit by other boys*" and "*It is okay for a girl to hit another girl if that girl hit her first*." A 4-point Likert scale, anchored by strongly disagree and strongly agree, was used for response alternatives. In the current study, both scales had high internal consistency (α=0.82 and α=0.92 for the attitudes toward dating violence and the attitudes toward same-sex peer violence, respectively).

Family/Peer Level Factors

Parental Monitoring. The extent to which respondents felt that their parents monitored their behavior was assessed with a 7-item measure adapted from work by Loeber et al.[39] Sample items include "*If your parents/guardians were not at home, how often did you leave a note or call to let them know where you were going*" and "*When you were out, did your parents/guardians know what time you would be home?*" Response alternatives included almost never, sometimes, and almost always. In the current study, this scale had good internal consistency (α=0.76).

Parental Positive Reinforcement. Respondents indicated the extent to which their parents used positive rewards and encouragement for appropriate behavior with a 5-item measure adapted from work by Loeber et al.[39] Sample items include "*In the past 30 days, when you did something that your parents/guardians liked or approved of, how often did one of them give you a hug, pat on the back or kiss for it?"* and "*In the past 30 days, when you did something that your parents/guardians liked or approved of, how often did one of them give you a special privilege such as staying up late, watching TV, or doing some special activity?*" Response alternatives included almost never, sometimes, and almost always. In the current study, this scale had good internal consistency (α=0.79).

Peer Delinquency. Respondents indicated the extent to which their friends had engaged in eight delinquent behaviors. Sample items included "*In the past 12 months, how many of your friends have stolen things*" and "*In the past 12 months, how many of your friends have used a weapon to threaten or injure someone?*" Response alternatives included none of them, very few of them, some of them, most of them, and all of them. In the current study, this scale had high internal consistency (α=0.85).

Social Support. Respondents indicated the extent to which they had adults (at school), family, and friends to whom they could talk to if needed using a 9-item measure developed by Vaux.[40] Sample items include "*At school, there are adults I can talk to, who care about my feelings and what happens to me*" and "*I have friends I can talk to, who give good suggestions and*

advice about my problems." Response alternatives include not at all, some, and a lot. In the current study, this scale had high internal consistency (α=0.88).

Violence in Childhood. Respondents indicated their experience with 3 forms of child maltreatment using a dichotomous (yes/no) response alternative. Experience with witnessing domestic violence was assessed using the question: "*Before you were 10 years old did you ever see or hear one of your parents/guardians being hit, slapped, punched, shoved, kicked, or otherwise physically hurt by their spouse or partner?*" Experience with childhood physical abuse was assessed using the question: "*Before you were 10 years old did you ever have injuries, such as bruises, cuts, or broken bones, as a result of being spanked, struck, or shoved by your parents or guardians or their partners?*" Experience with childhood sexual abuse was assessed using the question: "*Before you were 10 years old did someone ever force you to have sex or to do something sexual that you did not want to?*" Responses to each item were treated individually in analyses.

Variables as Proxies for the Community Level

School Connectedness. Respondents indicated the extent to which they felt connected to their school using a 3-item measure adapted from the National Longitudinal Study of Adolescent Health (eg, Resnick et al[34]). Sample items include "*You feel close to people at your school*" and "*You feel like you are part of your school*." A 5-point Likert scale, anchored by strongly disagree (1) and strongly agree (5), was used for response options. In the current study, this scale had good internal consistency (α=0.72).

Witnessing Community Violence. Respondents indicated the extent to which they were exposed to six types of violence in their home, school, or neighborhood using a measure based on the work of Richters and Martinez.[41] Sample items included "*I have heard guns being shot*" and "*I have seen somebody being beaten up*." Response options included never, once or twice, a few times, and many times. In the current study, this scale had high internal consistency (α=0.88).

Statistical Analyses

There were some missing data, which was most prevalent for the 7th graders who had difficulty completing some of the measures at the end of the questionnaire. Missing data were imputed under the Missing at Random (MAR) assumption using all available auxiliary variables to inform the missing data process. To do so, we used factor analysis to generate aggregate factor scores to represent the information from all of the variables in the dataset. These factors were then included during the imputation process. SAS PROC MI was used to generate 20 imputations of missing data using the MCMC algorithm. Study analyses were conducted using these imputed data and results from statistical procedures were appropriately combined using PROC MIANALYZE (see www.SAS.com).

Analyses for both relationship types (i.e., dating versus same-sex peer) followed the same analytic process. First, logistic regression analyses were conducted separately for each potential explanatory variable to identify the risk and protective factors that were significantly associated with SV perpetration. Odds ratios (ORs) and 95% confidence intervals (CIs) from these analyses were adjusted for participants' grade (eg, 7th, 9th, or 11 th /12 th); sex; race/ethnicity (Hispanic, white non-Hispanic, black non-Hispanic, other non-Hispanic); and family status (living with both biological mother and father versus other living arrangement). Second, all explanatory variables that were significantly associated with the outcome variables at the $p<0.01$ level were then included in a multivariable logistic regression analysis using a manual, backwards elimination to identify the most parsimonious model that fit the data.

Fit statistics for the final model were calculated using the mean of the fitted values from the 20 imputed data sets (eg, Faris et al[42], Kärnä et al[43]). Fit of the final model was assessed in multiple ways. First, a likelihood ratio test was computed to assess the ratio of the maximized value of the likelihood function for the full model compared to the maximized value of the likelihood function for an intercept only model. A receiver-operating-characteristic (ROC) curve analysis was conducted to demonstrate the predictability of the final model. Finally, the youth sample was partitioned into ten groups according to their predicted probabilities for engaging in SV. The Hosmer-Lemeshow goodness-of-fit chi-statistic was used to show whether the observed number of outcome events significantly differed from the predicted number of outcome events for these ten groups (low chi-square values with high p-values provide evidence for a good model fit with the data).

Composition of the Sample

Almost 52% of the entire sample (n=4,131) were female. Forty five percent of the sample self-identified as Hispanic or Latino, 23% identified as Non-Hispanic African-Americans, 22% identified as Non-Hispanic Whites, and about 10% identified as Non-Hispanic other (this category included Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander/multi-racial). Regarding family status, about half (54%) of the respondents indicated living with both their biological mother and father. The remaining respondents reported some other living arrangement (eg, living with a single parent or other relative). Some of the analyses reported here involve only those respondents who indicated having been on a date within the last 12 months (n=3,017). The distribution of demographic variables in the dating sample was virtually identical to the full sample and no statistical differences were identified.

RESULTS

Just over 3% of the sample reported SV perpetration against a date and just over 2% reported SV perpetration against a same-sex peer. The rate of reported SV victimization was 6.7% by a date and 3.5% by a same-sex peer. Comparisons between girls and boys indicated that girls were significantly more likely to have been the victim of dating SV (OR=1.62, 95% CI: 1.21-2.20), while boys were significantly more likely than girls to have perpetrated SV in both dating (OR=2.41, 95% CI: 1.56-3.73) and same-sex peer (OR=2.51, 95% CI: 1.59-3.96) relationships. There were no significant sex differences regarding being the victim of peer SV (OR=1.11, 95% CI: 0.79-1.54).

Preliminary Results

Dating Relationships. In order to establish a foundation for subsequent analyses, an initial model containing only demographic variables (eg, sex, grade in school, and family status) was computed. Grade in school and sex of the respondent were the only demographic variables that were significantly associated with the perpetration of SV against a date. Boys were almost 3 times more likely than girls to report perpetrating SV against a dating partner (OR=2.74; 95% CI = 1.73-4.35). Compared to 7th graders, 11th and 12th grade students were significantly *less* likely to report perpetrating SV against a dating partner (OR=0.46; 95% CI = 0.28-0.75). Race/ethnicity and family status were unassociated with SV perpetration in a dating relationship. All subsequent models assessing associations with SV perpetration against a dating partner or a same sex peer were adjusted for demographic variables.

As indicated in Table 1, all of the individual level variables were significantly positively associated with SV perpetration against a dating partner, and previous dating sexual victimization was a strong predictor. Respondents' belief that they have the ability to avoid fights was protective against SV perpetration of a dating partner. Most family level variables were significantly associated with SV perpetration against a dating partner. Parental monitoring, parental positive affection, and social support were protective against SV perpetration of a dating partner. Of the 2 variables assessing community level influences, only exposure to violence in the respondent's community was significantly positively associated with reported SV perpetration of a date.

Same-Sex Peer Relationships. Respondent sex was the only demographic variable that was significantly associated with the perpetration of SV against a same-sex peer. Boys were 2.5 times more likely than girls to report perpetrating SV against a same-sex peer. Respondent race/ethnicity, grade in school, and family status were not statistically associated with reports of SV perpetration against a same-sex peer. See Table 1 (second column) for results, which are similar to the results for the dating relationships model.

Table 2. Multivariable logistic regression analyses of the associations between risk and protective factors and sexual violence (SV) perpetration across dating and same-sex peer relationships among high risk youth in grades, 7, 9, 11, and 12.

	SV perpetration	
	Dating relationships[a] OR_{adj}[c] (95% CI)	Same-sex peer pelationships[b] OR_{adj}[c] (95% CI)
SV victimization		
No	referent	referent
Yes	9.93 (6.02–16.39)	16.55 (19.50–28.83)
Delinquency		
Low		referent
High		2.24 (1.15–4.37)
Heavy episodic drinking (HED)		
None	referent	referent
Drink, but no HED	1.22 (0.62–2.39)	1.16 (0.56–2.42)
HED 1+ times	2.18 (1.13–4.19)	3.11 (1.54–6.32)
Attitudes about date violence		
Low	referent	
High	1.82 (1.14–2.92)	
Childhood sexual abuse		
No	referent	referent
Yes	2.22 (1.26–4.17)	2.86 (1.61–5.00)
Peer delinquency		
Low	referent	
High	1.85 (1.07–3.18)	
Social support		
Low		referent
High		0.51 (0.27–0.96)
Community violence		
Low	referent	referent
High	1.88 (1.07–3.32)	2.25 (1.18–4.30)

CI, confidence interval

[a] Only assessed for respondents who indicated having been on a date during the 12 months prior to completing the survey (n=3,012).

[b] Assessed for entire sample (n=4,131).

[c] Within a column, odds ratio (OR) adjusted for all variables in the model, including demographics and SV victimization history, not listed.

Multivariable Results

Dating Relationships. A multivariable model including the demographic variables, as well as those explanatory variables that were significantly associated with SV perpetration against a dating partner in the initial analyses were included in a single multivariable model. Table 2 (first column) includes those variables that were retained in the parsimonious model predicting SV perpetration against a dating partner. The sex of the respondent and grade in school were significantly

associated with SV perpetration against a dating partner in the model (data not shown). Specifically boys were more likely to perpetrate SV against a dating partner than girls (OR=3.44; 95% CI=2.05-5.57) and 11th/12th graders were less likely to perpetrate SV against a dating partner than 7th graders (OR=0.43; 95% CI=0.24-0.77).

Of the 17 potential risk and protective correlates that were associated with SV perpetration against a dating partner in the preliminary analysis, only 6 variables were retained in the final model (Table 2). SV victimization by a dating partner remained the strongest correlate, with those who reported SV victimization being 10 times more likely to also report perpetrating SV against a dating partner. Of the remaining explanatory variables in the model, engaging in heavy episodic drinking, holding attitudes that endorse dating violence, being the victim of childhood sexual abuse, having delinquent peers, and being exposed to community violence were all associated with approximately a 2 fold increase in the odds of reporting SV perpetration against a dating partner.

Analysis of fit statistics indicated that the model fit the data well. The log likelihood ratio test (LRT) results provided for the multivariable model indicated that the explanatory variables included in the final model improved the fit of the regression model to the data compared to a model without the explanatory variables ($LRT(14)=209.02$, $p<0.001$). The ROC analysis also indicated that the final model adequately discriminated between respondents who reported perpetrating SV against a dating partner and those who did not (Area under the ROC curve = 0.85). The Hosmer-Lemeshow goodness-of-fit chi-statistic for the full model indicated a good model fit as well (chi-square test (8)=6.18; p=0.63).

Same Sex Peer Relationships. As with SV perpetration against a dating partner, a multivariable model including the demographic variables and the explanatory variables that were significantly associated with SV perpetration against a same-sex peer in bivariate analyses, were included in a single multivariable model. Of the demographic variables, only sex of the respondent remained significant in the final multivariable model (data not shown). Specifically, boys were more than 2 times more likely to perpetrate SV against a same-sex peer than girls (OR=2.26; 95% CI=1.31-3.91).

Table 2 (second column) includes the 6 explanatory variables that were retained in the final model. Again, SV victimization by a same-sex peer in the 12 months prior to the survey was the strongest predictor of SV perpetration against a same-sex peer (OR=16.55). Engaging in other delinquent behaviors and being exposed to violence in the community were both associated with approximately a 2-fold increase in the odds of reporting SV perpetration against a same-sex peer. Similarly, engaging in heavy episodic drinking and being the victim of childhood sexual abuse were associated with more than a 3-fold increase in the odds of reporting same-sex peer SV perpetration. One protective factor was retained: respondents who were high on social support (from school, family, or friends) were half as likely to engage in SV perpetration against a same-sex peer as those who were low in social support.

As with the final dating relationship model, analysis of fit statistics indicated that the model predicting SV perpetration against a same-sex peer fit the data well. The log LRT results indicated that the explanatory variables retained in the final model improved the fit of the regression model to the data compared to a model without the explanatory variables ($LRT(14)=273.53$, $p<0.001$). The ROC analysis also indicated that the final model adequately discriminated between respondents who reported perpetrating SV against a same-sex peer and those who did not (Area under the ROC curve=0.89). The Hosmer-Lemeshow goodness-of-fit chi-statistic for the full model indicated a good model fit, as well (chi-square (8)=4.13; p=0.84).

DISCUSSION

Findings from this study suggest that adolescents perpetrate SV in both dating and same-sex peer relationships and that several risk correlates and one protective correlate are associated with perpetration. Controlling for all other variables in the model, boys were significantly more likely than girls to be perpetrators of SV in both dating and same-sex peer relationships. Consistent with previous research,[5,17] the strongest correlate of perpetration in both contexts was by far, the experience of prior victimization in the same type of relationship. For example, Banyard et al[5] found that youth who were victims of sexual abuse in their life time were 21 times more likely to report perpetrating sexual abuse as an adolescent. However, even when controlling for victimization experiences, 3 other variables were found to be strong correlates - heavy episodic drinking, a history of child sexual abuse, and exposure of community violence. All 3 were significantly associated with SV perpetration against both dating and same-sex peers.

Our hypothesis that findings would be similar across relationship types was partially supported because there were shared risk factors, but the type of relationship (i.e., relationship between perpetrator and victim) still matters because the significant risk and protective factors are not exactly the same for each type of relationship. Attitudes toward violence are only significantly associated with dating SV perpetration, most likely because the attitudinal questions were different for each relationship type. The delinquency factors are such that peer delinquency is associated with perpetration in dating relationships while the respondent's own delinquent behaviors are what matters in same-sex peer relationships. These findings are consistent with previous research of male perpetration, connecting negative attitudes toward women and negative peer norms to perpetration of sexual and other violence against a female dating partner.[12,13,25] The findings are also consistent with previous youth violence research that

connects one's own delinquency with peer violence more generally.[44]

The only positive correlate (or protective factor) to remain in either of the final models was social support. Reporting a strong support system was associated with decreased likelihood of same-sex peer SV perpetration. One reason why social support may be more relevant in the same-sex peer context in this sample might be that same-sex peers are likely to be close in age so social support, at least from peer networks, may be stronger than social support in dating relationships; dating may be more common with older or younger partners who are not part of the peer social support network. Also, same-sex peer perpetration, at least among boys, may be highly associated with homophobic bantering, in which school-age male peers attempt to express hyper-masculinity.[45] Therefore, having a strong social network could prevent the likelihood of perpetration of a homophobic nature which may be highly associated with same-sex peer SV perpetration. Kendrick et al[22] found an association between social support and decreased likelihood of bullying perpetration, which may be similar to certain kinds of SV perpetration. Also, some have shown evidence of a link between homophobic teasing and SV perpetration.[8] However, further research is needed to shed light on why social support and other factors are relevant in one relationship (same-sex peer) but not both. Future research should examine these and other risk and protective factors for both types of relationships to confirm which factors are shared across the 2 relationships. Another avenue for future research is to examine whether some of the protective factors examined in this study may work to buffer the effects of the risk factors instead of having direct associations with perpetration. This information can inform how best to target prevention efforts.

Our findings suggest that individual factors assessing multiple levels of the social ecology were significant correlates in the final model. It appears that a combination of individual, peer and family level factors as well as individual's perceptions of community factors play a role in the likelihood to perpetrate SV, regardless of the type of relationship between victim and perpetrator. For example, beyond past 12 month victimization histories, individual histories of child sexual abuse cut across both types of perpetration, as did the propensity to drink heavily. At the peer level, having peers that were delinquent was an important factor for dating SV perpetration, while social support was important for same-sex peer perpetration. An individual's exposure to community violence appeared to have an influence regardless of victim-perpetrator relationship. Our study confirms the importance of including variables that tap different levels of the social ecology, as the best statistical model seems to be a combined model.

This study has a number of strengths. Unlike most other studies that examine SV perpetration, the current study examines a wide array of both risk and protective factors that seek to assess different levels of the social ecology. Measuring numerous potential risk and protective factors in the same study allowed us to determine the impact of each factor while controlling for the others. In addition, the study sample was large and we measured and compared 2 types of SV perpetration. More work like this, particularly within the same-sex relationship, is needed to further understand the differences across the 2 relationships and inform prevention efforts.

LIMITATIONS

This study is subject to some limitations. The data were from a high risk urban community so the findings may not be representative of other communities. In particular, 45% of the sample was Hispanic or Latino, which further suggests that this high risk community may not be generalizable to all high risk communities. Also, the sensitive nature of the questions and the fact that the data were self-reported may have resulted in some reporting bias (lack of disclosure). In addition, this study defined SV perpetration very broadly so we were not able to determine the severity of the SV perpetration. The question measured forced sex as well as forcing someone to "do something sexual." Also, similar to many studies on this topic, only one item was used to measure SV in each relationship. Ideally, SV should be measured with numerous behaviorally specific items to increase disclosure rates.[46] The combination of these factors could explain the low prevalence rates we found in this study (3% in dating relationships and 2% in same-sex peer relationships). Additionally, these are cross-sectional data so we are not able to determine anything beyond associations between the risk factors and the violence outcomes. Also, the exposure to community violence item also includes violence in the home so it is not a pure measure of experiences occurring in the community, and other important community level factors that may relate to SV perpetration (eg, neighborhood disorganization, collective efficacy) were not assessed. Further, this study only captured SV by a date or same-sex peer and did not include SV perpetrated by an opposite-sex peer so did not assess the full range of SV. However, this study allowed a comparison of dating SV perpetration to a much less studied relationship type (same-sex peer) and suggests that there are differences in risk and protective factors associated with these 2 types of SV perpetration.

CONCLUSION

These findings have implications for prevention of SV. First, data from this study suggest that prevention programs should start when students are young, with particular focus on middle school boys (particularly in the case of same-sex perpetration). Findings suggest that, prevention efforts may need slightly different foci to address different types of SV perpetration. It appears that any prevention efforts should focus on prior peer/dating SV victimization, heavy alcohol use, youth delinquency and involvement with delinquent peers, and the

larger issue of violence in the community, as this seemed to be an important predictor of SV perpetrator in the sample in both relationships. Past childhood experiences with sexual abuse, while not modifiable, should also be addressed in prevention efforts with youth. Comprehensive prevention efforts that address different types of peer-perpetrated violence in schools, like bullying, homophobic teasing, and SV, may be most beneficial and have been suggested by others.[8] Perhaps the most promising finding in terms of health promotion was that having social support (from other peers, but also teachers and parents) appears to decrease the likelihood of perpetration against same-sex peers. This finding is a promising avenue on which prevention strategies might focus. In the meantime, more research is needed to replicate this and other findings in this study in more representative samples and explore further the importance of social support and the other shared and unique risk and protective factors identified here in dating and same-sex relationships across the full range of SV.

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DEDICATION

This work is dedicated to the memory of our co-author Merle E. Hamburger, PhD, who passed away before the paper was completed. Merle conducted the final analysis used in this paper and drafted the methods and findings sections. He was a strong quantitative methodologist dedicated to his research on youth and sexual violence prevention. With humor and compassion, Merle positively affected the lives of those who knew him. His scholarly contributions will have a lasting impact on improving the lives of youth.

Address for Correspondence: Kathleen C. Basile, Division of Violence Prevention, Centers for Disease Control and Prevention, Mailstop F64, 4770 Buford Highway, Atlanta, GA, 30341-3724. kbasile@cdc.gov.

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REFERENCES

1. Black MC, Basile KC, Breiding MJ, et al. The National Intimate Partner and Sexual Violence Survey (NISVS):2010 summary report. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention;2011.
2. Tjaden P, Thoennes N. Extent, nature, and consequences of rape victimization: Findings from the national violence against women survey (NCJ 210346). Washington, DC: U.S. Department of Justice, National Institute of Justice;2006.
3. Basile KC, Saltzman LE. Sexual violence surveillance: uniform definitions and recommended data elements. Version 1.0. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control:2002.
4. Centers for Disease Control and Prevention. Youth risk behavior surveillance — United States, 2009. Surveillance Summaries, June 4, 2010. *MMWR*. 2010;59:No. SS-5.
5. Banyard VL, Cross C, Modecki KL. Interpersonal violence in adolescence: Ecological correlates of self-reported perpetration. *J Interpers Violence*. 2006;21(10):1314–1332.
6. Borowsky IW, Hogan M, Ireland M. Adolescent sexual aggression: Risk and protective factors. *Pediatrics*. 1997;100:1–8.
7. Coker AL, McKeown RE, Sanderson M, et al. Severe dating violence and quality of life among South Carolina high school students. *Am J Prev Med*. 2000;19:220–227.
8. Espelage D, Basile KC, Hamburger ME. Bullying perpetration and subsequent sexual violence perpetration among middle school students. *J Adolesc Health*. 2012;50:60–65.
9. Morris RE, Anderson MM, Knox GW. Incarcerated adolescents' experiences as perpetrators of sexual assault. *Arch Pediatric Adolesc Med*. 2002;156:831–835.
10. Ozer E J, Tschann JM, Pasch LA. Violence perpetration across peer and partner relationships: Co-occurrence and longitudinal patterns among adolescents. *J Adolesc Health*. 2004;34:64–71.
11. Kilpatrick DG, Edmunds CN, Seymour AK. *Rape in America: A report to the nation*. Arlington, VA: National Victim Center & Medical University of South Carolina;1992.
12. DeKeseredy WS, Schwartz MD. Woman abuse on campus: Results from the Canadian National Survey. Thousand Oaks: Sage Publications;1998.
13. Malamuth N. An evolutionary-based model integrating research on the characteristics of sexually coercive men. In J Adair, K Dion, D Belanger (Eds), Advances in Psychological Science. Vol. 2. Personal, social, and developmental aspects. Hove, UK: Psychology Press;1998.
14. Foshee VA. Gender differences in adolescent dating abuse prevalence, types and injuries. *Health Education Research*. 1996;11:275–286.
15. Foshee VA, Benefield T, Suchindran C, et al. The development of four types of adolescent dating and selected demographic correlates. *J Resc Adolesc*. 2009;19(3):380–400.
16. Sears HA, Byers ES, Price EL. The co-occurrence of adolescent boys' and girls' use of psychologically, physically and sexually abusive behaviors in their dating relationships. *J Adolesc*. 2007;30:487–504.
17. Bennett L, Fineran S. Sexual and severe physical violence among high school students. *Am J Orthopsychiatry*. 1998;67:645–652.

18. Hill C, Kearl H. *Crossing the line: Sexual harassment at school*. Washington, DC: AAUW;2011.
19. Fineran S, Bolen R. Risk factors for peer sexual harassment in schools. *J Interpers Violence*. 2006;21:1169–1190.
20. Malamuth NM, Linz D, Heavey CL. Using the confluence model of sexual aggression to predict men's conflict with women: A ten-year follow-up study. *J Pers Soc Psychol*. 1995;69:353–369.
21. Ali B, Swahn M, Hamburger M. Attitudes affecting physical dating violence perpetration and victimization: findings from adolescents in a high-risk urban community. *Violence Vict*. 2011;26(5):669–683.
22. Kendrick K, Jutengren G, Stattin H. The protective role of supportive friends against bullying perpetration and victimization. *J Adolesc*. 2012; 35(4):1069–1080.
23. Ageton SS. *Sexual assault among adolescents*. Lexington, MA: Lexington Books;1983.
24. DeKeseredy WS, Kelly K. Woman abuse in university and college dating relationships: The contribution of the ideology of familial patriarchy. *J Human Justice*. 1993;*4:*25–52.
25. Muehlenhard CL, Linton MA. Date rape and sexual aggression in dating situations: Incidence and risk factors. *J Counsel Psychol*. 1987;34:186–196.
26. Wolfe DA, Wekerle C, Scott K, et al. Predicting abuse in adolescent dating relationships over 1 year: The role of child maltreatment and trauma. *J Abnorm Psychol*. 2004;113:406–415.
27. Wolf KA, Foshee VA. Family violence, anger expression styles, and adolescent dating violence. *J Fam Violence*. 2003;18:309–316.
28. Salter D, McMillan D, Richards M, et al. Development of sexually abusive behavior in sexually victimized males: A longitudinal study. *Lancet*. 2003;*361*(9356):471–476.
29. Ybarra ML, Bull SS, Kiwanuka J, et al. Prevalence rates of sexual coercion victimization and perpetration among Uganda adolescents. *AIDS Care: Psychological and Socio-medical Aspects of AIDS/HIV*. 2012;1–9.
30. O'Keefe M, Treister L. Victims of dating violence among high school students: Are the predictors different for males and females? *Violence Against Women*. 1998;4:195–223.
31. Malamuth NM, Sackloskie R, Koss M, et al. The characteristics of aggressors against women: testing a model using a national sample of college students. *J Consult Clin Psychol*. 1991;59:670–681.
32. Swahn MH, Simon TR, Arias I, et al. Measuring Sex Differences in Violence Victimization and Perpetration Within Date and Same-Sex Peer Relationships. *J Interpers Violence*. 2008;*23(8):*1120–1138.
33. Swahn MH, Simon TR, Hertz M, et al. Linking dating violence, peer violence, and suicidal behaviors among high-risk youth. *Am J Prev Med*. 2008;34(1):30–38.
34. Resnick MD, Bearman PS, Blum RW, et al. Protecting adolescents from harm: Findings from the National Longitudinal Study of Adolescent Health. *JAMA*. 1997;278:823–832.
35. National Institute of Alcohol Abuse and Alcoholism. NIAAA Council Approves Definition of Binge Drinking. NIAAA Newsletter, winter, No. 3, p. 3, NIH Publication No. 04–5346, Bethesda, MD: National Institute of Alcohol Abuse and Alcoholism, 2004.
36. Bosworth K, Espelage D. *Teen conflict survey*. Bloomington, IN: Center for Adolescent Studies, Indiana University. 1995 (Unpublished).
37. Orpinas P. *Modified depression scale*. Houston*:* University of Texas Health Science Center at Houston. 1993.
38. Foshee VA, Bauman KE, Arraiga XB, et al. An evaluation of Safe Dates, an adolescent dating violence prevention program. *Am J Public Health*. 1998;*88:*45–50.
39. Loeber R, Farrington D, Stouthamer-Loeber M, et al. *Antisocial behavior and mental health problems: Explanatory factors in childhood and adolescence*. NIMH grant proposal. 1989.
40. Vaux A. *Social support: Theory, research, and intervention*. New York: Praeger. 1998.
41. Richters JE, Martinez P. *Things I have seen and heard: An interview for young children about exposure to violence*. Rockville, MD: National Institute of Mental Health. 1990.
42. Faris PD, Ghali WA, Brant R, et al. Multiple imputation versus data enhancement for dealing with missing data in observational health care outcome analyses. *J Clin Epidemiol*. 2002;55(2):184–191.
43. Kärnä A, Voeten M, Little TD, et al. A large-scale evaluation of the KiVa anti-bullying program: Grades 4–6. *Child Development*. 2011;82(1): 311–330.
44. Hawkins JD, Herrenkohl TI, Farrington DP, et al. *Predictors of youth violence*. Office of Juvenile Justice and Delinquency Prevention, Juvenile Justice Bulletin. 2000.
45. Poteat VP. Peer group socialization of homophobic attitudes and behavior during adolescence. *Child Dev*. 2007;78:1830–1842.
46. DeKeseredy WS. Enhancing the quality of survey data on woman abuse: Examples from a national Canadian study. *Violence Against Women*. 1995;1:158–173.

Co-Occurring Physical Fighting and Suicide Attempts among U.S. High School Students: Examining Patterns of Early Alcohol Use Initiation and Current Binge Drinking

Monica H. Swahn, PhD, MPH* * Georgia State University, School of Public Health, Atlanta, Georgia
Robert M. Bossarte, PhD†‡ † University of Rochester, Department of Psychiatry, Rochester, New York
Jane B. Palmier, JD, MPH* ‡ Center of Excellence for Suicide Prevention, Department of Veterans Affairs, Canandaigua, New York
Huang Yao, MA*

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Introduction: A growing body of empirical research documents a significant co-occurrence of suicide attempts and interpersonal violence among youth. However, the potential role of early alcohol use initiation and current heavy alcohol use as correlates of this comorbidity has not been examined in a nationally representative sample of high school students.

Methods: We based our analyses on cross-sectional data from the 2009 Youth Risk Behavior Survey, which includes a nationally representative sample (n=16,410) of high school students in grades 9 through 12 in the United States. Multinomial logistic regression analyses were conducted to test the associations between measures of alcohol use (early alcohol use initiation and heavy drinking) and comorbid suicidal and violent behavior while controlling for potential confounders.

Results: Among high school students, 3.6% reported comorbid physical fighting and suicide attempt in the past year. Early alcohol use (prior to age 13) and heavy drinking (5 or more drinks in a row) were strongly associated with comorbid reports of physical fighting and suicide attempts (Adj. odds ratio [OR]=3.12; 95% confidence interval [CI]:2.49-3.89) and (Adj. OR=3.45; 95%CI:2.63-4.52).

Conclusion: These findings underscore the importance of both early alcohol use initiation and heavy drinking as statistically significant correlates of comorbid fighting and suicide attempts among youth. While future research is needed to determine the temporal ordering between problem drinking and violent or suicidal behaviors, existing prevention programs may benefit from including components aimed at reducing and delaying alcohol use. [West J Emerg Med. 2013;14(4):341–346.]

INTRODUCTION

Recent research on adolescents suggests a strong link between violence involving other persons and self-directed violence.[1–10] Previous studies have reported a comparatively high prevalence of comorbid self-directed and interpersonal violence among youth in the United States (U.S.) and in Africa.[2–4, 8,9,11–12] While the overlap appears significant and of great concern to the general public health community, few studies have examined specific and potentially modifiable risk factors associated with co-occurring interpersonal and self-directed violence.

Early alcohol use initiation has been identified as a strong risk factor for a number of adverse health outcomes including self-directed and interpersonal violence.[8,13–23] Recent research has documented that early alcohol use initiation is associated with both self-directed violence[8,13,14,21–23] and interpersonal violence.[8,17] However, there is a scarcity of research that has examined specific alcohol factors that may contribute to involvement in co-occurring violent and suicidal behaviors.

The extent to which early alcohol use initiation is specifically associated with the overlap of self-directed and interpersonal violence has not been previously reported.

Reviews of prior research indicate that both suicidal and violent behaviors may share several characteristics associated with increased risk for both forms of violence.[10] In particular, it is clear that aggressiveness, impulsivity, and correlates of poor mental health, such as substance abuse, depressive symptomology and hopelessness, can increase risk of both suicidal and violent behaviors.[10,24,25] Moreover, research also shows that youth who perform poorly in school have reported higher levels of suicidal ideation, interpersonal violence and substance use.[26,27] However, there is little existing literature on the extent to which co-occurring violent and suicidal behavior actually share common risk factors identified with either suicidal behavior or interpersonal violence.[11,12] Among youth, early alcohol use initiation is of particular importance because of the existing research linking early alcohol use to different forms of violence and evidence that early alcohol use may be reduced by existing prevention strategies.

The purpose of the current study is to examine early alcohol use initiation, prior to age 13, as a specific risk factor associated with co-occurring suicidal and violent behaviors among a nationally representative sample of boys and girls in the U.S. Other factors that have been associated with violence or suicidal behaviors, either empirically or theoretically, in earlier studies and that are available within the Youth Risk Behavior Survey were included as potential confounders (ie, sadness, low academic grades, binge drinking, weapon carrying, and drug use.[1,10, 27,28] The current study will determine the role of early alcohol use initiation in the comorbidity of self-directed and interpersonal violence and findings can be used to guide prevention and intervention programs.

METHODS

We based our analyses on data obtained from the 2009 national Youth Risk Behavior Survey (N=16,410). Students voluntarily completed the anonymous, self-administered questionnaire during a regular class period, following parental consent. Details of the study and the sampling strategy have been described elsewhere.[29] Briefly, the survey employed a 3-stage cluster sample design to produce a nationally representative sample of students in grades 9–12. All regular public, Catholic, and other private school students, in grades 9 through 12, in the 50 States and the District of Columbia were included in the sampling frame. Puerto Rico, the trust territories, and the Virgin Islands were excluded from the frame. Moreover, schools were selected systematically with probability proportional to enrollment in grades 9 through 12 using a random start. The survey sampled 196 schools. In terms of the class selection, all classes in a required subject or all classes meeting during a particular period of the day, depending on the school, were included in the sampling frame. Systematic equal probability sampling with a random start was used to select classes from each school that participated in the survey. The overall response rate was 71% (school response rate 81% and student response rate 88%). Analyses of this complex multistage survey were conducted with the SAS 9.1 and SUDAAN 10.0 statistical software packages to accommodate the sampling design and to produce weighted estimates.

Risk factors included in multivariate analyses were based on previous research and incorporated measures of low academic grades, weapon carrying, sadness, binge drinking and other drug use. The specific wording of these questions and the prevalence for each measure are provided in Table 1. All variables included in the analyses were already dichotomized in the public domain dataset. However, early alcohol use initiation and the outcome variables were manually recoded as described below. Consistent with past research, we coded early alcohol use initiation as a three 3-level variable to include those initiating alcohol use prior to age 13, those who initiated alcohol use after age 13, and those who were not alcohol users.[8,13,21,22] The outcome measure was based on the 2 questions that assessed any involvement in a suicide attempt or any involvement in physical fighting, both within the past 12 months. We combined the 2 measures to create a 4-level outcome variable to indicate involvement in both suicide attempts and physical fighting, involvement in physical fighting only, involvement in suicide attempts only, and involvement in neither suicide attempt nor physical fighting.

STATISTICAL ANALYSES

Weighted prevalence estimates for each of the risk factors are presented in Table 1. We conducted multinomial logistic regression analyses to determine the associations between early alcohol use initiation and suicide attempts and physical fighting, suicide attempt only, and physical fighting only relative to neither suicidal nor violent behaviors while controlling for the other potential confounders.

RESULTS

Overall, the prevalence of any physical fighting was 31.5%, and the prevalence of suicide attempt was 6.3% (Table 1). The prevalence of co-occurring physical fighting and suicide attempts was 3.6% (3.0% for boys and 4.2% for girls) in the national sample (Table 2). However, among early drinkers the prevalence of co-occurring physical fighting and suicide attempts was 9.4% (7.6% for boys and 11.5% for girls).

In the national sample, early drinking (Adj.odds ratio [OR]=5.42; 95% confidence interval [CI]: 3.36-4.17) was significantly associated with co-occurring physical fighting and suicide attempts (Table 3) relative to those who did not report early drinking and when controlling for possible confounders. Early drinking was associated with co-occurring physical fighting and suicide attempts for both boys (Adj.OR=4.17; 95% CI: 1.47-11.87) and girls (Adj.OR=6.50; 95% CI: 3.84-11.00) but appeared stronger for girls. For girls, initiating

Table 1. Wording of variables included in the analyses and their prevalence among United States' youth in the 2009 Youth Risk Behavior Survey.

Variable	Wording	Prevalence (%)
Low academic grades	Percentage of students who described their grades in school as mostly D's and F's during the past 12 months	5.9
Any weapon carrying	Percentage of students who carried a weapon such as a gun, knife, or club on one or more of the past 30 days	17.5
Any binge drinking	Percentage of students who had five or more drinks of alcohol in a row, that is, within a couple of hours, on one or more of the past 30 days	24.2
Any drug use exposure	Percentage of students who were offered, sold, or given an illegal drug by someone on school property during the past 12 months	22.7
Sadness	Percentage of students who felt so sad or hopeless almost every day for two weeks or more in a row that they stopped doing some usual activities during the past 12 months	26.1
Any physical fighting	Percentage of students who were in a physical fight one or more times during the past 12 months	31.5
Any suicide attempt	Percentage of students who actually attempted suicide one or more times during the past 12 months	6.3
Alcohol use initiation	Percentage of students who had their first drink of alcohol other than a few sips before age 13 years	21.1

drinking later was also associated with co-occurring physical fighting and suicide attempts (Adj.OR=2.28; 95% CI: 1.26-4.11), but this association was not statistically significant among boys (Adj.OR=2.23; 95% CI: 0.81-6.17).

In terms of predicting physical fighting, early drinking (Adj.OR=3.14; 95% CI: 2.54-3.88) was significantly associated physical fighting only (Table 3) relative to those who did not report early drinking and this finding was observed for both boys and girls in stratified analyses. Similarly, in terms of predicting suicide attempt only, early drinking (Adj.OR=3.28; 95% CI: 1.81-5.97) was significantly associated suicide attempt only (Table 3) relative to those who did not report early drinking and this finding was observed for both boys and girls in stratified analyses.

DISCUSSION

The prevalence of involvement in both suicide attempts and physical fighting in this study was similar to reports from

Table 2. Prevalence of suicide attempts and physical fighting by early drinking initiation among boys and girls in the United States (2009 YRBS).

	No fighting and no suicidal behavior %	Suicidal behavior only %	Physical fighting only %	Both fighting and suicidal behavior %
Overall	66.98	2.48	26.94	3.61
Early drinkers	44.52	3.97	42.15	9.36
Other drinkers	65.83	2.61	28.55	3.00
Non drinkers	83.19	1.31	14.69	0.81
Boys				
Overall	60.42	1.32	35.29	2.97
Early drinkers	40.51	1.78	50.15	7.55
Other drinkers	57.47	1.69	38.38	2.46
Non drinkers	77.93	0.51	21.06	0.50
Girls				
Overall	74.11	3.71	17.97	4.21
Early drinkers	50.35	6.93	31.19	11.53
Other drinkers	73.37	3.44	19.72	3.47
Non drinkers	89.48	2.27	7.09	1.16

Table 3. Adjusted multinomial logistic regression analyses of early drinking as a risk factor for involvement in suicide attempt and physical fighting among boys and girls in United States (2009 YRBS).

	Overall		Boys		Girls	
	Adj.OR[1]	(95%CI)	Adj.OR[1]	(95%CI)	Adj.OR[1]	(95%CI)
Both suicidal attempt and physical fighting						
Early drinkers	5.42*	(3.36-8.76)*	4.17*	(1.47-11.87)*	6.50*	(3.84-11.00)*
Other drinkers	2.28*	(1.37-3.78)*	2.23	(0.81-6.17)	2.28*	(1.26-4.11)*
Low academic grades	2.66*	(1.68-4.22)*	1.99*	(1.10-3.59)*	3.28*	(1.69-6.37)*
Any weapon carrying	4.38*	(3.09-6.22)*	4.72*	(2.66-8.41)*	3.98*	(2.60-6.08)*
Any binge drinking	2.85*	(2.13-3.82)*	4.84*	(2.78-8.42)*	1.65*	(1.08-2.50)*
Any drug use exposure	1.78*	(1.31-2.43)*	2.19*	(1.27-3.75)*	1.60*	(1.14-2.26)*
Sadness	14.05*	(9.89-19.55)*	20.99*	(13.35-33.00)*	10.28*	(6.40-16.53)*
Physical fighting only						
Early drinkers	3.14*	(2.54-3.88)*	2.61*	(2.12-3.22)*	4.47*	(3.07-6.51)*
Other drinkers	2.28*	(1.37-3.78)*	2.18*	(1.86-2.54)*	2.62*	(1.93-3.55)*
Low academic grades	1.47*	(1.15-1.87)*	1.30	(0.95-1.79)	1.82*	(1.31-2.53)*
Any weapon carrying	2.50*	(2.04-3.07)*	2.50*	(1.97-3.16)*	2.57*	(1.89-3.49)*
Any binge drinking	1.84*	(1.63-2.07)*	1.90*	(1.58-2.28)*	1.83*	(1.50-2.23)*
Any drug use exposure	1.56*	(1.38-1.76)*	1.46*	(1.26-1.70)*	1.75*	(1.44-2.12)*
Sadness	1.48*	(1.29-1.69)*	1.47*	(1.19-1.83)*	1.48*	(1.24-1.77)*
Suicide attempt only						
Early drinkers	3.28*	(1.81-5.97)*	4.47*	(1.78-11.23)*	3.08*	(1.57-6.04)*
Other drinkers	2.01*	(1.22-3.30)*	3.71*	(1.82-7.57)*	1.58	(0.93-2.70)
Low academic grades	1.73*	(1.09-2.74)*	2.47*	(1.37-4.46)*	1.58	(0.87-2.88)
Any weapon carrying	1.40	(0.97-2.02)	1.09	(0.65-1.84)	1.74*	(1.08-2.80)*
Any binge drinking	1.10	(0.74-1.63)	0.74	(0.43-1.29)	1.24	(0.78-1.96)
Any drug use exposure	1.28	(0.86-1.93)	1.55	(0.77-3.13)	1.17	(0.72-1.89)
Sadness	8.45*	(6.02-11.85)*	9.56*	(5.66-16.14)*	7.74*	(5.05-11.88)*

[1] Odds ratios (OR) are computed through adjusted multinomial logistic regression analyses controlling for sex, race/ethnicity, and grade and predicting involvement in suicidal attempt, physical fighting, or both suicide attempt and physical fighting relative to no suicide attempt and no physical fighting. Reference groups were those who did not have low grades, who did not carry weapon, who did not binge drink, who did not use drugs, and who were not sad.
* Significant associations are presented.

earlier studies of youth and suggest that the patterns and prevalence of co-occurrence remain similar over time and across populations of youth in different settings.[8,11,30] Moreover, early alcohol use initiation, prior to age 13, was significantly associated with all levels of the outcome variable. However, the strongest associations were noted between early alcohol use initiation and co-occurring suicide attempt and physical fighting for girls (Adj. OR=6.50). The associations between early alcohol use initiation and co-occurring suicide attempt and physical fighting and also between early alcohol use initiation and with physical fighting appeared stronger for girls than for boys. This finding is intriguing and warrants further research of potential sex differences in early alcohol use and associated outcomes.

While many of the confounders examined were statistically significant especially for co-occurring suicide attempt and physical fighting, the patterns varied greatly for suicide attempt only. In fact, the fewest statistically significant associations were observed when examining correlates of suicide attempt alone. As has been noted previously and also found in the current study, there is a robust association between reports of sadness and co-occurring suicidal and violent behaviors.[11,25,26] Consistent with earlier reports, we identified a strong association between sadness and co-occurring suicide attempt and physical fighting among both boys and girls. More importantly, while sadness was a significant correlate of all levels of the outcome, sadness had by far the strongest association with co-occurring suicide attempt and fighting. This was particularly noted among boys, where the association between sadness and co-occurring suicide attempt and physical fighting was remarkably high (Adj. OR=20.99).

Results from previous studies have found a strong link between suicidal behavior and violent behavior. In one study of school shootings in the U.S., for example, it was noted that the majority of perpetrators exhibited suicidal ideation or suicidal behavior prior to or during the violent attack.[31] Perhaps more intriguingly, more than half of the perpetrators in these school shootings had no history of prior violence. It is clear that the link between suicidal and violent behavior is complex. Researchers have suggested that unrecognized or untreated suicidality may be highly prevalent among violent perpetrators.[10] Future research on the predictors and correlates of suicidal behaviors among violent perpetrators is recommended, as is research into the link between suicidal behavior and violence at the population level.

LIMITATIONS

Several limitations of this study should be considered when interpreting the findings. First, the findings are based on high school students and therefore the findings do not reflect experiences of those who have dropped out of school. Second, the findings are based on self-reported data and have not been corroborated with other sources. Third, the findings are based on cross-sectional survey data, which do not permit determination of the temporal ordering of the risk factors relative to the outcome. Fourth, the assessment of co-occurring suicidal and violent behaviors only indicates the presence of both suicidal and violent behaviors within the past 12 months. Based on how the survey questions were asked, more specific timing of the presence of suicidal or violent behavior cannot be provided or inferred. Fifth, the survey is limited in the number and types of correlates that were examined, and it is possible that other potential confounders, if available, and included in the analyses, could have impacted our findings. Sixth, the confidence intervals for the odds ratios for some of the risk factors were relatively wide, indicating that some associations, while strong, were possibly unstable. Finally, it is possible that bias associated with social desirability may have contributed to an underreporting of high risk and violent behaviors.

Previous research has suggested that there is a significant overlap among both suicidal behavior and violent behaviors among youth.[8,10,11] However, because of our relatively limited understanding of how different types of violent behavior overlap, efforts to design prevention programs that can address multiple types of violence, such as fighting and suicidal behaviors, have been limited.[8,10] Findings from this study and others underscore how important it may be to develop programs that may be relevant across multiple forms of violent behaviors that span across self-directed and interpersonal violence.[8,10,11] The current study is one of very few that seeks to better understand the potentially shared and modifiable risk factors between involvement in violent and suicidal behaviors.

In future studies of shared risk factors for co-occurring suicidal and violent behaviors, it is particularly important to assess modifiable factors that can be addressed by current evidence-based strategies and intervention. Meanwhile, the findings from our study indicate that early alcohol use initiation is an important predictor of suicidal and violent behaviors among both boys and girls. The specific mechanism linking suicidal and violent behavior is not well known nor is the role of early alcohol use initiation among these youth. Therefore, longitudinal research that can better assess the temporal ordering between early alcohol use initiation, suicidal and violent behavior is needed.

In terms of clinical practice and implications, these findings combined with earlier research calls for screening of early alcohol use initiation in pediatric populations prior to their teen years, by healthcare providers, because of the high incidence of alcohol use initiation among youth.[8] However, prevention efforts are also needed to further delay the initiation of use and many of the associated adverse health linked to early alcohol use. Pediatricians as well as emergency physicians and other healthcare providers are in a unique and very important position to discuss alcohol use and its potential hazards with their pediatric patients and parents, particularly when patients are seen for injuries or risk for self-harm.[32–34]

Finally, based on the findings, it is clear that youth who report co-occurring suicidal and violent behaviors appear to experience a range of negative experiences including low academic grades, weapon carrying, binge drinking and drug use exposure that may further exacerbate the severity of their current health problems. While they are a small percentage of the youth population overall, they appear to be particularly vulnerable and in need of services.

Address for Correspondence: Monica H. Swahn, Ph.D, MPH., Professor, School of Public Health, Partnership for Urban Health Research, Georgia State University, P.O. Box 3995, Atlanta, GA 30302. Email: MSwahn@gsu.edu.

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REFERENCES

1. Borowsky, IW, Ireland, M, Resnick, MD. Adolescent suicide attempts: risks and protectors. *Pediatrics* 2001;107:485–93.
2. Bossarte, RM, Simon, TR, Swahn, MH. Clustering of adolescent dating violence, peer violence and suicidal behavior. *J Interper Violence*. 2008; 23(6):815–833.
3. Cleary SD. Adolescent victimization and associated suicidal and violent behaviors. *Adolescence*. 2000;35(140):671–682.

4. Evans WP, Marte RM, Betts S, et al. Adolescent suicide risk and peer-related violent behaviors and victimization. *J Interpers Violence*. 2001; 16(12):1330–1348.
5. Flannery, DJ, Singer, MI, Wester, K. Violence exposure, psychological trauma, and suicide risk in a community sample of dangerously violent adolescents. *J Am Acad Child Adolesc Psychiatry*. 2001;40(4):435–442.
6. Orpinas PK, Basen-Engquist K, Grunbaum JA, et al. The co-morbidity of violence-related behaviors with health-risk behaviors in a population of high school students.*J Adolesc Health*. 1995;16(3):216–225.
7. Silverman JG, Raj A, Mucci LA, et al. Dating violence against adolescent girls and associated substance use, unhealthy weight control, sexual risk behavior, pregnancy, and suicidality. *JAMA*. 2001*; 286*:572–579.
8. Swahn MH, Bossarte RM, Sullivent EE. Age of alcohol use initiation, suicidal behavior, and peer and dating violence victimization and perpetration among high-risk seventh-grade adolescents. *Pediatrics*. 2008;121(2):297–305.
9. Swahn MH, Lubell KM, Simon TR. Suicide attempt and physical fighting among high school students – United States, 2001. *MMWR Morb Mortal Wkly Rep*. 2004;*53*(22):474–476.
10. Lubell KM, Vetter JB. (2006). Suicide and youth violence prevention: The promise of an integrated approach. *Aggression and Violent Behavior, 11*(2), 167–175.
11. Swahn MH, Gaylor E, ossarte RM, et al. Suicide Attempts and Physical Fighting: A Comparison between Urban, Suburban and Rural High School Students. *Vulnerable Children & Youth Studies*. 2010;5(4):353–362.
12. Swahn MH, Bossarte RM., Musa Elimam, D, Gaylor, E, Jayaraman, S. Prevalence and Correlates of Suicidal Ideation and Physical Fighting: A Comparison between Students in Botswana, Kenya, Uganda, Zambia, and the U.S.A. *International Public Health Journal*. 2010;2(2):195–205.
13. Bossarte RM, Swahn MH. The Associations between Early Alcohol Use and Suicide Attempts among Adolescents with a History of Major Depression. *Addict Behav*. 2011;36(5):532–535.
14. Cho H, Hallfors DD, Iritani BJ. Early initiation of substance use and subsequent risk factors related to suicide among urban high school students. *Addict Behav*. 2007;32(8):1628–1639.
15. Ellickson PL, Tucker JS, Klein DJ. Ten-year prospective study of public health problems associated with early drinking. *Pediatrics*. 2003;111: 949–955.
16. Hingson R, Heeren T, Jamanka A, et al. Age of drinking onset and unintentional injury involvement after drinking. *JAMA*. 2000;284:1527–1533.
17. Hingson R, Heeren T, Zakocs R. Age of drinking onset and involvement in physical fights after drinking. *Pediatrics*. 2001;108:872–877.
18. Hingson R, Heeren T, Winter MR, et al. Early age of first drunkenness as a factor in college students' unplanned and unprotected sex attributable to drinking. *Pediatrics*. 2003a;111:34–41.
19. Hingson R, Heeren T, Zakocs R, et al. Age of first intoxication, heavy drinking, driving after drinking and risk of unintentional injury among U.S. college students. *J Stud Alcohol*. 2003b; 64:23–31.
20. Hingson RW, Heeren T, Winter MR. Age at drinking onset and alcohol dependence: age at onset, duration, and severity. *Arch Pediatr Adolesc Med*. 2006;160:739–746.
21. Swahn MH, Bossarte RM. Gender, early alcohol use, and suicide ideation and attempts: Findings from the 2005 Youth Risk Behavior Survey. *J Adolesc Health*. 2007; 41(2):175–181.
22. Swahn MH, Bossarte RM, Ashby, J, et al. Early Alcohol Use and Suicide Attempts among Middle and High School Students: Findings from the 2006 Georgia Student Health Survey. *Addict Behav*. 2010;35(5):452–8.
23. Swahn MH, Bossarte RM, Choquet M, et al. Substance Use Initiation and Suicide Ideation and Attempts among Students in France and the U.S. 2011 Apr 27. [Epub ahead of print].
24. Plutchik R. Outward and inward directed aggressiveness: The interaction between violence and suicidality. *Pharmacopsychiatry*. 1995;28(Suppl. 2):47–57.
25. Trezza GR, Popp SM. The substance user at risk of harm to self or others: Assessment and treatment issues. *J Clin Psychol*. 2000;*56*(9): 1193–1205.
26. Eggert LL, Thompson EA, Herting JR, et al. Prevention research program: Reconnecting at-risk youth. *Issues Ment Health Nurs.* 2004; *15*(2):107–135.
27. US Department of Health and Human Services. Youth violence: A report of the surgeon general. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health; 2001. Available at: http://www.surgeongeneral.gov/library/youthviolence/youvioreport.htm.
28. Department of Health and Human Services. *The Surgeon General's call to action to prevent suicide*. Washington, DC: Department of Health and Human Services; 1999. Available at: http://www.surgeongeneral.gov/library/calltoaction/default.htm.
29. Centers for Disease Control and Prevention. Youth risk behavior surveillance - United States, 2007. Surveillance Summaries, *MMWR Morb Mortal Wkly Rep*. 2008;57(No. SS-4):1–136.
30. Eaton DK, Kann L, Kinchen S, et al. Centers for Disease Control and Prevention (CDC). Youth risk behavior surveillance – United States, 2007. *MMWR Morb Mortal Wkly Rep*. 2008;*57*(4):1–131.
31. Vossekuil B, Fein R, Reddy M, et al. (2002). Final report and findings of the safe school initiative: Implications for the prevention of school attacks in the United States. Washington, DC: U.S. Department of Education, Office of Elementary and Secondary Education, Safe and Drug-Free Schools Program, and U.S. Secret Service, National Threat Assessment Center. Available at: http://www.secretservice.gov/ntac/ssi_final_report.pdf
32. Kulig JW, American Academy of Pediatrics, Committee on Substance Abuse. Tobacco, alcohol, and other drugs: the role of the pediatrician in prevention, identification, and management of substance abuse. *Pediatrics*. 2005;115(3):816–821
33. American Academy of Pediatrics, Committee on Substance Abuse. Alcohol use and abuse: a pediatric concern. *Pediatrics*. 2001;108(1): 185–189.
34. American College of Emergency Physicians. Clinical & Practice Management: Alcohol Screening in the Emergency Department. Approved April, 2011. Available at: http://www.acep.org/Clinical—Practice-Management/Alcohol-Screening-in-the-Emergency-Department/.

The Economic Burden of Intimate Partner Violence in Ecuador: Setting the Agenda for Future Research and Violence Prevention Policies

María Isabel Roldós, MPA, MA, DrPH Universidad San Francisco de Quito, School of Public Health and School of Medicine, Quito, Ecuador
Phaedra Corso, MPA, PhD University of Georgia, Department of Health Policy and Management, Athens, Georgia

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Introduction: Intimate partner violence (IPV) is a widespread social structural problem that affects a great proportion of Ecuadorian women. IPV is a sexually, psychologically, or physically coercive act against an adult or adolescent woman by a current or former intimate partner. Not-for-profit groups in Ecuador report that 70% of women experience 1 of the forms of IPV sometime during their lifetime, but population-based surveys suggest that 41% of Ecuadorian women are exposed to emotional violence, 31% physical violence, and 12% sexual violence by their spouse or partner over their lifetime. Despite the high prevalence, the response of the Ecuadorian government has been insufficient to reduce the number of victims and to provide adequate legal and health services for the prevention and treatment of IPV. Given the power of economic data to influence policy making, the goal of this study is to produce the first estimate of the economic impact of IPV in Ecuador and to identify the policy paths in which these estimates would have the greatest impact for Ecuador.

Methods: Using a bottom-up method for estimating the economic burden of IPV and a national prevalence of IPV based on a population-based survey in the 2003–2004 year, the total economic burden is estimated at approximately $109 million adjusted to the 2012 United States (U.S.) currency rate.

Results: Based on a prevalence of 255,267 women who were victims of IPV in the 2003–2004 year, the total economic burden is estimated at approximately $109 million adjusted to the 2012 the U.S. currency rate. The largest cost category contributing to the economic burden was the costs of healthcare services to treat injuries associated with IPV events.

Conclusion: The asymmetry between the economic burden of IPV and the amount of government resources devoted to IPV prevention efforts suggests the need for a greater role to be played by the government and other factors in society in the area of IPV prevention. [West J Emerg Med. 2013;14(4):347–353.]

INTRODUCTION

Intimate partner violence (IPV) is the most common type of violence experienced by women around the world.[1–3] IPV is a sexually, psychologically, or physically coercive act against an adult or adolescent woman by a current or former intimate partner.[4] Even after the combined efforts of the World Conference on Human Rights in Vienna (1993), the Inter-American Convention on the Prevention, Punishment and Eradication of Violence against Women of Belem do Para (1994), and the Fourth World Conference on Women (1995), IPV continues to be a widespread problem around the world.[5] The landmark 10-country research study from the World Health Organization on Women's Health and Domestic Violence confirms this premise by suggesting that 15% to 71% of ever-

partnered women experienced physical or sexual violence by an intimate partner in their lifetime, with estimates in most countries ranging between 29% and 62%.[3] Furthermore, most acts of violence by an intimate partner reflect a pattern of continuing abuse, which puts women at higher risk for poor physical, mental, and reproductive health, and social functioning.[4]

All forms of IPV can be devastating to a woman's health, including increased long-term risk of chronic pain, physical disability, drug and alcohol abuse, and depression.[6] Women with a history of IPV are also at increased risk for unintended pregnancy, sexually transmitted infections, and adverse pregnancy outcomes.[5] A study conducted in the United States (U.S.), for example, found that the prevalence of women with gynecological problems among victims of spousal abuse was 3 times higher than for women with no spousal abuse.[7] The psychological impacts of IPV can be equally grave. The most prevalent mental health consequences of IPV include depression, posttraumatic stress disorder (PTSD), and anxiety, and it is strongly associated with suicidal behavior, sleep and eating disorders, social dysfunction, and an increased likelihood of substance abuse.[8] The most severe cases of IPV can lead to fatal outcomes. Femicide studies from Australia, Canada, Israel, South Africa, and the U.S. show that 40% to 70% of female murder victims were killed by their husbands or boyfriends.[9]

The health impacts and loss of life caused by IPV injuries generate a significant economic burden for victims and society, including the direct costs of medical and non-medical services provided to women who are victims of violence, the indirect costs associated with lost workplace and household productivity, and the long-term impact on human pain and suffering.[10,11] For example, a study conducted in the U.S. estimated the IPV economic burden for the U.S. in 2003 at $4.0 billion in medical costs and $1.8 billion in productivity losses, which represent approximately $6.2 billion and $2.8 billion in the 2012 U.S. currency rate, respectively.[12] Another study conducted in Great Britain estimated the 2004 burden to be £23 billion,[13] representing close to $36 billion in the 2012 U.S. currency rate. In addition to medical costs and productivity losses, Great Britain estimate includes costs from the criminal justice system, social services, housing, civil legal and emotional costs borne by the individual victim. In other studies translated to the 2012 U.S. currency rate, the economic burden of IPV has been assessed at $2 billion in Chile,[14] $40 million in Nicaragua,[14] $42 billion in Australia,[15] $1 billion in New Zealand,[16] $1.7 billion in Canada,[17] and $384 million in Switzerland.[18]

Estimates of the economic burden can raise national awareness about the prevalence of violence and the costs of treating IPV injuries and absorbing losses in productivity incurred by society. Furthermore, these estimates are critical to inform policy makers about the relative importance of IPV compared to other health issues and to inform decision-makers about allocating scarce public health resources for the prevention and treatment of IPV injuries.

Ecuador is 1 of the many countries that would benefit from an economic burden estimation of IPV. IPV is a widespread social structural problem that affects a great proportion of Ecuadorian women. Prevalence estimates of IPV generally defined, suggest that 7 out of every 10 Ecuadorian women have been victims of domestic violence at some point in their life.[1] In 1994, IPV was recognized as a human rights violation and the Ecuadorian government began to assess annual rates of IPV prevalence through various governmental agencies.[19] The Ministry of Health (MoH), for example, reported that 33 out of 100,000 people received treatment for an IPV injury in a public health clinic in 1994. Public health clinics are health community centers that provide primary healthcare services to the general population. By 2005, the MoH reported that the rate of treatment for IPV in the clinics increased to 54 out of 100,000.[20] However, limitations of these data are that the MoH estimation does not differentiate between women, men, and children; and the IPV injuries may not be appropriately differentiated between other types of unintentional or intentional forms of injuries.

Several nonprofit organizations have also estimated IPV rates in Ecuador. For example, the Ecuadorian Center for the Promotion and Action for Women (CEPAM) reported that the legal services of the Women and Family Commissaries (WFC) served close to 600,000 cases of IPV between 1995 and 2006.[19] However, WFC cases do not translate directly to the number of victims or the number of convictions, as victims may seek legal assistance more than once. The only population-based survey that has measured IPV prevalence in Ecuador is the Demographic, Maternal and Infant Health Survey, known as ENDEMAIN, conducted by the Center for the Study of Population and Responsible Parenthood (CEPAR). The results from the ENDEMAIN, published in 2004, indicated that among women in their reproductive years (15–49 years of age), 41% reported having experienced emotional violence, 31% physical violence, and 12% sexual violence by their spouse or partner over their lifetime. When asked about their experience of IPV in the last 12 months, 15% of the Ecuadorian women in the sample reported suffering from emotional violence, 10% from physical violence, and 4% from sexual violence, after controlling for place of residence and income.[2] ENDEMAIN followed the World Health Organization and the Centers for Disease Control and Prevention to design violence scales for definitions to classify IPV. This classification includes: *emotional violence* as humiliated, yelled offensively and/or threatened to hurt someone you care or love; *physical violence* as pushed or thrown an object, slapped or grabbed arm, hit w/ fist or kicked, kicked/choked or beaten, threaten w/knife gun or other weapon; and *sexual violence* as forced to have intercourse.[2]

Despite the high prevalence of IPV, the Ecuador government has failed to develop national policies to help prevent IPV and to provide victims with legal and health services. In fact, only 3% of the social welfare allocation of public funds has been directed to programs or interventions that prevent IPV or gender-based violence or discrimination.[21] Given the power of economic data to influence policy making, the goal of this study is to produce the first estimates of the economic impact of IPV in Ecuador in order to identify the policy paths in which these estimates would have the greatest impact for Ecuador.

METHODS

Analytic Approach

As described by Brown et al,[22] in this analysis we used the bottom-up method for estimating the economic burden of IPV, such that the reported prevalence of IPV was multiplied by the direct and indirect unit costs associated with IPV to calculate total economic burden. This is the same approach used by researchers in the U.S., the United Kingdom, Canada, New Zealand, Switzerland, Chile, and Nicaragua, among others.[12–14;1, 9, 10] The direct costs included in this study are the resources required to provide medical and legal services, and international support for capacity building efforts of national authorities developing IPV prevention policies. The indirect costs included are losses in productivity, valued from paid work, associated with IPV injuries.

Data Sources

The data used in this paper were drawn from the period 2003–2004 from a variety of sources including: the scales of violence against women and household and personal annual expenditures of injury victims (fractures, punches, and injuries) from ENDEMAIN—2004; the medical costs associated with the implementation of the Free Maternity and Child Care Law (LFMC); the institutional and financial reports from the Ecuadorian Center for the Promotion and Action for Women (CEPAM); financial records from the Women and Family Commissaries(WFC); the National Center for Gender (DINAGE); and the National Institute of Ecuadorian Statistics and Census (INEC). In addition, we confirmed the validity of the data sources with local stakeholders and experts such as the former director of DINAGE, and the Director of CEPAM. Table 1 presents a description of these datasets and variables.

Although we collected data for this study from different sources, it is the major assumption of this study that the data sources can be linked together to draw general conclusions of IPV prevalence and economic burden. In fact, this is the same approach taken by others conducting economic burden of IPV analyses, including the U.S. study.[10]

IPV National Prevalence

The 2003–2004 IPV prevalence used in this study was estimated from the population-based demographic survey ENDEMAIN. ENDEMAIN used a probabilistic stratified sample and face-to-face interviews with an N=9576 women in their reproductive years. Details on the prevalence estimation can be found in the organization's final report.[2] ENDEMAIN asked women about their experiences of domestic violence in their lifetime and in the last 12 months using three scales: 1) history of violence experienced up to 14 years of age (either witnessed or experienced personally); 2) sexual abuse defined separately as forced sex with penetration and sexual abuse without penetration; and 3) IPV generally, as emotional abuse, physical violence, and sexual violence. This study used the IPV scale only. Self-report population-based surveys are considered the most reliable method for obtaining information on violence against women in the general population as women report their experience of violence regardless of whether they sought help.[5] ENDEMAIN's estimation of the number of IPV victims for the period of 2003–2004 was based on positive responses in any of the IPV questions measured, in the last 12 months, and then projected on national percentages of women in those age groups.[2]

Estimation of Direct Costs

Direct costs included medical, legal, and non-refundable international support for local efforts to prevent IPV.

Medical costs included the marginal increase in treating IPV injuries in government-operated clinics and hospitals, as well as the out-of-pocket medical expenses incurred by IPV victims. We extracted marginal costs of medical expenditures from the cost analysis performed by Grupo Faro of the Free Maternity and Child Care Law (LFMC).[21] Grupo Faro's analysis is one of the few studies in Ecuador to focus on patient-level costs of specific types of injuries. We extrapolated IPV victims' out-of-pocket medical expenses from the household and personal annual expenditures scales in ENDEMAIN to identify victims who reported fractures and injuries from violence and those who report self-medication and care.[2] Following best practices in the bottom-up approach, we estimated the total costs of medical care services by multiplying the unit costs and marginal costs of each medical care category by the number of women who reported IPV in the last 12 months in relation with the known percentage of women who are estimated to seek medical services.

The direct costs associated with legal services included in this study were public funds allocated for salaries and administrative expenses in public legal services in 34 Women and Family Commissaries (WFC) in 18 provinces in Ecuador. WFC provides legal services and judicial assistance to IPV victims with injuries that do not exceed more than three days of physical disability.

Finally, we included nonrefundable donations from international nonprofit organizations to prevent and treat IPV victims. These direct costs were incurred by the Ecuadorian Center for the Promotion and Action for Women (CEPAM) to train and strengthen the capacity of Women and Family

Table 1. Data sources used in the estimation of the economic burden of intimate partner violence (IPV) for Ecuador.

Source of data	Variables	Cost estimated
Demographic, Maternal and Infant Health Survey, ENDEMAIN-04	• National IPV prevalence of physical, emotional and sexual violence. • % of women that sought help in a public health clinic. • Household and personal annual expenditures subscale • % of IPV victims who do not work	Direct costs & indirect costs Direct costs: medical services (public clinics) Direct costs: medical services (out-of-pocket) Indirect costs: unpaid lost productivity
Free Maternity and Child Care Law (LFMC) - 2004	• Marginal increase in public health expenditure to treat an IPV injury	Direct cost: medical services
Women and Family Commissaries (WFC) and National Center for Center financial reports - 2004	• WFC personnel costs	Direct costs: legal services
Financial statement and budgets from CEPAM and DINAGE - 2004	• Capacity building of WFC and DINAGE	Direct costs: capacity building
National Central Bank	• Minimum wage 2004	Indirect costs: paid work

Commissaries and the National Center for Gender (DINAGE). CEPAM is a well-recognized not-for-profit women's organization in Ecuador for developing innovative research and initiatives in gender-based discrimination prevention, violence prevention, and women's rights advocacy.[23] DINAGE is the national authority for developing public policies to decrease domestic and IPV and promoting gender equality.[24]

Estimation of Indirect Costs

We estimated indirect costs using the method from the Inter-American Bank estimation of the social and economic cost of domestic violence in Chile and Nicaragua.[14] These include the lost wages of paid workers as the result of IPV injuries sustained by the women in their reproductive years. The lost income per day was calculated using the daily rate of the minimum salary established by the National Central Bank for Ecuador, set at $5.50 per day.[25] This represents a nominal average wage of $166 per month in 2004. We derived the average days lost from physical violence from the Centers for Disease Control and Prevention's 2003 estimation of Costs of Intimate Partner Violence Against Women in the United States.[26]

We collected all costs for the 2003–2004 fiscal year to compare to IPV prevalence during that same 12-month period. All direct costs were adjusted to the 2012 U.S. currency rate using the general consumer price index published by the Ecuadorian Central Bank;[27] while indirect costs were adjusted by a 1% annual increase from 2004 to 2012 following Haddix et al.[28]

RESULTS

Based on a prevalence of 255,267 women who were victims of IPV in the 2003–2004 year, the total economic burden is estimated at approximately $109 million adjusted to the 2012 U.S. currency rate (Tables 2 and 3).

The largest cost category contributing to the burden was the direct costs of healthcare expenditures, at approximately $96 million adjusted to the 2012 U.S. currency rate (Table 4).

The indirect costs of lost productivity, more than $10.5 million adjusted to the 2012 U.S. currency rate, represented

Table 2. Direct costs of healthcare expenditures: Public expenditures in the national network of healthcare clinics and out-of-pocket expenses.

	Cost per visit	Prevalence 2003–2004	% of women incurring costs	Total economic burden in 2004	Adjusted to 2012
Average out-pocket expenses of injury victims (CEPAR - 2004)	$450	255,267	57%	$65,475,986	$96,737,851
Marginal cost to treat an IPV injury (LMGYAI network of clinics)	$2.00		7%	$35,737.38	$52,800
Total					$96,790,652

CEPAR, Center for the Study of Population and Responsible Parenthood*; IPV,* intimate partner violence.

Table 3. Total economic burden of intimate partner violence in Ecuador, 2012 US dollars.

Productivity losses	$10,642,087
Health costs	$96,790,652
Judicial costs	$1,801,454
Total	$109,234,193

another significant portion of the economic burden. Direct legal services sought by IPV victims in Women and Family Commissaries and institutional expenses by local nonprofits and local authorities engaged in developing violence prevention policies accounted for approximately $1 million in 2004. Assuming an equal investment in 2012, this amount represents $1.8 million in 2012 (Table 5).

DISCUSSION

Violence against women has grave consequences for women, their children, and society as a whole. Women who experience violence suffer from a range of health problems, which are both physical and mental, and their ability to participate productively in public life is greatly diminished. Specifically, violence reduces the capacity of victims to contribute productively to the family, the economy, and public life. It also drains resources from social services, the justice system, healthcare agencies, and employers.[29]

The approximation presented in this paper is the first economic burden estimate of IPV for Ecuador. This estimate quantifies the burden associated with IPV injuries. Quantifying the economic and public health burden allows the Ecuadorian general public and authorities to understand the impact of the disease relative to other diseases or illnesses and to set priorities based on how diseases impact the functioning of the population.

Our economic burden of IPV estimate is approximately $109 million adjusted to the 2012 U.S. currency rate from a societal perspective. This perspective includes all costs regardless of who pays the costs and who experienced the

Table 4. Indirect costs from losses in productivity.

		2012 US dollars
IPV 2003–2004 prevalence (CEPAR 2004)	255,267	
Average daily rate of minimum wage (Banco Central del Ecuador 2004)	$5.50	
Average days lost of work (CDC 2005)	7	
Total	$9,827,780	$10,642,087

CEPAR, Center for the Study of Population and Responsible Parenthood, *CDC*, Centers for Disease Control and Prevention.

Table 5. Direct costs of legal services: Women and Family Commissaries (WFC) public and nonprofit expenses.

	2004 U.S. dollars	*2012 U.S. dollars*
WFC Personnel costs (Grupo Faro 2008)	$905,075	$1,337,097
Capacity building of non-for profit interventions (CEPAM 2008)	$314,295	$464,356
Total		$1,801,454

benefits. The largest cost category contributing to the economic burden is the costs of healthcare services. Although the costs to treat the injuries associated with IPV are substantial, we recognize that these costs significantly underestimate IPV's true burden to society. First, less than 8% of women that suffer from IPV seek help from any institution, including medical care and legal aid services.[19] Reasons for this include: barriers to healthcare service access; victims' distrust of institutions that provide help or care; gender-based discrimination in legal and medical care institutions; and lack of assurances of confidentiality for victims. Second, we only had data from public health clinics. Medical costs in private clinics and hospitals were not available nor were data on mental healthcare, emergency department (ED) visits, hospitalizations, outpatient clinic visits to private hospitals, ambulance transport, paramedic assistance, and services of physicians, dentists, and physical therapists. Therefore, our economic burden estimates represent only the tip of the iceberg when considering the true economic burden of IPV to society. Even so, our results are significant and similar to other economic burden of IPV studies conducted in other parts of the world. For example, medical care costs comprise nearly 70% of the total costs of IPV in the study conducted in the U.S..[12]

We also consider our indirect costs to be an underestimation of lost productivity. The main categories in indirect economic costs are those related to time lost from work, return-to-work costs (RTW), losses in productivity and subsequent unemployment, and changes in occupation when women suffer from IPV.[9] The majority of these types of indirect costs were not measured in our analysis. In addition, the value used for loss of income per day was U.S. $5.50, which assumed a minimum wage for all women. We did not have the distribution of income of IPV victims to adequately extrapolate different income losses based on socio-economic status.

The IPV economic burden estimated in this study can be directly compared to the Ecuador government's allocation of funds in social investment programs. In 2004, the total budget allocated to social welfare programs was U.S. $1.9 billion. The majority of these funds went to education (67%), while health received 21%, welfare programs 5%, employment projects 2%, and 4% for housing projects.[20] However, Grupo Faro has reported that only 3% of these allocated resources were

invested in programs that addressed women's reproductive health, gender inequality, and violence. Our estimation represents twice this value for IPV alone. Additionally, it has been reported that in 2004 governmental agencies in Ecuador responsible for preventing and treating violence against women spent less than U.S. $3 million.[21] Our estimate of the economic burden of IPV is close to 36 times greater than what was invested in the prevention and treatment of IPV injuries.

LIMITATIONS

The results of this study must be considered in light of its limitations**.** First, IPV prevalence was measured using self-report, relying on the participants' recollection of past events. Although the standard approach for assessing intentional violence is via self-reported anonymous questionnaires, ENDEMAIN's purpose was to assess maternal and infant outcomes. Methodological considerations for assessing domestic violence suggests that large surveys that are primarily aimed at other issues underestimate the prevalence of violence against women when compared to surveys specifically dedicated to investigating violence against women.[31] Second, because access to economic data was difficult to obtain we made many assumptions to gather enough information to make the calculations in this study. Some of these assumptions include: minimum wage of IPV victims, percentage of women not seeking clinical care after an episode of violence and percentage of women who self-treated their own injuries. Further, this study was unable to differentiate the types of IPV in estimating the costs. There are important consequences and variations in costs that are dependent on the type of violence experienced. Finally, this paper does not address the costs associated with the consequences of witnessing IPV for children in the household. Evidence suggests that children who were exposed to domestic violence between parents are at an increased risk of conduct disorders and accentuating a cycle of violence between generations.[32]

CONCLUSION

Despite these limitations, this study presents, for the first time ever, an estimate of the economic burden of IPV in Ecuador. Given the tremendous economic impact of IPV in Ecuador, $109 million in the 2012 U.S. currency rate, the Ecuador government, not-for-profit organizations and civil society organizations should draw on innovative approaches to prevent IPV and to ameliorate the devastating economic and human toll. These approaches should include community dialogue and awareness and mobilization initiatives. Economic burden estimates should be considered as one of these innovations to inform the policy-making process, and as such, improvements should be made to enhance the surveillance of IPV prevalence, and to include costs of treating IPV in the surveillance tools. The approximation of economic burden is critical to Ecuador's society to move forward the public policy of violence prevention.

The asymmetry between the economic burden of IPV in Ecuador and the amount that the government devotes to IPV prevention efforts suggests the need for a greater role to be played by the government and other actors in society in the area of IPV prevention. The recognition of violence against women as a violation of human rights implies a binding obligation of the Ecuador government to prevent, eradicate, and punish violence against women. Addressing violence against women as a human rights issue encourages a multi-sectorial response from the criminal justice, health, development, humanitarian, and security sectors.[5,30] The subject of domestic and gender-related violence figures prominently on the public agenda; however, political instability and constant changes of Ecuadorian authorities inhibit the implementation of initiatives aimed at enhancing women's access to justice and healthcare services, truncate progress and have a dampening effect. In May 2008, the Ecuador Constitution was rewritten to include specific wording that would guarantee women's right to live free from fear of violence and would prohibit any physical, emotional, sexual, or moral coercion by adopting measures to prevent, eliminate, and sanction any type of violence against women, girls, and children. To date, these efforts have yet to show an effect.

Address for Correspondence: María Isabel Roldós, MPA, MA, DrPH. Universidad San Francisco de Quito, Avenida Interoceánica, Casa Corona, Casilla Postal 17-12-841, Circulo de Cumbayá, Quito-Ecuador. Email: mroldos@usfq.edu.ec.

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REFERENCES

1. Valdivierzo C. Questionnaire to Governments on Implementation of the Beijing Platform for Action. Quito, Ecuador: National Council of Women (CONAMU), 2004.
2. Centro de Estudio de Población y Desarrollo Social. Informe Final de la Encuesta Demográfica y de Salud Materna e Infantil- ENDEMAIN. Quito-Ecuador: CEPAR, 2004.
3. World Health Organization. Multi-country Study on Women's Health and Domestic Violence against Women. Initial results on prevalence, health outcomes and women's responses. Geneva: World Health Organization, 2005.
4. Saltzman LE, Fanslow JL, McMahon P, et al. Intimate Partner Violence Surveillance: Uniform Definitions and Recommended Data Elements. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 1999.

5. United Nations General Assembly. In-depth study on all forms of violence against women. New York, NY: United Nations, 2006.
6. Varcoe C. The women's health effects study: toward a better understanding of the real costs of intimate-partner violence against women. *Newsletter*. 2005;*12(*1).
7. Campbell JC. Health consequences of intimate partner violence. *Lancet*. 2002;359(9314):1331–6.
8. Pico-Alfonso MA, Garcia-Linares MI, Celda-Navarro N, et al. The Impact of Physical, Psychological, and Sexual Intimate Male Partner Violence on Women's Mental Health: Depressive Symptoms, Posttraumatic Stress Disorder, State Anxiety, and Suicide. *J Women's Health*. 2006; 15(5):599–611.
9. Harway M, O'Neil J. What causes men's violence against women. New York, NY: Sage; 1999.
10. Johnson C. Domestic violence: the cost to society, the challenge to development. *Gend Action*. 1997;1(4):2–3.
11. Jones AS, Dienemann J, Schollenberger J, et al. Long-term costs of intimate partner violence in a sample of female HMO enrollees. *Womens Health Issues*. 2006;16(5):252–261.
12. Max W, Rice DP, Finkelstein E, et al. The economic toll of intimate partner violence against women in the United States. *Violence Vict*. 2004;19(3):259–72.
13. Walby S. The cost of domestic violence. London: Great Britain. Dept. of, Trade, Women and Equality Unit, 2004.
14. Gonzalez de Olarte E, Gavilano P. Social and Economic Costs of Domestic Violence. In: Morrison A, Loreto Biehl M, editors. Too close to home : domestic violence in the Americas. Washington, DC: Inter-American Development Bank; 1999. p. 51.
15. Access Economics Pty Inc. The Cost of Domestic Violence to the Australian Economy: Part I. Australian Government's Office of the Status of Women, 2004.
16. Snively S. New Zealand Economic Cost of Family Violence: Coopers & Lybrand; 1994.
17. Day T. The Health-Related Costs of Violence Against Women in Canada: The Tip of the Iceberg. Canadian Advisory Council on the Status of Women., 1995.
18. Godenzi A, Yodanis C. Male violence: the economic costs a Methodological Review European Council of Europe - Men and violence against women; October, 08, 1999; Strasbourg1999.
19. Centro Ecuatoriano para la Promoción y Acción de la Mujer. El Camino transitado: Sistematización del proyecto "Fortalecimiento institucional y atención emergente de delito sexuales desde instancia de administración de justicia convencionales". Quito, Ecuador: Centro Ecuatoriano para la Promocion y Accion de la Mujer, 2009.
20. Ministerio de Salud Pública del Ecuador. Número de Casos notificados y tasas de incidencia anual de victimas de violenca y maltrato según provincias y regiones - Ecuador 1998–2007 Quito, Ecuador: Ministerio de Salud Publica del Ecuador, 2008.
21. Grupo Faro. Análisis de presupuesto públicos para la equidad de género. Quito, Ecuador: Grupo Faro, 2008.
22. Brown DS, Finkelstein EA, Mercy JA. Methods for Estimating Medical Expenditures Attributable to Intimate Partner Violence. Source: *J Interpers Violence* 23(12): pp 1747–1766; Dec 2008.23(12):1747–1766.
23. Centro Ecuatoriano para la Promoción y Acción de la Mujer. 2012.
24. Ministerio del Interior del Ecuador. Dirección Nacional de Género. 2012.
25. Banco Central del Ecuador. Salario básico unificado y componentes salariales : valores nominal. . Quito, Ecuador: Banco Central del Ecuador, 2012.
26. National Center for Injury Prevention and Control. Costs of Intimate Partner Violence against women in the United States. Atlanta, GA: Centers for Disease Control and Prevention, 2003.
27. Banco Central del Ecuador. 2010.
28. Haddix A, Teutsch S, Corso P, et al. Prevention Effectiveness. New York, NY: *Oxford University Press*; 2003.
29. Council of Europe. Combating violence against women: Stocktaking study on the measures and actions taken in the Council of Europe member States 2006.
30. United Nations General Assembly. In-depth study on all forms of violence against women. New York, NY: Division for the Advancement of Women of the Department of Economic and Social Affairs of the United Nations Secretariat., 2006 6 July 2006. Report No.: Sixty-first session.
31. Ellsberg M, et al. Researching Domestic Violence against Women: Methodological and Ethical Considerations. *Stud Fam Plann*. 2001; 32(1):1–16.
32. Ehrensaft MK, Cohen P, Brown J, et al. Intergenerational transmission of partner violence: A 20-year prospective study. *J Consult Clin Psychol*. 2003;71(4):741–753.

Gay and Bisexual Men's Perceptions of Police Helpfulness in Response to Male-Male Intimate Partner Violence

Catherine Finneran, MPH
Rob Stephenson, PhD
Emory University, Rollins School of Public Health, Hubert Department of Global Health, Atlanta, Georgia

Supervising Section Editor: Monica H. Swahn, PhD, MPH
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Introduction Despite several recent studies documenting high rates of intimate partner violence (IPV) among gay and bisexual men (GBM), the literature is silent regarding GBM's perceptions of IPV within their community. We examine GBM's perceptions of same-sex IPV**:** its commonness, its severity, and the helpfulness of a hypothetical police response to a GBM experiencing IPV.

Methods: We drew data from a 2011 survey of venue-recruited GBM (n=989). Respondents were asked to describe the commonness of IPV, severity of IPV, and helpfulness of a hypothetical police response to IPV among GBM and among heterosexual women. We fitted a logistic model for the outcome of viewing the police response to a gay/bisexual IPV victim as less helpful than for a female heterosexual IPV victim. The regression model controlled for age, race/ethnicity, education, sexual orientation, employment status, and recent receipt of physical, emotional, and sexual IPV, with key covariates being internalized homophobia and experiences of homophobic discrimination.

Results: The majority of respondents viewed IPV among GBM as common (54.9%) and problematic (63.8%). While most respondents had identical perceptions of the commonness (82.7%) and severity (84.1%) of IPV in GBM compared to heterosexual women, the majority of the sample (59.1%) reported perceiving that contacting the police would be *less* helpful for a GBM IPV victim than for a heterosexual female IPV victim. In regression, respondents who reported more lifetime experiences of homophobic discrimination were more likely to have this comparatively negative perception (odds ratio: 1.11, 95% confidence interval: 1.06, 1.17).

Conclusion: The results support a minority stress hypothesis to understand GBM's perceptions of police helpfulness in response to IPV. While IPV was viewed as both common and problematic among GBM, their previous experiences of homophobia were correlated with a learned anticipation of rejection and stigma from law enforcement. As the response to same-sex IPV grows, legal and health practitioners should ensure that laws and policies afford all protections to GBM IPV victims that are afforded to female IPV victims, and should consider methods to minimize the negative impact that homophobic stigma has upon GBM's access of police assistance. [West J Emerg Med. 2013;14(4):354–362.]

INTRODUCTION

Recent studies suggest that gay, bisexual, and other men who have sex with men (MSM) experience intimate partner violence (IPV) at rates comparable to or higher than those documented among women.[1–3] Current estimates indicate that approximately 25–50% of United States gay and bisexual men report experiencing physical IPV and 12–30% report experiencing sexual IPV.[1, 2, 4–6] Despite a nascent increase in IPV studies among MSM, same-sex IPV continues to be markedly under-researched, particularly when compared to the vast body of literature regarding male-perpetrator/female-victim IPV. [7,8]

As the extent of same-sex IPV among gay, bisexual, and other MSM is beginning to be documented in the literature, many facets of IPV among MSM remain unaddressed. Published studies have, in general, sought to determine IPV prevalences, typologies, demographic correlates, and health sequela.[7] The literature is comparatively silent, qualitatively and quantitatively, as to the experiences of survivors of same-sex IPV. There is also a lack of studies as to the perceptions of gay, bisexual, and other MSM regarding the extent of IPV in lesbian, gay, bisexual, and transgender (LGBT) communities. Specifically, we find no published studies that examine gay and bisexual men's perceptions of the commonness, severity, and helpfulness of a police response to IPV within their communities – areas that have been examined in great detail for male-perpetrator/female-victim IPV. Indeed, it remains unknown to what extent same-sex IPV is reported to any part of the legal system; nor are there data regarding the experiences of survivors of same-sex IPV who do contact the police.

What is known about perceptions of police response to IPV comes entirely from research drawn from samples of women. Although IPV is thought to be among the crimes most commonly reported to law enforcement, it is estimated that a minority of IPV survivors report to the police, and that only a fraction of reported crimes result in the arrest of the perpetrator of the violence.[9,10–12] Indeed, the use of contacting the police in preventing future victimization is in dispute, as is the efficacy of so-called "no drop" policies in which perpetrators of partner violence are always prosecuted.[11–13] Not all women who contact the police want their abusive partners to be arrested, and women who do contact the police often fear reprisal in the form of revictimization.[14,15]

Multiple researchers have examined what factors make women more or less likely to contact the police in cases of IPV; other have focused on the other areas of support, including social support, that women access in addition to or in place of police assistance.[16,17] Several studies have outlined dilemmas that IPV survivors face when choosing whether or not to contact the police (e.g., possible removal of children from the home, loss of economic resources, shame/humiliation from the abuse becoming public) and barriers faced after the police have been contacted (e.g., being disbelieved, having the situation dismissed/minimized, being wrongly arrested after acts of self-defense).[14,18,19] Women's satisfaction with police response ranges widely in the literature, being categorized as negative to neutral to slightly positive.[20,21] Moreover, survivors of IPV have been shown to be more likely to contact the police in cases of future victimization if the response to their initial contact is positive.[22]

Much has also been written about the role of police legitimacy in influencing when and if survivors of IPV choose to seek police intervention.[23, 24] Police legitimacy, which in its broadest conceptualization refers both to the authority afforded to the police by the public as well as to the factors that influence the affording of that authority, is understood as being paramount to maintaining social order by encouraging law-abiding behaviors, compliance with police directives, and cooperation with investigations (e.g., reporting a crime).[25] Central to police legitimacy is the role of procedural justice, that is, whether or not actions taken by the police are viewed as appropriate, fair, and just.[25, 26] While little data exist regarding perceptions of police legitimacy among gay and bisexual men, unfair or homophobic treatment of gay and bisexual men by the police could lessen the legitimacy of police and potentially lead to reduced reporting of IPV. Indeed, this phenomenon has been documented among lesbian/gay women, as anticipation of homophobia and stigma by police officers during a police response has been shown to contribute to a reluctance to contact the police when experiencing IPV.[14]

In addition to the aforementioned lack of research regarding IPV among gay/bisexual men, there is also a lack of literature examining how other factors, such as factors unique to the sexual minority status of gay individuals, would impact the prevalence of, incidence of, or gay/bisexual men's perceptions of IPV. Meyer[27,28] seminally theorized that all of these other factors, when combined, could be understood as *minority stress*. The theory of minority stress posits that the excess stressors experienced by minority persons are both unique to their minority statuses and additive in nature. Minority stress theory, which now has empirical support in a vast array of subjects, is described by Kaschak[37] as creating a "double closet" – that is, LGBT persons who are experiencing partner violence face discrimination borne from both homophobia (internal and external) and from the stigma of being a victim of partner violence.[37–50]

This study, therefore, has multiple objectives. First, we will describe, for the first time in the literature, the perceptions of gay/bisexual men regarding IPV within their communities, both separately and in comparison to their perceptions for IPV within heterosexual communities. Second, we will examine to what extent both the internal and external forces of minority stress impact gay/bisexual men's perceptions of IPV, with a particular focus on their understanding of the helpfulness of contacting the police in the case of a hypothetical gay/bisexual man experiencing IPV. A better understanding of factors that influence these decision-making processes will enable all parties that respond to partner violence, including law enforcement agencies and community organizations, to improve their policies and practices in order to reach and serve gay/bisexual male survivors of IPV.

METHODS

Emory University's ethics committee approved this study. We systematically recruited sexually active MSM over the age of 18 over 5 months in 2011 in Atlanta, Georgia, using venue-based sampling.[29] Venue-based sampling is a derivative of time-space sampling in which sampling occurs within prescribed blocks of time at particular venues. As a method to

access hard-to-reach populations, venue-based recruitment is a process by which a sampling frame of venue-time units is created through formative research with key informants and community members. To reach a diverse population of gay and bisexual men in the Atlanta area, the venue sampling frame used for this study consisted of a wide variety of over 160 gay-themed or gay-friendly venues, including Gay Pride events, gay sports teams events, gay fundraising events, downtown areas, gay bars, bathhouses, an AIDS service organization, an MSM-targeted drop-in center, gay bookstores, restaurants, and urban parks.

Study staff briefly interviewed potential participants outside venues, and eligible men were given information on how to complete the study survey. Men were eligible for the study if they reported identifying as gay/homosexual or bisexual, being aged 18 or older, living in the Atlanta metro area, and having had sex with a man in the previous 6 months. Eligible men who were interested in study participation were given a card with a unique identifier that unlocked a web-based survey. The survey covered several domains and assessed perceptions of 3 components of IPV among gay/bisexual men: the severity of partner violence (*"How big of a problem do you think partner violence is among gay/bisexual men?")*, commonness of partner violence ("*How common do you think partner violence is among gay/bisexual men?")*, and helpfulness of a police response ("*If a gay/bisexual man were experiencing partner violence and contacted the police, how helpful do you think the police would be in assisting him?")*. These 3 perceptions were also assessed for heterosexual women. Each question was assessed using a 5-point Likert scale, after which responses were coded into positive, neutral, or negative – for example, in response to police helpfulness, '*very helpful*' and '*helpful*,' '*neither helpful nor unhelpful*,' and '*unhelpful'* and '*very unhelpful*.'

We quantified internalized homophobia using a subset of 20 items from the Gay Identity Scale, a validated scale that assesses acceptance of homosexual feelings and thoughts, as well as how open a respondent is about his homosexuality with family, friends, and associates.[30] From these data, we created an index variable of internalized homophobia. No points were added to the index for neutral responses to any scale item. Positive point values were assigned to agreement with internally homophobic sentiments, and negative points were assigned for agreement with statements of gay pride. Thus, increasing index score was correlated to a decreased amount of pride and acceptance of homosexual thoughts, feelings, and behaviors. We added 40 points to each scale to shift the range from −40 - 40 to 0 - 80.

We assessed experiences of homophobic discrimination by creating an index scale of reported responses to 11 possible experiences of discrimination due to sexual orientation based on previous studies: being made fun of as a child, experiencing violence as a child, being made fun of as an adult, experiencing violence as an adult, hearing as a child that gay men would grow up alone, hearing as a child that gays are not normal, feeling that your gayness hurt your family as a child, ever having to pretend to be straight, experiencing job discrimination, and having to move away from family.[31] Respondents were awarded 1 point for each endorsed response, creating a scale ranging from 0–11.

We assessed recent experience of sexual, physical, and emotional IPV (i.e., within the past 12 months) using the short-form Conflicts Tactics scale (R-CTS), an index of 11 different forms of partner violence across 3 domains: emotional IPV (being called fat or ugly, having something belonging to you destroyed, being accused of being a lousy lover), physical IPV (being threatened to be hit or to have something thrown at you, having something that could hurt thrown at you, being pushed or shoved, being punched or hit with something that could hurt, being slammed up against a wall, being beat up, being kicked), and sexual IPV (having threats used against you to force you to have oral or anal sex).[32–34] Participants who indicated that they had experienced any item within an IPV category were classified as having recently experienced that form of IPV; forms of IPV were not mutually exclusive.

Differences in perceptions of IPV for heterosexual women versus gay men were assessed using chi-square testing. Specifically, a comparative analysis identified whether a respondent held identical or disparate perceptions of each of the 3 facets of IPV. If a respondent indicated disparate perceptions, we also recorded the directionality of this difference. Thus, a participant who viewed IPV both among gay/bisexual men and among heterosexual women as *not a problem* was coded as having an identical response. We identified correlates of a comparatively negative view of police helpfulness using bivariate chi-square analyses and by creating a logistic regression model. The model included age (18–24, 25–34, 35–44, and >44), race/ethnicity (white non-Hispanic, African-American/black non-Hispanic, and Latino/Hispanic or Other), sexual orientation (gay/homosexual or bisexual), education level (high school or less, some college or 2-year degree, or college/university or more), employment status, and receipt of emotional, physical, and sexual IPV in the past 12 months, with the key covariates of interest being the indices of internalized homophobia and homophobic discrimination.

RESULTS

Of 4,903 men approached during venue time-space sampling, 2,936 (59.9%) agreed to be screened for the study, 71.3% of whom (n=2,093) were eligible for study participation. Of eligible men, 1,965 (93.9%) were interested in study participation. A total of 1,075 men completed the survey; thus 21.9% of men approached and 51.4% of eligible men completed the survey. Of all survey responses, 989 had complete data for all covariates of interest and were included in the analysis. There were no significant ($\alpha = 0.05$) differences in either exposures or outcomes based upon inclusion in analysis versus exclusion for

Table 1. Sample characteristics of survey participants (n=989).

	%	n
Age		
18–24	21.1	209
25–34	31.8	314
35–44	25.6	253
45+	21.5	213
Race/Ethnicity		
White non-Hispanic	46.8	463
Black/African-American non-Hispanic	40.1	397
Hispanic/Latino or other	13.0	129
Sexual orientation		
Gay/Homosexual	89.5	885
Bisexual	10.5	104
HIV status		
Negative	69.2	648
Positive	24.3	240
Unknown	6.6	65
Employment status		
Employed	77.9	770
Unemployed	22.1	219
Education		
High school or less	16.6	164
Some college or 2-year degree	34.5	341
College or more	48.9	484
Recent partner violence		
No recent intimate partner violence	72.4	716
Recent emotional intimate partner violence	24.5	242
Recent physical intimate partner violence	17.6	174
Recent sexual intimate partner violence	4.5	44
	Mean	Std.
Homophobia indices		
Internalized homophobia index	18.8	13.0
Homophobic discrimination index	5.7	2.7

incomplete data. The sample was predominately young (51% under 35 years of age), gay-identified (11% bisexual-identified), racially diverse (54% non-white), educated (48% college or more), and part- or full-time employed (77%) (Table 1). Approximately one-quarter (24.3%) of the sample reported positive HIV status, and 37.3% of the sample reported having 3 or more anal sex partners in the previous 6 months. Emotional IPV was the most commonly reported form of IPV (24.5%), while nearly one in 5 respondents (17.6%) reported recent physical IPV and approximately one in 20 (4.5%) reported recent receipt of sexual IPV.

We summarize respondents' perceptions of IPV for both gay/bisexual men and heterosexual women and the results of chi-square testing in Table 2. Overall, all 3 IPV perceptions differed significantly ($p < 0.000$). More respondents indicated that IPV was *very common* or *common* among heterosexual women than among gay/bisexual men; however, a minority of respondents (11.4%) indicated that IPV among gay/bisexual men was *rare* or *very rare*. Similarly, while IPV among heterosexual people was more commonly endorsed as a *big problem* or a *problem* compared to IPV among gay/bisexual men (66.4% and 63.8%, respectively), few respondents viewed IPV as *not a problem* or *not at all a problem* in either community (5.1% and 8.0%, respectively). However, opinions regarding the helpfulness of a hypothetical police response ranged greatly. While more than 8 in 10 respondents (85.2%) indicated that police would be *helpful* or *very helpful* to a woman experiencing partner violence, only 3 in 10 respondents (30.6%) endorsed this opinion for a gay/bisexual man experiencing partner violence. Moreover, 39.5% of respondents indicated that contacting the police would be actually *unhelpful* or *very unhelpful* for a gay/bisexual man experiencing partner violence, compared to only 4.8% of respondents who indicated this would be the case for a heterosexual woman who contacted the police.

When comparing perceptions of partner violence among heterosexual women versus among gay/bisexual men, the majority of respondents reported identical perceptions of the commonality of IPV (82.5%) and the magnitude of the IPV problem (84.3%) (Table 3). However, perceptions of police helpfulness showed significant heterogeneity. Only 39.7% of respondents reported identical perceptions of police helpfulness when comparing gay/bisexual men and heterosexual women. Of this majority with divergent perceptions, 97.0% reported that contacting the police would be *less* helpful for a gay/bisexual men experiencing partner violence compared to a heterosexual woman experiencing partner violence. Therefore, 59.1% of the sample in total viewed the police as less helpful towards gay/bisexual men than heterosexual women in cases of IPV.

We treated this comparatively pessimistic view of a potential police response as the outcome in bivariate analyses (Table 4). With the exception of HIV status, the outcome varied significantly by all exposures, with older men ($p<0.017$), white non-Hispanic men ($p<0.000$), employed men ($p<0.000$), gay/homosexual men ($p<0.000$), and men with increasing levels of education ($p<0.000$) more commonly holding the comparatively negative view of police response. Perceptions of police helpfulness did not vary significantly by recent receipt of emotional, physical, or sexual IPV. Experiences of homophobia had mixed effects: compared to their counterparts, men who viewed the police as less helpful to gay/bisexual men experiencing partner violence had significantly *lower* mean scores on the internalized homophobia index (17.4 versus 20.8 respectively, $p<0.000$) and significantly *higher* scores on the

Table 2. Distribution of perceptions of the commonness, severity, and helpfulness of a hypothetical police response for both gay/bisexual men and heterosexual women.

	Very common / Common	Neutral	Rare / Very rare	Chi-square p-value
How common do you think partner violence is among. . .				
. . .Gay/bisexual men	54.9%	33.7%	11.4%	<0.000
. . .Heterosexual people	66.4%	28.5%	5.1%	
	Big problem / problem	Neutral	Not a problem / not at all a problem	
How big of a problem do you think partner violence is among. . .				
. . .Gay/bisexual men	63.8%	28.2%	8.0%	<0.000
. . .Heterosexual people	66.4%	28.5%	5.1%	
	Very helpful / helpful	Neither helpful nor unhelpful	Unhelpful / very unhelpful	
If a [. . .] were experiencing partner violence and contacted the police, how helpful would the police be in assisting him/her?				
. . .Gay/bisexual man. . .	30.6%	29.8%	39.5%	<0.000
. . .Heterosexual woman. . .	85.2%	10.0%	4.8%	

homophobic discrimination index (6.0 versus 5.2 respectively, $p<0.000$).

The results of the logistic regression modeling are summarized in Table 5. Black/African-American non-Hispanic men had significantly lower odds of holding the comparatively pessimistic view of police response compared to white non-Hispanic men (odds ratio[OR]: 0.73, 95% confidence interval [CI]: 0.53, 0.99). A dose-response effect was apparent in that increasing education level was correlated to increasing odds of reporting cynicism to police response. In other words, men who had completed a 4-year college/university degree had odds of perceiving that police would be more helpful to a heterosexual female victim of IPV than to a homosexual/bisexual male victim of IPV that were 2.5 times those of men without a high school diploma. A similar finding was documented among men who reported experiencing more forms of homophobic discrimination over their lifetimes. Men with increasing scores on the homophobic discrimination had accordingly higher odds of harboring the negative opinion of possible police response to a homosexual male victim of IPV (OR: 1.11, 95% CI: 1.06, 1.17). Similar to the bivariate analyses, respondents with increasing scores on the internalized homophobia index had significantly lower odds of having the comparatively cynical view of police helpfulness, but this decrease was only approximately 1–2% (OR: 0.99, 95% CI: 0.98, 1.00, $p<0.033$).

DISCUSSION

Several conclusions can be drawn from these novel results. First, although it is only recently that same-sex IPV has become the purview of researchers and public health interventionists,

Table 3. Comparative perceptions of commonness of intimate partner violence (IPV), severity of IPV, and police helpfulness in response to IPV for gay/bisexual men versus heterosexual people.

	%	n
How common do you think partner violence is among gay/bisexual men?		
More common than respondent's perception for heterosexual people	8.2	81
As common as respondent's perception for heterosexual people	82.7	818
Less common than respondent's perception for heterosexual people	9.1	90
How big of a problem do you think partner violence is among gay/bisexual men?		
Bigger problem than respondent's perception for heterosexual people	6.2	61
Same problem as respondent's perception for heterosexual people	84.1	832
Less of a problem than respondent's perception for heterosexual people	9.7	96
If a gay/bisexual man were experiencing partner violence and contacted the police, how helpful do you think the police would be in assisting him?		
More helpful than respondent's perception for a heterosexual woman	1.5	15
As helpful as respondent's perception for a heterosexual woman	39.4	390
Less helpful than respondent's perception for a heterosexual woman	59.1	584
TOTAL	100	989

Table 4. Bivariate analysis, percentages of respondents indicating that the police would be less helpful to a gay/bisexual male victim of intimate partner violence (IPV) than to a heterosexual female victim of IPV and results of chi-square testing. * Significant differences.

Exposures	n	%	p
Age			
18–24	104	49.8	< 0.017*
25–34	191	60.8	
35–44	161	63.6	
45+	128	60.1	
Race/Ethnicity			
White non-Hispanic	307	66.3	< 0.000*
Black/African American non-Hispanic	204	51.4	
Hispanic/Latino or other	73	56.6	
Sexual orientation			
Gay/Homosexual	538	60.8	< 0.001*
Bisexual	46	44.2	
HIV status			
Negative	409	59.8	0.317
Positive	133	55.4	
Unknown	42	64.6	
Employment status			
Employed	479	62.2	*< 0.000**
Unemployed	105	48.0	
Education			
High school or less	61	37.2	*< 0.000**
Some college or 2-year degree	202	59.2	
College or more	321	66.3	
Recent emotional IPV			
No recent emotional IPV	452	60.5	0.101
Recent emotional IPV	132	54.6	
Recent physical IPV			
No recent physical IPV	490	60.1	0.137
Recent physical IPV	94	54.0	
Recent sexual IPV			
No recent sexual IPV	562	59.5	0.212
Recent sexual IPV	22	50.0	
Total	585	59.1	

Table 5. Logistic regression results with odds ratios and (95% confidence intervals [CI]). Regression outcome was reporting that police would be less helpful towards a gay/bisexual man experiencing IPV than towards a heterosexual woman experiencing intimate partner violence (IPV). * Significant differences

Exposures	Odds ratio (95% CI)
Age	
18–24	Referent (1.0)
25–34	1.24 (0.86, 1.82)
35–44	1.26 (0.84, 1.88)
45+	1.01 (0.66, 1.55)
Race/Ethnicity	
White non-Hispanic	Referent (1.0)
Black/African American non-Hispanic	*0.73 (0.53, 0.99*)*
Hispanic/Latino or other	0.77 (0.50, 1.17)
Sexual orientation	
Gay/Homosexual	Referent (1.0)
Bisexual	0.83 (0.52, 1.30)
Employment status	
Employed	Referent (1.0)
Unemployed	0.79 (0.57, 1.11)
Education	
High school or less	Referent (1.0)
Some college or 2-year degree	*2.18 (1.46, 3.25)**
College or more	*2.54 (1.69, 3.80)**
Recent partner violence	
Recent emotional IPV	0.79 (0.54, 1.19)
Recent physical IPV	1.15 (0.72, 1.85)
Recent sexual IPV	0.77 (0.38, 1.57)
Homophobia indices	
Internalized homophobia index	*0.99 (0.98, 1.00)**
Homophobic discrimination index	*1.11 (1.06, 1.17)**
pseudo R-squared	0.0639

gay and bisexual men perceive the severity of partner violence in their community to be on par with the severity of partner violence in the heterosexual community. This finding can be contrasted to findings by McLaughlin and Rozee[35] who found that among lesbians, IPV was viewed as more common in different-sex relationships than in same-sex relationships. As all abusive male same-sex relationships involve an abusive male partner, and the culturally dominant image of partner abuse in heterosexual relationship portrays the male as the exclusive perpetrator of violence, gay/bisexual men make comparisons between male-female IPV and male-male IPV more readily. Alternatively, emerging evidence indicates that certain forms of IPV may be more prevalent in male same-sex relationships versus female same-sex relationships; respondents in this sample may have been reflecting their own personal knowledge of IPV in their communities when making these comparisons.[36]

While gay/bisexual men agree upon the commonness and severity of partner violence, their perceptions of police helpfulness in response to male-male partner violence are negative overall. This result, combined with the finding that men who reported more instances of homophobic discrimination also viewed a hypothetical police response to a gay/bisexual male victim of partner violence as poorer than that for a heterosexual female victim of violence, suggest an

understanding of gay men's perceptions of partner violence within their community that is in line with Meyer's theory of minority stress.[27,28] Specifically, gay men's learned expectations of stigma, prejudice, and rejection are likely being fueled by both a heteronormative society that views homosexuality as deviant *and* a hegemonic understanding that women, not men, are victims of partner violence. As these stressors are internalized by gay and bisexual men (and compounded by the additional shame felt by victims of partner violence for having experienced partner violence), this homophobia fatigue serves only to further isolate IPV victims in the "double closet" described by Kaschak.[37]

Another novel finding is that recent experience of IPV was not correlated to a negative perception of police helpfulness in the multivariate analysis. From the data, it is unknown whether or not persons who recently experienced partner violence did or did not contact the police; thus, it may be the case that persons experiencing IPV who did contact the police received help from them upon contact. Alternatively, if a respondent experiencing IPV contacted the police and was unaided by them, he may have applied this cynicism to both hypothetical situations presented (and therefore would not have been classified as having a disparate view). Furthermore, while 27.6% (n=273) of respondents were classified as having recently experienced IPV per the R-CTS, 36.3% of these respondents (n=99) reported experiencing only emotional/psychological IPV. Previous research with women has shown that, for a variety of reasons, persons experiencing non-physical, non-sexual IPV are less likely to contact the police than persons experiencing physical and/or sexual partner violence.[10, 14, 38] Additionally, same-sex abusive behavior has been shown (among lesbian women) to not be readily recognized as constituting IPV, another factor that would impact the process of deciding to contact the police.[35]

Indeed, minority stress (and in particular expectations of stigma and rejection) can be applied to Liang et al's[39] framework for help-seeking processes among survivors of IPV. First, the male victim of male-male IPV may delay recognizing and defining that IPV is a problem in his relationship due to cultural messaging that portrays the heterosexual woman as the victim of IPV (to the exclusion of the gay/bisexual man). Second, he may delay deciding to contact the police for assistance due to his learned anticipation of homophobic stigma and rejection, as such an anticipation may lead him to view the police as less legitimate entity. This lack of legitimacy, fueled by anticipation of homophobia, is supported by empirical findings in the literature. Seelau et al[40] demonstrated that while the victim's sex, rather than his sexual orientation, modifies an observer's perception of the severity of an episode of partner violence, IPV episodes are viewed as less severe and less warranting of intervention when the victim of the violence is male. Implicit in this gendered understanding of partner violence is the idea that men (and not women) should be able to defend themselves against an attacker.[41, 42] Finally, minority stress may impact the gay/bisexual male IPV victim's selection of support. Men who anticipate – and, indeed, may have experienced – homophobic stigma and rejection from police officers (an anticipation that is not entirely unfounded in the wake of the Atlanta Police Department's 2009 warrantless, illegal raid of the Atlanta Eagle), may seek alternative sources of support, such as friends and family, in lieu of legal support.[43]

LIMITATIONS

The findings of this study are limited by its design. We used venue-based sampling (VBS) to recruit participants, and, while VBS has been shown to generate samples that are similar to more classically rigorous recruitment methodologies, VBS necessarily excludes potential study participants who do not access venues during the sampling frame. The reported IPV prevalence is likely underestimated; although the survey was anonymous, respondents may have nonetheless been reluctant to report being criminally victimized by their partners. As was discussed previously, the survey instrument did not assess whether or not survivors of IPV did or did not actually contact the police for assistance, so the actual effectiveness of police intervention in cases of male same-sex IPV (or in any cases of IPV) is not here considered.

CONCLUSION

For all survivors of IPV, the ability to access police assistance is imperative. The actual helpfulness of a police response to a homosexual male victim of IPV is of secondary concern: if he never seeks police intervention for anticipation of futility and/or fear of rejection, whatever assistance the police would have been able to provide him will not reach him. The results of this study demonstrate that efforts must be made to improve both the supply of police assistance (i.e., its quality and effectiveness) and gay/bisexual men's demand for this assistance (i.e., their perceptions of its quality and effectiveness, in order words, police legitimacy). While efforts can be made to improve the training that police officers receive in terms of how to respond to situations of partner violence, police forces should attempt to increase their legitimacy by communicating to the LGBT community that their reports of partner violence will be taken seriously – and, internally, police forces must ensure that policies are in place that ensure that those reports will indeed be taken seriously. Community groups that provide support to LGBT persons experiencing partner violence can liaise with the domestic violence corps of their local police forces in order to provide this sensitivity training. As data are lacking, future research should analyze outcomes for gay/bisexual IPV survivors who do enlist police support in comparison to female IPV survivors who also access police support. From a policy perspective, lawmakers should ensure that the extra legal protections afforded to survivors of IPV, such as protective orders, are available to persons experiencing

IPV, regardless of gender or sexual orientation. A way to achieve this end is to extend legal recognition of same-sex partnerships – the right to marriage – to all same-sex couples who desire it. Emergent evidence already indicates that legal recognition of same-sex partnerships via marriage is correlated with decreased mental distress, including decreased internalized homophobia.[44, 45] Extending the legal recognition of marriage to same-sex couples may have the added benefit of having law enforcement officials increasingly appreciate the legitimacy of same-sex partnerships (and therefore the legitimacy of any possible violence that may occur during those partnerships), and will ensure that law enforcement is able to protect all IPV survivors equally under the law. As the response to same-sex IPV emerges in courthouses, police stations, hospitals, clinics, and community centers, the homophobia fatigue documented here among gay and bisexual men must be considered by practitioners not only as a potential barrier to success, but also as an opportunity for dialogue, modified efforts, and collaboration.

Address for Correspondence: Catherine Finneran, MPH. 1518 Clifton Rd NE, Atlanta, GA 30312. Email: cafinne@emory.edu.

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REFERENCES

1. Tjaden P, Thoennes N, Allison CJ. Comparing violence over the life span in samples of same-sex and opposite-sex cohabitants. *Violence Vict*. 1999;14(4):413–425.
2. Blosnich JR, Bossarte RM. Comparisons of Intimate partner violence among partners in same-sex and opposite-sex relationships in the United States. *Am J Public Health*. 2009;99(12):2182.
3. Messinger AM. Invisible Victims: Same-Sex IPV in the national violence against women survey. *J Interpers Violence*. 2011;26(11):2228.
4. Nieves-Rosa LE, Carballo-Diéguez A, Dolezal C. Domestic abuse and HIV-risk behavior in Latin American men who have sex with men in New York city. *J Gay Lesbian Soc Serv*. 2000;11(1):77–90.
5. Balsam KF, Lehavot K, Beadnell B. Sexual revictimization and mental health: a comparison of lesbians, gay men, and heterosexual women. *J Interpers Violence*. 2011;26(9):1798.
6. Pantalone DW, Hessler DM, Simoni JM. Mental health pathways from interpersonal violence to health-related outcomes in HIV-positive sexual minority men. *J Consult Clin Psychol*. 2010;78(3):387.
7. Finneran C, Stephenson R. Intimate partner violence among men who have sex with men: a systematic review. *Trauma Violence Abuse*. 2013; 14(2):168–185.
8. Relf M. Battering and HIV in men who have sex with men: a critique and synthesis of the literature. *J Assoc Nurses AIDS Care*. 2001;12(3):41–48.
9. Felson RB, Messner SF, Hoskin AW, et al. Reasons for reporting and not reporting domestic violence to the police. *Criminol*. 2002;40(3):617–648.
10. Coulter ML, Kuehnle K, Byers R, et al. Police-reporting behavior and victim-police interactions as described by women in a domestic violence shelter. *J Interpers Violence*. 1999;14(12):1290–1298.
11. Hilton NZ, Harris GT. Predicting Wife Assault A Critical Review and Implications for Policy and Practice. *Trauma Violence Abuse*. 2005;6(1): 3–23.
12. Berk RA, Campbell A, Klap R, et al. The deterrent effect of arrest in incidents of domestic violence: A Bayesian analysis of four field experiments. *Am Sociol Review*. 1992;57(5):698–708.
13. Mears DP, Carlson MJ, Holden GW, et al. Reducing Domestic Violence Revictimization The Effects of Individual and Contextual Factors and Type of Legal Intervention. *J Interpers Violence*. 2001;16(12):1260–1283.
14. Wolf ME, Ly U, Hobart MA, et al. Barriers to seeking police help for intimate partner violence. *J Family Violence*, 2003. 18(2): p. 121–129.
15. Singer SI. The fear of reprisal and the failure of victims to report a personal crime. *Journal of Quantitative Criminol*. 1988;4(3):289–302.
16. Hutchison IW, Hirschel JD. Abused women help-seeking strategies and police utilization. *Violence Against Women*. 1998;4(4):436–456.
17. Hamilton B, Coates J. Perceived helpfulness and use of professional services by abused women. *J Fam Violence*. 1993;8(4):313–324.
18. Fugate M, Landis L, Riordan K, et al. Barriers to domestic violence help seeking implications for intervention. *Violence Against Women*. 2005; 11(3):290–310.
19. Bennett L, Goodman L, Dutton MA. Systemic obstacles to the criminal prosecution of a battering partner a victim perspective. *J Interpers Violence*. 1999;14(7):761–772.
20. Fleury RE. Missing Voices Patterns of Battered Women's Satisfaction With the Criminal Legal System. *Violence Against Women*. 2002;8(2): 181–205.
21. Stephens BJ, Sinden PG. Victims' voices domestic assault victims' perceptions of police demeanor. *J Interpers Violence*. 2000;15(5):534–547.
22. Hickman LJ, Simpson SS. Fair treatment or preferred outcome? The impact of police behavior on victim reports of domestic violence incidents. *Law & Society Review*. 2003;37(3):607–634.
23. Tyler TR, Enhancing police legitimacy. *Ann Am Acad Polit Soc Sci*. 2004;593(1):84–99.
24. Tyler TR, Huo YJ. Trust in the law: Encouraging public cooperation with the police and courts. Vol. 5. *Russell Sage Foundation Publications*. 2002
25. Mazerolle L, Bennett S, Sargeant E, et al. Legitimacy in policing: a systematic review. *Campbell Collaboration*. 2012.

26. Hinds L, Murphy K. Public satisfaction with police: using procedural justice to improve police legitimacy. *Aust N Z J Criminol*. 2007;40(1):27–42.
27. Meyer IH. Minority stress and mental health in gay men. *J Health Soc Behav*. 1995;36(1):38–56.
28. Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychol Bull*. 2003;129(5):674.
29. Muhib FB, Lin LS, Stueve A, et al. A venue-based method for sampling hard-to-reach populations. *Public Health Reports*. 2001;116(1):216.
30. Brady S, Busse W. The gay identity questionnaire: a brief measure of homosexually identity formation. *J Homosex*. 1994;26(4):1–22.
31. Díaz RM, Ayala G, Bein E, et al. The impact on homophobia, poverty, and racism on the mental health of gay and bisexual Latino men: findings from 3 US cities. *Am J Public Health*. 2001;91(6):927–932.
32. Straus MA, Hamby SL, Boney-McCoy S, et al. The revised conflict tactics scales (CTS2). *J Fam Issues*. 1996;17(3):283–316.
33. Straus MA, Douglas EM. A short form of the Revised Conflict Tactics Scales, and typologies for severity and mutuality. *Violence Vict*. 2004; 19(5):507–520.
34. Straus MA. Measuring intrafamily conflict and violence: The conflict tactics (CT) scales. *J Marriage Fam*. 1979:75–88.
35. McLaughlin EM, Rozee PD. Knowledge about heterosexual versus lesbian battering among lesbians. *Women Therapy*. 2001;23(3):39–58.
36. Blosnich JR, Bossarte RM. Comparisons of intimate partner violence among partners in same-sex and opposite-sex relationships in the United States. *Am J Public Health*. 2009;99(12):2182–2184.
37. Kaschak E. Intimate Betrayal. *Women Therapy*. 2001;23(3):1–5.
38. Bonomi AE, Holt VL, Martin DP, et al. Severity of intimate partner violence and occurrence and frequency of police calls. *J Interpers Violence*. 2006;21(10):1354–1364.
39. Liang B, Goodman L, Tummala-Narra P, et al. A theoretical framework for understanding help-seeking processes among survivors of intimate partner violence. *Am J Community Psychol*. 2005;36(1):71–84.
40. Seelau E, Seelau S, Poorman P. Gender and role-based perceptions of domestic abuse: does sexual orientation matter? *Behav Sci Law*. 2003; 21(2):199–214.
41. Hollander JA. Vulnerability and dangerousness: the construction of gender through conversation about violence. *Gender Society*. 2001; 15(1):83–109.
42. Malamuth NM, Linz D, Heavey CL, et al. Using the confluence model of sexual aggression to predict men's conflict with women: a 10-year follow-up study. *J Pers Soc Psychol*. 1995;69(2):353.
43. Bagby D, Douglas-Brown L. Breaking: Atlanta City Council approves settlement over Atlanta Eagle gay bar raid. *The GA Voice*. 2010. Available at: http://www.thegavoice.com/index.php/news/atlanta-news-menu/1657-breaking-atlanta-city-council-approves-settlement-over-atlanta-eagle-gay-bar-raid.
44. Riggle EDB, Rostosky SS, Horne SG. Psychological distress, well-being, and legal recognition in same-sex couple relationships. *J Fam Psychol*. 2010;24(1):82–86.
45. Wight RG, LeBlanc AJ, Badgett L. Same-sex legal marriage and psychological well-being: findings from the California health interview survey. *Am J Public Health*. 2012.

Who Sends the Email? Using Electronic Surveys in Violence Research

Melissa A. Sutherland, PhD, RN* * Boston College, William F. Connel School of Nursing, Chestnut Hill, Massachusetts
Angela F. Amar, PhD, RN† † Emory University, Nell Hodgson Woodruff School of Nursing, Atlanta, Georgia
Kathryn Laughon, PhD, RN‡ ‡ University of Virginia School of Nursing, Charlottesville, Virginia

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Introduction: Students aged 16–24 years are at greatest risk for interpersonal violence and the resulting short and long-term health consequences. Electronic survey methodology is well suited for research related to interpersonal violence. Yet methodological questions remain about best practices in using electronic surveys. While researchers often indicate that potential participants receive multiple emails as reminders to complete the survey, little mention is made of the sender of the recruitment email. The purpose of this analysis is to describe the response rates from three violence-focused research studies when the recruitment emails are sent from a campus office, researcher or survey sampling firm.

Methods: Three violence-focused studies were conducted about interpersonal violence among college students in the United States. Seven universities and a survey sampling firm were used to recruit potential participants to complete an electronic survey. The sender of the recruitment emails varied within and across the each of the studies depending on institutional review boards and university protocols.

Results: An overall response rate of 30% was noted for the 3 studies. Universities in which researcher-initiated recruitment emails were used had higher response rates compared to universities where campus officials sent the recruitment emails. Researchers found lower response rates to electronic surveys at Historically Black Colleges or Universities and that other methods were needed to improve response rates.

Conclusion: The sender of recruitment emails for electronic surveys may be an important factor in response rates for violence-focused research. For researchers identification of best practices for survey methodology is needed to promote accurate disclosure and increase response rates. [West J Emerg Med. 2013;14(4):363–369.]

INTRODUCTION

Electronic surveys are a widely used method of collecting data from large samples in an efficient and timely manner. They are advantageous in younger, more technology-savvy populations, and for collecting data on sensitive topics in a confidential manner.[1,2] Research on topics related to interpersonal violence may be facilitated through the use of electronic surveys and the confidentiality and often anonymity they offer to victims and perpetrators. Much of the existing research compares electronic surveys to telephone or face-to-face surveys, reports response rates, and compares responders to non-responders. Yet methodological questions remain regarding other factors (i.e. the sender and subject line of the email communication) that may influence recruitment and response rates.

Limited research explores methodological questions associated with sample recruitment in electronic surveys. In using electronic surveys, researchers must identify the best

ways to get potential participants to the survey website and complete the survey. Common strategies include notification via email or postal mail,[3–5] publicity campaigns,[6] and use of a third-party sampling company[7] with much data on timing of contacts.[8] As public directories are not available for email addresses, access to email addresses and listservs presents challenges to researchers. Furthermore, based on the sender and subject line, potential participants will make a choice about whether or not to open the email and then in turn respond to the survey. A key consideration involves the sender of the email, which could be a university office, the researcher, or a survey sampling firm. The purpose of this research was to describe the response rates for violence-focused studies using survey methodology. The primary aim was to examine differences in response rates when the electronic survey comes from a campus office, a researcher, or a survey sampling firm. A secondary aim was to explore response rates for electronic and paper survey administration at predominantly minority institutions.

BACKGROUND

Electronic surveys use computers and web-based technology for subjects to participate in research. Electronic surveys have become an increasingly popular method of research as evidenced by the growing literature focused on electronic survey methods. Both on-line capability and equipment available to participants have continued to rise and allow for greater access to electronic surveys.[9] Electronic surveys have been used by researchers in a variety of fields, including health, policy research, and education. In particular, electronic survey methods have been well suited for studying sensitive behaviors,[10,11] including interpersonal violence,[3–5] especially among college students.

Benefits and Challenges of Electronic Surveys

Benefits to electronic surveys have been documented and include lower financial resources, shorter response time, researcher control of sample, and efficiency in data entry.[9,12,13] Despite these benefits, internet access and response rates issues are documented challenges of electronic surveys.[14,15] Comparisons reveal that the response rates to electronic surveys can be 11–20% less than those of other survey methods.[16,17] In contrast, response rates do not vary significantly between electronic and mail surveys in most college student samples.[17]

College students are an ideal population for electronic surveys as they are a homogenous group that can be targeted within a known population, allowing for comparison of respondents and the target population on key demographic variables.[7] Previous research using electronic surveys on alcohol use and violence with college students suggests that an acceptable return rate for electronic surveys of 30–35%, with studies reporting response rates between 2% and 35%.[3,6,8,18,19] Factors related to how participants were contacted and recruited could account for the differences in response rate. While researchers often indicate that participants received multiple reminders to complete the survey, little mention is made of who initiates the contact with potential participants.

College students are affected by the higher rates of interpersonal violence seen among adolescents.[20–22] Interpersonal violence is often unreported to campus officials and associated with health, social, academic, and lifestyle consequences, which makes the issue a priority area for research investigation.[23] Several studies on violence have used electronic surveys. In studies on stalking, key differences are seen in response rates. Reyns et al[3] report that after receiving an email sent from the university registrar's office, 13.1% of potential participants completed the survey, while Buhi et al[19] report a 35% response rate with no mention of the sender of the recruitment email. Amar et al[4] describe an email sent by the teacher's assistant with no mention of response rate. Finally, in a study on dating violence, Harned[5] contacted students using a mailed invitation to participate in an electronic survey and got a response rate of 38%.[5] In examining this group of studies, the lowest response rate was found when the communication was from someone outside of the study and in a central university role. For scientists focused on violence research, identification of best practices for survey recruitment is needed to increase response rates and improve the quality of the data.

Recruitment Strategies

Methods of contacting potential participants in the research literature include mail recruitment and use of a survey sampling firm. Mail recruitment includes postal mail and email, with a substantial body of research documenting effective practices for postal mail recruitment strategies.[8] Less research has examined email recruitment, which is often a mass email sent by either a campus office or the researcher. Email methods of recruitment provide a mechanism to contact eligible participants directly to invite them to participate in the research. The findings on electronic survey response rates vary in the existing violence literature with college students and suggest that the sender of the recruitment may be an important factor.[3–5,19]

A survey sampling firm can also be used to recruit participants. These companies maintain lists of email addresses of individuals who agree to receive survey invitations. Ramo et al[7] reported a firm's list as an effective way to target eligible participants.[7] An advantage is the ability to obtain lists of participants who clearly meet the sample inclusion criteria and who have agreed to complete surveys sent by the firm. Because recipients have theoretically agreed to receive email solicitations from the company, they should be more likely to open the email compared to individuals receiving emails from other databases. Disadvantages include that often the company is paid a fee to distribute the link, for each completed survey or the individuals are paid for completing responses, which can influence the quality of the responses and the costs of the research.[7] There is also the potential for subject burnout if they receive too frequent survey requests. Surveys sponsored by

academic and governmental agencies have higher response rates than those sponsored by commercial agencies.[16]

Electronic Surveys and Historically Black Colleges or Universities

Although college students are more likely to respond to electronic surveys compared to the general public, with younger, higher educated, and technologically-aware students having the best response rates,[1] these findings are not consistent for all college students. Students who are African American or Hispanic are less likely to respond than those who are white or Asian Americans. Krebs et al[24,25] conducted 2 large-scale web-based studies on sexual violence involving four Historically Black Colleges or Universities (HBCUs). Their response rates at HBCUs ranged from 15–32% with an average rate of 25%.[24] However, in a similar study conducted at 2 large public majority universities the response rate was 42%.[25] While neither study discusses the methods used to recruit participants, nor who made the contact with potential participants, the results suggest racial differences exist in electronic survey participation. It is important to examine these differences to determine best practices for recruitment of diverse participants in electronic survey research.

Electronic surveys are an important methodology for collecting data on sensitive topics, such as violence victimization and perpetration. Particularly for young, white, educated, technologically aware students, electronic surveys may be the best methodology to ensure an adequate sample for analysis and representation. While evidence is growing on best practices, methodological questions remain. The literature is lacking on best practices for sending email communication to potential subjects regarding research participation. This research attempts to address the gap in the literature by describing response rates of 3 violence-focused studies in which the sender of the recruitment email varied.

Purpose

The purpose of this analysis is to describe the response rates from 3 violence-focused research studies when recruitment emails are sent from the researcher, a campus office, or a survey sampling firm. A secondary aim was to explore differences in electronic and paper survey administration at predominantly minority institutions.

METHODS

Study 1: Fall 2009. Study 1 used a survey to conduct a study examining female college students' attitudes and beliefs associated with reporting of interpersonal violence. Data collection occurred at 5 university settings (Table 1). University 1 is a large private, university in the northeast with just under 10,000 undergraduates, of which 24% are minority. University 2 is a private historically black university in the south with 3,000 undergraduate students. Eighty percent of the students are Black/African American students at University 2. University 3 is a medium-sized private college located in the Midwestern with an undergraduate enrollment of about 4,000 students, of which 27% are students of color. University 4 and 5 are located in the south. University 4 is a small, private secular historically black university, and University 5 is a public university with 5,000 undergraduate students and 19% diversity.

Initially, both recruitment and data collection were to be electronic at all 5 universities and all potential participants were contacted by email for study recruitment. Participants at Universities 1 and 3 received an email from the researcher's email address. At Universities 2, 4, and 5, a campus office sent the emails to the participants. Each participant received an email introducing the study, one containing the link to the electronic survey, and 2 additional reminders to complete the survey/thank you for participating emails.[8] To increase participation, respondents had the opportunity to enter a lottery to receive gift cards after completing the survey. Qualtrics, a secure web site, was the web-based program used. After limited success at the 2 HBCUs, Universities 2 and 4, and discussions with campus administrators, the recruitment strategy was adapted. Trained research assistants approached potential participants in campus venues at University 2 and 4 to complete pencil and paper surveys.

Study 2: Fall 2010. Study 2 was designed to use a self-administered survey to conduct a study examining perpetration and victimization among male and female college students. Data for Study 2 was collected from 3 different universities (Table 1). University 1 and University 6 are both located in the northeast; University 1 a private university, with almost 10,000 undergraduate (14.600 with both undergraduate and graduate) students and University 6 a public university with 11,000 undergraduate students and 3,000 graduate students, 38% of whom are minority. University 7, located in the southeast is a public historically black university with 5,000 undergraduate students. As was noted in Study 1, institutional constraints were in a factor in Study 2 as well. Trained research assistants approached potential participants at University 7. The dean of students at University 1 provided researchers with a representative random sample of students' email addresses and emails were sent to potential participants by the researcher. At University 6, the Office of Student Affairs sent emails to a random sample of potential participants. The emails sent from both University 1 and 6 included a description of the study and a URL link to the electronic survey where participants could complete and submit the survey. Following principles outlined by Dillman[8], participants were to receive an introductory email and reminders as described in Study 1.

Study 3: Fall 2012. Study 3 was designed to use an electronic survey method to describe violent and coercive sexual behaviors among a national sample of college men and women. In order to obtain a national sample of college students, a

Table 1. Universities by characteristics.

University	Number of undergraduate students	Type	Location	% Minority
University 1	10,000	Private	Northeast	24
University 2	3000	Private HBUC	South	80
University 3	4000	Private	Midwest	27
University 4	400	Private HBUC	South	98
University 5	5000	Public	South	19
University 6	11,000	Public	Northeast	38
University 7	5000	Public HBUC	Southeast	97

HBUC, Historically Black University or College

national marketing firm that targets youth for both marketing and research purposes was selected. We selected a firm that reported a national database of over a million youth and could provide gender and racial/ethnic diversity to the sample. The firm we contracted with was the same firm used in the Sexual Victimization of College Women study. [20] The firm was paid to provide email notification regarding the research study to 4,500 college students. The researchers paid a fee to the firm to send the emails (spam free), and additional fees were paid to ensure adequate representations of gender, race/ethnicity, and age. As in our other studies, the firm sent 4 separate emails. The only difference in methods was that the emails came from the survey sampling firm. The first email notified participants about the upcoming email survey and the other emails were reminders to complete the survey. A link to the survey was included in 3 of the emails. No fees were charged for each completed survey nor were participants paid for their responses. For consistency purposes, the same email subject line (Subject) was used in all three studies.

Measures

All three studies measured victimization, perpetration, or both victimization and perpetration of interpersonal violence using reliable and valid instruments. Study 1 used measures of Theory of Planned Behavior,[26,27] the *Partner Abuse Scale*,[28,29] and the *Abuse Assessment Screen*.[30] Items related to stalking were also measured in Study 1. Study 2 and Study 3 used the *Sexual Experiences Survey (SES) Victimization and Perpetration Version*[31,32] to measure sexual perpetration and/or victimization. Past victimization was measured by the *Sexual and Physical Abuse History Questionnaire*.[33] As in other violence research, sexual victimization/perpetration items were placed at the end of a broader survey focused on general health and relationships. Participants were also asked about demographic information, alcohol behaviors, disordered eating, and history of victimization. For all 3 of the studies, the surveys were pre-tested with 10–15 diverse undergraduate students, checking for flow of the survey and time for completion. For all 3 of the studies discussed in this paper, completion time of the survey was approximately 30–40 minutes.

Human Subjects Protection

The institutional review boards at the participating universities approved each study. Due to the topic of the studies, researchers and the institutional review boards ensured that efforts for recruitment were appropriate. The consent informed participants that they could decline to answer any question or stop the survey at any time. The online survey had an "Exit Survey" button on each page of the survey. Each participant received information about the risks and benefits, purpose of the study, and confidentiality. A list of resources (national and local) related to violence and trauma was provided to all participants. Per the institutional review boards' request, if participants exited the online survey before completing, the list of resources was provided. For the study 3 only, national resources were provided but students were also encouraged to contact college health or student services are their specific university/college.

RESULTS

For study 1, 11,640 students were contacted, resulting in 3,565 completed surveys (Tables 2 and 3). The overall response rate for Study 1 was 30.6%. In examining the individual universities, 4,000 students at University 1 were sent a recruitment email from the researcher and the study had a response rate of 42%. University 2 and 4 (HBCUs) used both electronic and pen/paper methods and response rates of 22% and 10%, respectively. Study 2 involved 3 universities with 7,000 students contacted for participation. Of the 7,000 students contacted, 1,970 completed a survey (response rate 28%). At University 1, potential participants ($n = 2,500$) were contacted by the researcher and 1,100 students completed a survey (response rate of 44%). In contrast, at University 6 potential participants ($n = 2,500$) were contacted through an email sent by a campus office, and resulted in 439 completed surveys (17%). Finally University 7, HBCUs used only pencil and paper surveys, which had a response rate of 21%. For Study 3, a survey-sampling firm was used for recruitment. The firm sent emails to 4,500 college aged students inviting them to participate in a survey. Of the 4,500 students contacted, 85 "opened" the email with 1 (< 0.01) student completing the survey.

Secondary Aim

In Study 1, electronic recruitment was attempted at Universities, 2 and 4, both HBCUs. The initial emails at both universities were sent from the Dean of Students Office email address. At University 2, email recruitment yielded 79 surveys (4%) as compared to pen and paper recruitment of 358 surveys (18%). At University 4, email recruitment yielded 6 surveys ($<$ 1%) as compared to 10% using pen and paper surveys ($n = 80$).

Table 2. Response rate of universities.

	Total number of students contacted	Total number of surveys completed	Response rate	Recruitment email (Researcher vs. campus office vs. outside agency)
Study 1				
University 1	4000	1713	42%	Researcher
University 2[a]	2000	437	22%	*
University 3	2840	1040	37%	Researcher
University 4[a]	800	86	10%	*
University 5	2000	289	14%	Campus office
Study 2				
University 1	2500	1100	44%	Researcher
University 6	2500	439	17%	Campus office
University 7[a]	2000	431	21%	*
Study 3	4500[b]	1[c]	0.02%	Outside agency[b]

* due to institutional constraints pencil and paper surveys were done
[a] Historically Black University or College (HBUC)
[b] Researchers used a national marketing email list. The list of e-mail addresses was considered to be spam free.
[c] Marketing firm reported that 85 emails were ‘‘opened’’; only 1 electronic survey completed

Email recruitment consisted of 4 emails over a 2-week period. After discussions with Student Affairs at both campuses, the decision was made to collect pen and paper surveys. In the recruitment process, trained research assistants advised participants to complete only one survey.

In Study 2, in the early meetings, personnel at University 7 advised the research team that electronic surveys were not successful in recruitment for previous studies. Based on the team's experience, the decision was made to only collect data using pen and paper surveys.

DISCUSSION

The findings of this analysis suggest that the sender of the recruitment email for electronic surveys (i.e. the survey invitation) may have a role in response rates. It could influence the recipient's decision to open the email invitation, as well as their decision to respond by completing the survey. Our findings suggest that the researcher-initiated recruitment email is a more successful method of recruiting participants than a recruitment email sent by campus officials (Table 3). The higher rate for researcher-initiated recruitment emails is consistent with the limited research available in this area.[19] In our analysis, recruitment emails sent by a campus office had lower response rates. This is consistent with previous research.[3] However, most research studies using electronic surveys provide no mention of the sender of the emails.

Table 3. Comparison of email sender and response rates.

	Response rates	
Email sender	%	Mean (SD)
Researcher	37, 42, 44	41 (3.6)
Non-researcher		
Institutional	14, 17	15.5 (2.1)
Outside agency	0.02	NA

Several factors could account for the differences in response rates. Email is a fast-growing form of communication meaning that people receive large numbers of messages daily. Decisions are made based on priority assigned to an email. Often for college students, campus offices such as Deans of Students and Academic Divisions send out multiple emails on a wide range of topics that may or may not pertain to most students. This could suggest that students could become less sensitive and may not open all emails received from these individuals or offices. For students who do open these emails, the perceived threat to confidentiality could be a factor. The text of the message was from the researcher but the return address was from an administrative office. Having a campus official associated with the study could produce concern about the potential sharing of findings, despite information to the contrary in the email describing the study.

On the other hand, an email from an unknown or unrecognized sender may pique the curiosity of the recipient to open it. An email sent from an individual on the same campus may also bring a sense of closeness and not feel like an email sent by an outsider. Further, the name of the individual may be recognizable to students and could also prompt students to open the email and respond to the survey. The threats to confidentiality may not be associated with an email from, or study participation with a researcher on the campus. For individuals at another university, receiving an email from

someone at another university with a name@university.edu address may also pique the potential participant's curiosity; making it more likely they will open the email and then participate in the research. The university email address may connote a level of importance to the request.

Paper surveys at HBCUs had the next highest response rates. This is consistent with findings from a meta-analysis concluding that paper surveys were superior to email surveys.[17] Paper surveys are typically distributed as correspondence from the researcher. For example, the return address of the researcher is on the envelopes or the survey responses are collected in person from a member of the research team. This would not produce confusion about who would receive the data.

Finally, the lowest rates were seen from the use of a survey-sampling firm. While only one attempt was made at using the sampling firm, the results were abysmal. This is not consistent with other research using sampling firms for recruitment. Ramo et al[7], in their study comparing 3 recruitment methods, reported that the survey sampling firm had the highest recruitment compared to the other 2 methods (internet advertisement and Craigslist). However, these researchers did not provide the total number of potential participants contacted by the firm or a response rate. Furthermore, Ramo et al[7] also paid a fee for each completed survey, which does create additional costs. Similar to Study 3, the sender of the email invitation was a survey-sampling firm, which recruits and maintains a list of potential survey respondents. Presumably because potential survey respondents have agreed to be contacted by researchers or marketers, individuals should open emails sent through the firm and complete the survey. This was not the situation in our research, where few participants opened the email invitation and even fewer completed the survey. Possible explanations include that individuals may develop burn out with the survey-sampling firm and the receipt of emails. It is also possible that these mass emails are caught in the spam filters of recipients, although the firm used in Study 3 ensured spam-free email addresses. As only one attempt was made, further research is needed on this method of sample recruitment.

The findings also suggest that pen and paper surveys are a more effective way to complete research at HBCUs rather than with electronic surveys. Our findings were similar to the work of Krebs et al[24,25] where more robust response rates were associated with pen and paper survey administration than with electronic surveys. A systematic review of factors affecting response rates to web-based surveys found that African Americans were less likely to participate.[1] Reports from the campus administrators at the 3 campuses used in this study reported that the low turnout was because the campus internet servers were not strong and prone to disruptions. Further, while many college-aged individuals have internet access on their phones or other devices, these devices may not remove this barrier. Survey completion on these devices can be more difficult due to the small screen size and differences in browser capabilities on these devices vs. computers. However, African Americans in general have lower participation rates in health research than other racial/ethnic groups, and greater effort must be made to identify a number of options, which improve minority participation in research.[34] More research is needed to elucidate factors that enable higher response rates from African American participants.

LIMITATIONS

The findings present a beginning description of differences in response rates to electronic surveys based on who contacts the subjects for study recruitment. The findings are limited by the use of 3 studies at 7 universities from one research team. Due to the smaller number of universities, we were unable to determine the statistical significance of the different response rates. An examination of the methods and response rates shows higher rates with researcher-sent emails and lower rates with institution-sent emails. However, with only 7 observations, we did not have adequate power to conduct any meaningful statistical analysis. The survey sampling firm had the lowest rates. However, with only one observation, we are unable to draw conclusions. The findings do suggest that differences existed depending on how individuals were contacted; however, more research is needed to fully understand the relationship of sender to response rates in electronic surveys. One consistent factor was that the same subject line was used in all 3 studies. Different campus factors could have influenced the response rates. For example, while the public campuses we used all wanted to send the emails to the participants, the two private HBCUs also wanted to send the emails. One public university was in the Northeast and the other was in the Southern U.S. Future research could explore institution-specific variations in response rates to electronic surveys. Given the limited research on this important topic; however, these findings offer some insight into mechanisms for improving response rates to electronic surveys and a rationale for considering paper and pencil surveys in some cases. Research with students can uncover factors that prompt them to participate in research and to open emails regarding research.

CONCLUSION

In conclusion, this analysis represents a preliminary step toward understanding the importance of the email sender in electronic survey response rates. Our analysis found that recruitment emails sent by researchers had better response rates as compared to recruitment emails sent from campus officials. Future research is needed to understand the influence of the sender of recruitment emails in electronic surveys. College students are at highest risk for interpersonal violence and the need for quality data is critical. For scientists focused on violence research in this population, identification of best practices for survey methodology will promote accurate disclosure, increase response rates, and ensure data quality.

Address for Correspondence: Melissa A. Sutherland, PhD, RN. Boston College, Connell School of Nursing, Cushing Hall, 140 Commonwealth Avenue, Chestnut Hill, MA 02467. Email: melissa.sutherland@bc.edu.

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REFERENCES

1. Fan W, Yan Z. Factors affecting response rates of the web survey: A systematic review. *Computers in Human Behavior*. 2010;26:132–139.
2. Couper M, Conrad F, Tourangeau T. Visual context effects in web surveys. *Public Opinion Quarterly*. 2007; 71:623–634.
3. Reyns BW, Henson B, Fisher BS. Stalking in the twilight sone: Extent of cyberstalking in victimization and offending among college students. *Deviant Behav*. 2012;33:1–25.
4. Amar AF, Alexy EM. Coping with stalking. *Issues in Mental Health Nursing*. 2010;31:8–14.
5. Harned MS. Abused women or abused men? An examination of the context and outcomes of dating violence. *Violence Vict*. 2011;16:269–285.
6. DuRant R, Champion H, Wolfson M, et al. Date fighting experiences among college students: Are they associated with other health-risk behaviors? *J Am Coll Health*. 2007;55:291–296.
7. Ramo DE, Hall SM, Prochaska JJ. Reaching young adult smokers through the Internet: Comparison of three recruitment mechanisms. *Nicotine Tob Res*. 2010;12:768–775.
8. Dillman DA, Smyth JD, Christian LM, eds. *Internet, mail, and mixed-mail surveys: the tailored design method*. Hoboken, NJ: Wiley; 2009.
9. Dillman D, ed *Mail and internet surveys: The tailored design method*. Hoboken, NJ: Wiley; 2007.
10. Reddy MK, Fleming MT, Howells NL, et al. Effects of method on participants and disclosure rates in research on sensitive topics. *Violence Vict*. 2006;21(4):499–506.
11. Knapp H, Kirk SA. Using pencil and paper, Internet and touch-tone phones for self-administered surveys: Does methodology matter? *Computers in Human Behavior*. 2003;19:117–134.
12. Lefever S, Dal M, Matthiasdottir A. Online data collection in academic research: Advantages and limitations. *British Journal of Educational Technology*. 2007;38:574–582.
13. Tourangeau R. Survey research and societal change. *Annu Rev Psychol*. 2004;55:775–801.
14. Couper MP. Web surveys: A review of issues and approaches. *Public Opinion Quarterly*. 2000;64:464–494.
15. Fricker RD, Schonlau M. Advantages and Disadvantages of Internet Research Surveys: Evidence from the Literature. *Field Methods*. 2002; 14:347–367.
16. Manfreda KL, Bosnjak M, Berzelak J, et al. Web surveys versus other survey modes. A meta-analysis comparing response rates. *Journal of the Market Research Society*. 2008;50: 79.
17. Shih TH, Fan X. Comparing response rates in e-mail and paper surveys. A meta-analysis. *Educational Research Review*. 2009;4:26–40.
18. Benfield JA, Szlemko WJ. Internet-based data collection: Promises and realities. *Journal of Research Practice*. 2006;2:D1.
19. Buhi ER, Clayton H, Surrency HH. Stalking victimization among college women and subsequent help-seeking behaviors. *J Am Coll Health*. 2009;57:419–426.
20. Fisher BS, Cullen FT, Turner MG. *The sexual vicitmization of college women*. Washington, D.C.: National Institute of Justice;2000.
21. Fisher BS, Cullen FT, Turner MG. Reporting sexual victimization to the police and others: results from a national-level study of college women. *Criminal Justice Behav*. 2003;30:6–38.
22. Black MC, Basile KC, Breiding MJ, et al. *The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 Summary Report*. Atlanta, GA2011.
23. Tjaden P, Thoennes N. *Full report of the prevalence, incidence, and consequences of violence against women*. Washington: US Department of Justice;2000. NCJ 183781.
24. Krebs CP, Lindquist CH, Barrick KB. *The historically Black College and University Campus sexual assault (HBCU-CSA) study*: Department of Justice (US);2010.
25. Krebs CP, Lindquist CH, Warner TD, et al. *The campus sexual assault (CSA) study: Final Report*. 2007.
26. Ajzen I. *Attitudes, personality and behavior*. 2nd ed. New York: Open University Press; 2005.
27. Fishbein M, Ajzen I. *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley; 1975.
28. Attala JM, Hudson WW, McSweeney M. A partial validation of two short-form Partner Abuse Scales. *Women Health*. 1994;21(2–3):125–139.
29. Hudson WW, MacNeil G, Dierks J. *Six new assessment scales: a partial validation*. Tempe, AZ: Walmyr Publishing Company; 1995.
30. Soeken K, McFarlane J, Parker B, et al. The Abuse Assessment Screen: A clinical instrument to measure frequency, severity, and perpetrator of abuse against women. In: Campbell J, ed. *Empowering Survivors of Abuse: Health Care for Battered Women and their Children*; 1998.
31. Koss MP, Abbey A, Campbell R, et al. The sexual experiences short form victimization (SES-SFV). Tucson, AZ: University of Arizona; 2006.
32. Koss MP, Abbey A, Campbell R, et al. The sexual experiences short form victimization (SES-SFP). Tucson, AZ. : University of Arizona; 2006.
33. Leserman J, Drossman DA, L. Z. The reliability and validity of a sexual and physical abuse history questionnaire in female patients with gastrointestinal disorders. *Behav Med*. 1995;21:141–150.
34. UyBico SJ, Pavel S, Gross CP. Recruiting vulnerable populations into research: A systematic review of recruitment interventions. *J Gen Intern Med*. 2007;22:852–863.

Sexualized and Dangerous Relationships: Listening to the Voices of Low-Income African American Girls Placed at Risk for Sexual Exploitation

Anne Kruger, PhD* [*] Georgia State University, Center for Research on School Safety, School Climate and Classroom Management, Atlanta, Georgia
Erin Harper*
Patricia Harris[†] [†] Coweta County Schools, Newnan, Georgia
DeShelle Sanders[‡] [‡] Clayton County Schools, Jonesboro, Georgia
Kerry Levin[§] [§] Park Hill Schools, Kansas City, Missouri
Joel Meyers, PhD*

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Introduction: Youth from low-income, urban backgrounds face significant challenges to maintaining a positive developmental trajectory. Dangerous neighborhoods and stressed relationships are common in these settings and threaten adaptation by weakening the natural assets that undergird resilience. African American girls in these contexts face specific, multiple risks, including gender stereotyping, violence, and sexual exploitation. The commercial sexual exploitation of children (CSEC) is a multibillion-dollar industry victimizing over 1 million children around the globe.[1] The typical victim in 1 city in the southeastern United States is an African American girl 12-14 years old. There has been little research investigating the characteristics of girls placed at risk for CSEC and even less research on the personal perspectives of these girls.

Methods: Over 3 school terms we provided preventive intervention groups for 36 African American middle school girls who were placed at risk because they lived in neighborhoods with high rates of interpersonal violence and CSEC. Two group leaders and a process recorder took detailed notes on each group session. Our focus on group conversations over a period of weeks increased the probability of recording spontaneous, open comments by the children and is a promising method with this population. The data were analyzed qualitatively and resulted in an account of the girls' own views of the environmental challenges and personal experiences that may influence their development.

Results: The girls' language during the group sessions contained 4 themes: difficulty forming trusting relationships, frequent peer aggression, familiarity with adult prostitution, and sexuality as a commodity.

Conclusion: Our research shows how girls placed at risk for CSEC view their own lives. These children described violence and sexual exploitation and cited limited supports to protect them from these risks. Understanding the perspectives of these girls should generate future research and intervention strategies to support their coping and resilience. [West J Emerg Med. 2013;14(4):370–376.]

INTRODUCTION

Youth from low-income, urban backgrounds face significant challenges to maintaining a positive developmental trajectory. Dangerous neighborhoods and stressed relationships in these settings threaten adaptation by weakening the natural assets that undergird resilience. African American girls in

these contexts face the specific, inter-correlated risks of sexualization, ethnic stereotyping, and violence. The project described here used a unique approach to data collection by recording discussions held by low-income African American middle school girls participating in preventive intervention groups to enhance wellbeing. The purpose of the research was to learn how the girls themselves view risks and their assets to deal with them. Taking a narrative psychology approach, we argue that an individual's psychosocial functioning is related to, and perhaps the result of, a life narrative, that is, his or her personal construal of lived experience.[2]

A Focus on Low-Income African American Girls

The sexualization of girls in American culture is a significant threat to healthy development. Sexualization refers to the inappropriate imposition of sexuality on a person and/or valuing a person only as an object of sexual desire.[3] A task force of the American Psychological Association[3] reports on the ubiquitous messages sexualizing girls that are reinforced by others, including parents and teachers. With repeated exposure over development, many girls internalize these attitudes.[3-6] The results can include shame, anxiety, body dissatisfaction, low self-esteem, depression, and sexualized expectations of the future.[3] Further, African American girls are stereotyped as "hypersexual" and in low-income urban environments they are more likely to experience abuse, early sexual activity, and early pregnancy.[7-14]

Miller[15] reports that African American girls in low-income neighborhoods are overlooked as victims of violent crime and often experience gendered aggression during routine events. These episodes range from harassment to assaults and are perpetrated by male neighbors. African American girls who have been exposed to violence are more likely than boys to report anxiety and depression.[16]

One of the gravest manifestations of sexualization and interpersonal violence is the commercial sexual exploitation of children (CSEC), a multibillion-dollar industry that victimizes over 1 million children around the globe.[1] CSEC includes practices by which a person, usually an adult, achieves sexual gratification, financial gain or advancement through the abuse or exploitation of a child, forcing children into activities such as prostitution, pornography, nude dancing, stripping, sex tourism, and trafficking for sexual purposes.[17,18] Personal predictors of CSEC victimization include poverty, unstable housing, hostile family environments, runaway/truant/dropout status, emotional/behavioral problems, sexual abuse, and early sexual behavior.[19,20] The typical victim in 1 southeastern city is an African American girl 12 to 14 years old.[21]

Despite the serious problems associated with CSEC, there has been very little research addressing this topic. While the environments that place children at risk have been described, little is known about the characteristics, coping, and resilience of children living in those environments. Prevention of sexual exploitation must begin with research on the early identification of children who are vulnerable and on the resources available to them.[22] There are barriers to conducting such research. For example, it has been suggested that at-risk girls in impoverished circumstances have difficulty establishing trusting relationships.[23] Thus, research using traditional interview strategies with this population may have serious limitations. Ongoing preventive intervention groups have the potential to establish trust. Research based on girls' discussions in such safe settings may provide a more accurate view of their perceptions and contribute knowledge to prevention science in general and the prevention of CSEC in particular.

Rationale for Study

The goal of this research is to construct a systematic description of the students we served in a preventive intervention, African American urban middle school girls at risk of CSEC and interpersonal violence. Our goal was to enhance the scholarly literature regarding these students by listening to their narratives about personal strengths and weaknesses and about the challenges and supports in their environments.

METHODS

Context

Since 2007 our team has worked with a southeastern city's urban schools affected by CSEC with approval by a local institutional review board. We assessed the specific needs of African American girls in middle school and designed and delivered an original prevention program to promote their healthy psychological development and reduce their risk for victimization. Using the Socioeconomic Mapping and Resource Topography (SMART) system (http://smart.gismapping.info), we confirmed that the school sites for the project, described below as Schools 1 and 2, are located in high-risk neighborhoods. Combining 3 weighted census tract measures—the percent of persons living below the federal poverty line, the percent of persons receiving public assistance, and the percent of families with minor children that are female headed—the Community Disadvantage Index (CDI) is more reliable than any single indicator and normed to reflect the distribution of community disadvantage across census tracts in the United States. According to the SMART system, both of our intervention sites have a CDI score of 10, indicating the greatest disadvantage. Furthermore, Priebe and Suhr[36] identified these locations as having adult and juvenile prostitution arrests at especially high rates. Thus, young adolescent girls in these schools are placed at risk by cultural objectification, community disadvantage, community violence, and CSEC–related arrests in their neighborhood.

To begin with, we visited these neighborhoods and talked with administrators, teachers, and afterschool staff about life in the local schools. We also researched culturally specific curricula for African American girls. Greater adherence to Afrocentric values is predictive of higher self-esteem and

perceived social support, and higher ethnic identity has been shown to have a direct relationship with higher sexual refusal efficacy in African American girls. [24,25] Although this review was informative, there are very few evidence-based prevention programs for African American girls, even fewer that focus on building strengths in resistance to the prevailing culture, and none that are specific to CSEC. [26] Therefore, we created a curriculum responsive to the community's needs. By including content to enhance physical and emotional safety, both in and out of school, we addressed community threats while working to promote the social-emotional development of girls. Our curriculum included sessions on trust, relationships, decision-making, and coping with negative stereotypes and emotions. We did not directly address sexualization, but, as discussed below, participants raised the issue.

Participants

The present study focuses on middle school girls who participated in our prevention curriculum during 3 school terms (Spring, Summer, and Fall of 2009). The setting for Spring 2009 was Middle School #1, a public school in an urban district. The setting for Summer 2009 and Fall 2009 was Middle School #2, another school in the same district. Both schools were located in high-risk neighborhoods, as described above. In both schools, 92% of the students were considered economically disadvantaged and 94% of the students were African American. The participants in our curriculum sessions each term were sixth, seventh and eighth grade African American girls (age in years M=11.04, SD =1.21) enrolled in a voluntary afterschool program at their school. The intervention sessions took place as part of the afterschool programming. Over the 3 terms, there were 36 participants (10 girls meeting as 1 group during Spring 2009, 14 girls meeting as 2 groups in Summer 2009, and 12 girls meeting as 1 group in Fall 2009). Sessions met for 1.5-2 hours on a weekly basis for 8 weeks.

Procedures and Instrumentation

Two graduate students facilitated each group and recorded their observations after the sessions using field notes. Two other graduate students served as process recorders (one recorder per group) and wrote their observations of the interactions, discussions and the curriculum throughout each session. These graduate students were either in training to become, or already were, certified school psychologists. Their training included advanced study in providing mental health services in schools, as well as qualitative and quantitative research methods. The written descriptions of each session (8 sessions per group X 4 groups = 32 sessions) consisted of transcribed spontaneous participant comments and observations of participant behaviors. We reviewed these notes weekly to make the intervention continuously responsive to the girls' interests and needs. At the same time these notes were research data, and we were mindful of the contrast and synergy of the 2 purposes. The topics of the sessions and our interest in coping with risks affected the content of the discussions and thus the data collected.

Data Analysis

The research team (2 university faculty members and the 4 students described above) met on a weekly basis while running the groups to process the collected data, implementing both open coding and selective coding using the constant comparative method.[27,28] Open coding resulted in 8 codes with high inter-rater agreement (92% when creating codes and 96% when checking for coder drift). This report is focused on the subsequent analyses conducted using selective coding and pattern analysis procedures to examine the relationships among the codes.[27,28] Selective coding was accomplished by having the team read through transcripts to seek integrating themes and by using the constant comparison method to identify a set of themes that occurred repeatedly throughout the transcripts. The entire research team provided feedback and reached consensus on the themes.[29,30] Then the themes were applied to each transcript by 3 research assistants who reached 100% consensus about these coding decisions.[29,30] This resulted in 4 integrative themes that are presented in the results section.

RESULTS

We identified 4 risk-related themes in the group discussions: (1) *difficulty forming trusting relationships,* (2) *physical aggression in peer relationships,* (3) *familiarity with adult prostitution, and* (4) *girls' sexuality as a commodity.*

Difficulty Forming Trusting Relationships

We defined trust as the ability to rely on others to maintain confidentiality and alliances. The girls participating in this research described difficulty establishing trusting relationships with peers, teachers, and other adults in the community. For instance, at the beginning of the group process, the girls developed their own group rules. One participant indicated concern with the group rule that the girls trust the other group members; this student indicated that this was the most difficult rule to follow. Another girl could not name a single person she trusted. Further, some of the group members indicated that they could not trust the police. One girl related her experience in which a police officer failed to stop a man from masturbating in front of her. Some of the following illustrative quotes resulted when the girls were asked directly whom they trust: "Nobody." "I don't know." "I don't trust nobody because people is fake." "We ain't no family." "I don't have friends; I have associates." "… I don't trust nobody." One girl said: "You can't trust all your Church members."

The participants' discussion about trust had particular implications for their relationships with other girls. Interestingly, the mistrust of other girls was often discussed with respect to their boyfriends. "Friends keep your secrets to themselves…they don't try to sneak and talk to a guy you

like." [Friends] "don't tell secrets, lie, talk behind your back, fake." "Your friend will not go behind your back and talk to your boyfriend." "Friends don't instigate or try to sabotage your relationship with another person."

Girls also mentioned difficulty with adults. This was especially clear during a discussion about fathers. "My daddy broke a promise to me." " *My* daddy broke a promise to me. He say he gone give us money, then he say he gone be down here and he doesn't come." "Daddies are never there…My daddy's … in jail. He said he was going to send me some money and he didn't."

Despite concerns about trust, the facilitators reported that over time some students formed positive relationships with them. Also, some girls stated that the trust-building exercises in the curriculum were a favorite. For example, one girl said: "I liked when we had to be in the circle and trust each other." Another stated: "I would want to do more and different trust building games."

Physical Aggression in Peer Relationships

We defined physical aggression as hostile behavior, or threats of hostile behavior, intended to cause physical harm. Physical aggression could be witnessed by, initiated by, or directed against the girls. This theme reflected the participants' perception that physical aggression was a common and significant feature of peer interaction. For example, one girl claimed to protect herself from peers at school by carrying a razor blade under her tongue. Students' statements about aggression were supported by facilitator and process recorder observations of the girls and their environment. Some girls laughed at other girls in the sessions. Although they were reminded of the rules of group behavior, some occasionally struck each other. On one occasion during the afterschool hours, facilitators observed a boy openly carrying a gun on the school grounds.

The following statements by the participants illustrate this theme. "You have to fight to get respect." "If you are going to roll your eyes at someone, you should be ready to fight." "If you talk about somebody behind their back you need to be ready to fight." The discussion of physical aggression also included some recognition of the roles played by gangs. For example, one girl said: "I was bad. When I got here this girl tried me and I was about to fight her. This girl tried to get me to be in 'Young Killer's Clique' because she said I can fight. I was like I ain't no killer. I ain't joining that."

Familiarity with Adult Prostitution

We defined prostitution as the practice of soliciting customers to pay for sexual acts. The students demonstrated familiarity with prostitution and the practices of prostitutes in their neighborhood, calling one neighborhood prostitute by name. One participant described an episode in which she accompanied her grandfather in the car to buy gas. While they were both inside the car, a prostitute knocked on the grandfather's window to solicit him. The student described the conversation that ensued as the grandfather dismissed the prostitute, and she concluded by observing, "These girls offer something strange for a piece of change." Other girls reported: "It's a whole bunch of girls [prostitutes] at Metropolitan [Avenue]. I will be at the Chevron on Metropolitan, and they will knock on people's windows." "They will walk up to the prettiest cars. They will think, 'if they can afford them, they can afford me.' Sometimes the car will take them away. The security guards don't say nothing. They young. Like twenties." "If some of these girls don't change the way they are right now then they are going to be like that." "Me and my mom talk about some stuff like this. It might not be their intention to degrade themselves, but they might need quick money. They might start off doing something that's legal then it turns illegal."

The participants also discussed their view of how girls can be lured into prostitution, referring to the techniques that men use in what they called the "boyfriend-to-pimp transition." "Some guys you date will try to get you to do things and say they will never do this and that to you and before you know it you're in the back of a car." The students made it clear that they were aware of CSEC risks and of how pimps provide clothes, food, shelter, jewelry, and drugs to control girls. In some cases this knowledge came from their exposure to popular media.

Girls' Sexuality as a Commodity

We defined sexuality as values, ideas, or constructs about one's sexual feelings, identity or behavior. During the sessions the participants described their own and others' sexual behavior with boys in language suggesting that sexual involvement is expected and that girls see their sexuality as a commodity. The girls described their preference for wearing short skirts and tight clothing when going to peer gatherings outside of school; one stated, "I don't want to look like no lil baby." They also described the presence of older men lurking on the perimeter of the schoolyard and outside peer gathering spots. One girl stated that a strange man approached her on the street and said, "If I were your pimp, I'd let you wear lots of makeup."

The girls reported heavy use of popular media, e.g., videos with sexualized depictions of females or with implied violence against females. Consistent with this exposure, when discussing news reports describing the severe beating of a popular female musician by her equally famous boyfriend, the girls argued that the beating was justified. "She was going through his phone. She should go to jail, too." "His career is ruined and she has a CD coming out." Their statements echo popular cultural values that devalue and objectify females.

This theme was especially clear when the girls described the activities at their local skating rink, where there is little to no adult supervision, low lighting, and the principal activity is sexual behavior. To describe the skating rink activities the girls used language derived from the adult entertainment industry.

For example, one girl noted that the main purpose of going to Metro (the skating rink) is to give boys lap dances (as is done in adult strip clubs), and she said if girls miss a week they might lose their "regular customer." Another girl described how a boy will lie on his back and a girl will "do a split" on him. In one session the girls discussed the merits of stripping as a career. The general assessment of their activities regarding sexuality was summed up this way: "Whatever y'all do in the adult clubs is innocent compared to what happens at Metro."

DISCUSSION

This research makes an important contribution to the literature, in part because there has been so little prior research about children at risk for CSEC. This investigation explored the perceptions of African American middle school girls who may be at risk of exploitation (rather than already victimized). Our findings add a unique perspective by using qualitative methods that highlight the voices of the girls participating in preventive intervention groups. One finding that seems particularly significant is that children who live in communities that place them at risk for sexual exploitation face the dual problems of chronic exposure to physical violence in relationships and routine exposure to sexualization and prostitution.

Difficulty forming trusting relationships has been found in previous research to be a predictor of maladjustment.[31-33] Diminished trust is implicated in both physical aggression and sexualization. It seems likely that these variables influence each other recursively whereby aggression and sexualization reduce trust, and this in turn exacerbates those problems. Future research is needed to learn more about the level of trust experienced by girls, the factors that contribute to and inhibit the development of trusting relationships, and how the degree of trust experienced influences the physical aggression and sexual behaviors exhibited by girls. Over the course of their group meetings, the participants became more interested in trust exercises and developed a level of trust with the adult facilitators. We acknowledge that this change in their attitude may represent their desire to please the facilitators more than a change in their lives outside the group. However, it is possible that attempts to please adults in authority may be first steps toward more lasting behavioral change with others. We also note that we did not see similar shifts suggesting a social desirability bias in the other problem areas outlined.

The fact that trust emerged as a key variable in this investigation reinforces the use of a novel methodology to learn about the perceptions of these girls. Rather than conduct formal interviews where problems with trust may be exacerbated, we listened to their conversations in groups where they felt comfortable over a period of weeks. This is a unique methodology, clearly useful with this population, and it is recommended for future research.

Another major theme was familiarity with adult prostitution. That these students knew a local prostitute by name suggests their proximity to criminal activity and thus their vulnerability to exploitation. Priebe and Suhr[21] reported that areas with high levels of adult prostitution also have high levels of juvenile prostitution. Reinforcing this vulnerability was the girls' discussion of their relationships with boys. The language they used frequently borrowed from both the legal and illegal adult sex industry, referring to boys as "customers" and to the boyfriend-to-pimp transition.

Miller[15] indicates that African American adolescent girls need outlets to discuss environmental threats as an aid to coping. However, discussion with family members is often not an option in stressed situations, and institutions are often distrusted. One of our intervention goals was to provide a safe context for girls to express concerns. Another was to arm girls against cultural assumptions about gender and ethnicity that contribute to their potential victimization. We wanted our participants to recognize their common interests in the face of shared community threats and to find support and trust in each other. It is important to underscore that this was accomplished in an afterschool program located in the participants' schools, even though schools are among the areas of the environment that these girls distrust.

LIMITATIONS

Despite the important contributions of this investigation there were limitations that must be considered. First, a relatively small number of children participated in this research (N = 36). While this provided the opportunity to construct a richly detailed description, caution must be exercised regarding any generalization of these findings. Further, all the children participated in an afterschool program with their parents' permission. Since parent involvement is widely considered a protective factor, these participants probably do not represent the most disadvantaged children in these neighborhoods. Second, although collecting data through an intervention group may have the advantage of overcoming distrust and may result in more open responses, this is an assumption that requires further investigation. It must be recognized that even with enhanced trust, the group format may influence the statements made by the participants based on their social awareness that they are in a group or based on their desire to please or appease the adult facilitators. Third, it should be noted that our curriculum directly addressed relationships, decision-making, and safety. Thus, the themes that emerged from the girls' discussions were prompted by that content and should be interpreted in that light. Our curriculum did not directly address sexuality or prostitution, since these topics are off limits in many schools. Nonetheless, the girls chose to raise these issues in the group sessions. Further research is required to learn more about the contexts in which these students spontaneously discuss such issues.

CONCLUSION

Our study demonstrates how research and practice can

be used to strengthen each other. In this case the content and procedures used in this intervention combined with our use of field notes and process recording allowed us to collect systematic information from middle school girls about their experiences in relationships. Our findings have implications for enhancing our understanding of young African American girls who may be at risk for commercial sexual exploitation and for developing prevention interventions to support their healthy development.

Address for Correspondence: Anne Cale Kruger, PhD. Center for Research on School Safety, School Climate and Classroom Management, Georgia State University, P.O. Box 3979, Atlanta, GA 30302-3979. Email: ackruger@gsu.edu.

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REFERENCES

1. Swecker C. Statement before the Committee on Security and Cooperation in Europe, U.S. Helsinki Commission: Exploiting Americans on American Soil: Domestic Trafficking Exposed. Available at: http://www.fbi.gov/congress/congress05/swecker060705.htm; 2005.
2. Thorne A, McLean KC, Lawrence, AM. When remembering is not enough: Reflecting on self-defining memories in late adolescence. *J Pers*. 2004; 72:513-542.
3. American Psychological Association. *Report of the APA task force on the sexualization of girls. W*ashington, DC: American Psychological Association; 2007
4. Banarjee R, Dittmar H. Individual differences in children's materialism: The role of peer relations. *Pers Soc Psychol B*. 2008; 34:17-31.
5. Mead, GH. *Mind, self, and society*. Chicago: University of Chicago Press; 1934.
6. Vygotsky LS. *Mind in society: Development of higher psychological processes*. Cambridge, MA: Harvard University Press; 1978.
7. Bryant Y. Relationships between exposure to rap music videos and attitudes toward relationships among African American youth. *J Black Psychol.* 2008; 34:356-380.
8. Johnson JD, Adams MS, Ashburn L, et al. Differential gender effects of exposure to rap music on African American adolescents' acceptance of teen dating violence. *Sex Roles.* 1995; 33:597–605.
9. Ward LM. Understanding the role of entertainment media in the sexual socialization of American youth: A review of empirical research. *Dev Rev*. 2003; 23:347-388.
10. Ward LM, Hansbrough E, Walker E. Contributions of music video exposure to black adolescents' gender and sexual schemas. *J Adolesc Res*. 2005; 20:143-166.
11. Stephens DP, Few AL. The effects of images of African American women in hip hop on early adolescents' attitudes toward physical attractiveness and interpersonal relationships. *Sex Roles.* 2007; 56:251-264.
12. Stephens DP, Phillips L. Integrating Black feminist thought into conceptual frameworks of African American adolescent women's sexual scripting processes. *Sexualities, Evolution & Gender*. 2005; 1:37-55.
13. Belgrave FZ, Marin BV, Chambers D. Cultural, contextual and interpersonal predictors of risky sexual attitudes among urban African American girls in early adolescence. *Cultur Divers Ethnic Minor Psychol.* 2000; 6:309-322.
14. Limbert WM, Bullock HE. "Playing the fool:" U.S. welfare policy from a critical race perspective. *Fem Psychol*. 2005; 15:253-274.
15. Miller J. *Getting played: African American girls, urban inequality, and gendered violence.* New York, NY: NYU Press; 2008.
16. Foster JD, Kuperminc GP, Price AW. Gender differences in posttraumatic stress and related symptoms among inner-city minority youth exposed to community violence. *J Youth Adolesc.* 2004; 33:59-70.
17. Estes RJ, Weiner NA. The commercial sexual exploitation of children in the United Stated. In: Cooper SW, Estes RJ, Giardio, AP, Kellogg, ND, Vieth VI, eds. *Medical, legal and social science aspects of child sexual exploitation.* St. Louis, MO: GW Medical Publishing; 2005: 95-128.
18. Flores RJ. *Protecting our children: Working together to end child prostitution.* Paper presented at: Protecting Our Children: Working Together to End Child Prostitution, 2002; Washington, DC.
19. Azaola E. The sexual exploitation of children in Mexico. *Police Pract Res*. 2006; 7:97-110.
20. Brannigan A, Gibbs Van Brunschot E. Youthful prostitution and child sexual trauma. *Int J Law Psychiatry.* 1997; 20:337-354.
21. Priebe AS, Suhr C. *Hidden in plain view: The commercial sexual exploitation of girls in Atlanta*. Atlanta, GA: The Atlanta Women's Agenda; 2005.
22. Todres J. Taking prevention seriously: Developing a comprehensive response to child trafficking and sexual exploitation. *Vanderbilt Journal of Transnational Law.* 2010 ; 43:1-56.
23. Murray C, Avoch K. Teacher-student relationships among behaviorally at-risk African American youth from low-income backgrounds: Student perceptions, teacher perceptions, and socioemotional adjustment correlates. *J Emot Behav Disord*. 2011; 19:41-54.
24. Constantine MG, Alleyne VL, Wallace BC, et al. Africentric cultural values: Their relation to positive mental health in African American adolescent girls. *J Black Psychol,* 2006; 34:281-308.
25. Corneille MA, Belgrave FZ. Ethnic identity, neighborhood risk, and adolescent drug and sex attitudes and refusal efficacy: The urban African American girls' experience. *J Drug Educ.* 2007; 37:177-190.
26. Robinson T, Ward JV. A belief in self far greater than anyone's disbelief: Cultivating resistance among African American female

adolescents. In: Gilligan C, Rogers AG, Tolman DL, eds. *Women, girls, and psychotherapy: Reframing resistance*. Binghamton, NY: Hawthorn Press; 1991:87-103.

27. Strauss A, Corbin J. *Basics of qualitative research: Techniques and procedures for developing grounded theory.* 2nd ed. Thousand Oaks, CA: Sage Publications; 1998.
28. LeCompte MD, Schensul JJ. *Ethnographer's toolkit, book 5: Analyzing and interpreting ethnographic data.* Walnut Creek, CA: Altamira Press; 1999.
29. Hill CE, Thompson BJ, Hess SA, et al. Consensual qualitative research: An update. *J Couns Psychol*. 2005; 52:196-205.
30. Hill CE, Thompson BJ, Nutt Williams E. A guide to conducting consensual qualitative research. *Couns Psychol*. 1997; *25*:517-572.
31. Henrich CC, Kuperminc GP, Sack A, et al. Characteristics and homogeneity of early adolescent friendship groups: A comparison of male and female clique and nonclique members. *Appl Dev Sci.* 2000; 4:15-26.
32. Kuperminc GP, Blatt SJ, Shahar G, et al. Cultural equivalence and cultural variance in longitudinal associations of young adolescent self-definition, interpersonal relatedness to psychological and school adjustment. *J Youth Adolesc*. 2004; 33:13-31.
33. Parker JG, Asher SR. Peer relations and later personal adjustment: Are low-accepted children at risk? *Psychol Bull*. 1987; 102:357-438.

Examining the Intersections between Child Maltreatment and Intimate Partner Violence

Alessandra Guedes, MA, MSc* [*] Pan American Health Organization/World Health Organization, Washington, DC
Christopher Mikton, PhD† [†] World Health Organization, Geneva, Switzerland

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Intimate partner violence (IPV) against women and child maltreatment (CM) have been traditionally addressed in isolation by researchers, policy makers and programs. In recent years, however, a growing body of research suggests that these types of violence often occur within the same household and that exposure to violence in childhood—either as a victim of physical or sexual abuse or as a witness to IPV—may increase the risk of experiencing or perpetrating different forms of violence later in life.[1-4] Moreover, physical punishment of children is more common in households where women are abused and interventions that address child maltreatment may be less effective in households experiencing IPV.[1-6]

This evidence calls for greater recognition of the intersections between types of violence. We outline 4 specific gaps and present an integrated framework for moving the field forward with respect to the intersection of IPV and CM.

1. NEED FOR CLARITY ABOUT WHAT CONSTITUTES CM AND IPV

Researchers disagree on how to define CM and IPV. Regarding definitions of CM, it is unclear if they should include behaviorally specific acts, the perpetrator's intent, the actual experience of harm and what types of corporate punishments should be considered CM.[7] Another question is when and how definitions of CM and IPV should include emotional abuse. Researchers often limit the definition of IPV to physical acts. However, evidence suggests that stressful household environments – such as those plagued by marital conflict and emotional intimate partner abuse – have serious harmful effects on children's overall development. Unfortunately, defining and measuring "emotional abuse" pose serious challenges to researchers.[9]

2. NEED TO CLARIFY WHAT WE MEAN BY "INTERSECTION"

The intersection of CM and IPV takes many forms. Co-occurrence can be loosely defined as IPV and CM taking place during the same time period within a single family. However, there are questions about the degree to which definitions of co-occurrence should include awareness of co-occurrence by different family members, the definition of family, the definition of the time frame, and the most appropriate unit of analysis (e.g. the family, the child, the adult woman).

Even without specific co-occurrence, there are at least 4 other ways in which IPV and CM may intersect. First, they may have similar short- and long-term physical, emotional, and socio-occupational consequences. Second, one type of violence may be a risk factor for the other. Third, IPV and CM may share risk factors and causal mechanisms. Fourth, some prevention and response strategies may be effective for both.

3. NEED TO CONSIDER OTHER TYPES OF VIOLENCE THAT MAY ALSO CO-OCCUR WITH IPV AND CM

Researchers have persuasively argued that there is a need to consider multiple forms of childhood victimization ("poly-victimization"), including assaults, bullying and sexual victimization outside the family, CM by parents or caregivers, property victimization, and witnessing violence.[10-13] Research shows that two-thirds of children who experienced any type of violence in the previous year had experienced 2 or more types, which further underscores that addressing the relationship between IPV and CM is an important start, but we should expand our focus to examine other forms of victimization as well.[10,12]

As the framework proposed in the figure shows, addressing poly-victimization and multiple forms of intersections may be complex but has the potential to produce a more complete range of the prevalence of an individual's total exposure to violence.

4. NEED TO ADDRESS THE GAPS IN KNOWLEDGE ABOUT HOW TO IMPROVE PREVENTION AND RESPONSE TO IPV AND CM

As we move towards greater integration of research,

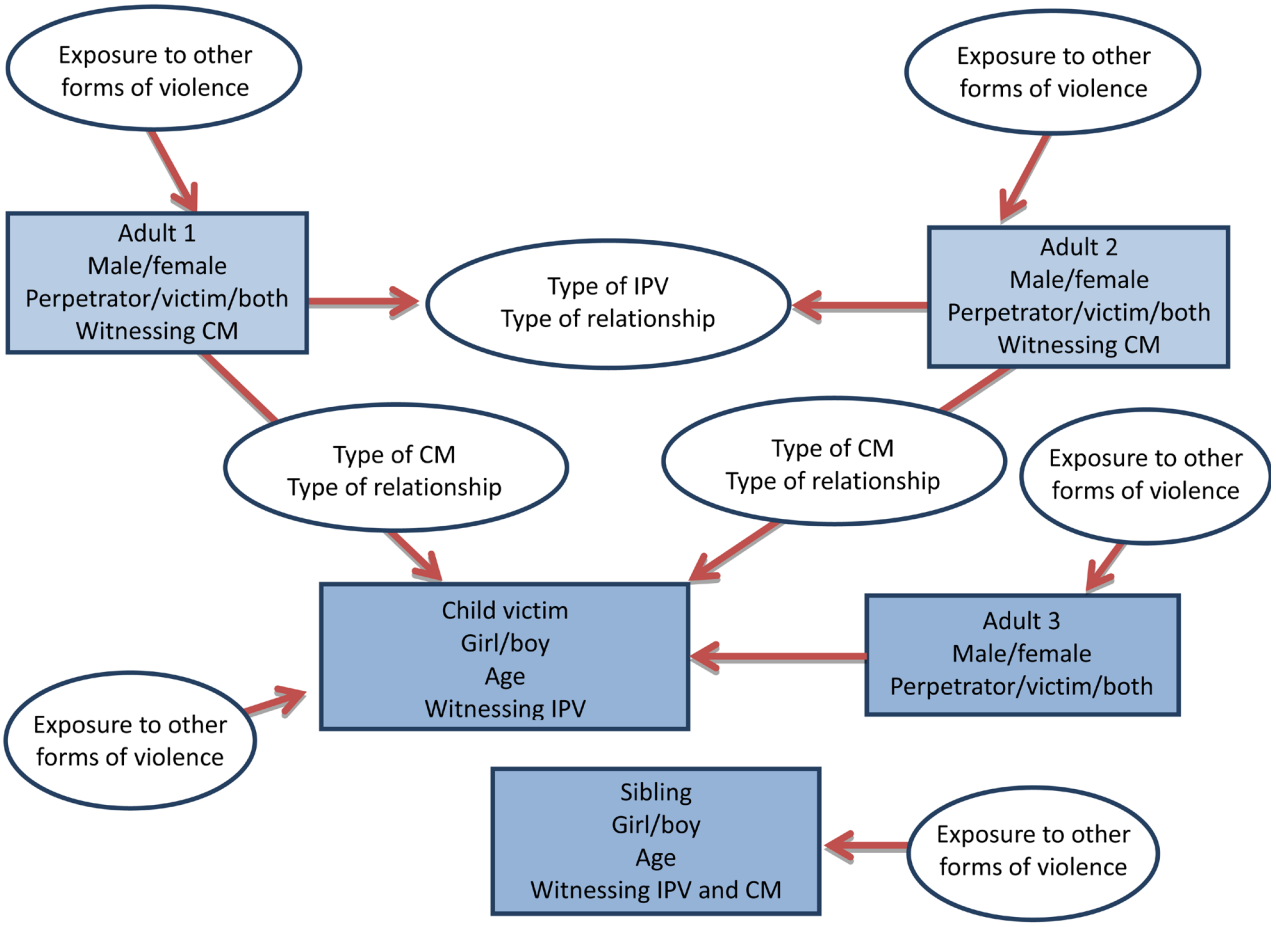

Figure. Possible patterns of co-occurrence of intimate partner violence (IPV) and child maltreatment (CM).

policy and programs addressing IPV and CM, the following important gaps in knowledge should be addressed.

a) The prevalence of different patterns of co-occurrence of CM and IPV

In measuring the prevalence of co-occurrence, 3 denominators are typically used – prevalence of co-occurrence in the general population, prevalence of CM in families in which IPV occurs, and prevalence of IPV in families in which CM occurs, each leading to quite different measures of prevalence. For example, in the United States, the lifetime prevalence of co-occurrence of IPV and CM in the general population is 6%, and the prevalence of CM in families in which IPV occurs is 45%, but these may vary across countries.[14-18]

b) Consequences of co-occurrence

Literature is scarce on the consequences of co-occurrence of IPV and CM for the child victim and few studies have examined the long-term consequences specifically of co-occurrence to adult victims. A key question is whether children who experience CM and exposure to IPV will suffer worse outcomes than those with fewer forms of victimizations by violent exposures.[18-22]

c) Risk and protective factors

Risk factors specific to the co-occurrence of CM and IPV are not well understood, and less is known regarding protective factors and resilience in the aftermath of such co-occurrence. Several theories have informed this area, including social cognitive, developmental-ecological, personality disorder, and family systems theories leading to hypotheses about aggressive individuals and family stress.[14,16,17] However, the process of understanding the interplay of risk and protective factors associated with the co-occurrence of CM and IPV is still only in its very early stages.

d) Strategies to prevent and mitigate consequences

The evidence regarding effective strategies that expressly target the co-occurrence of IPV and CM remains scarce. The presence of IPV can make CM prevention less effective.[6] However, CM can be successfully addressed in the context of IPV.[23,24] Unfortunately, few rigorously evaluated programs have specifically targeted the co-occurrence of IPV and CM.

e) Intersections in the case of non-co-occurrence

With regards to the intersections of IPV and CM without co-occurrence, the evidence is limited. Few studies have

systematically compared the similarities and differences in the nature and severity of consequences of IPV and CM, for example. CM may be a risk factor for IPV later in life, but few studies have systematically compared the risk factors for CM and IPV and their relative strengths of association.

It is imperative that we address CM and IPV with a new and integrated framework that addresses the needs and gaps outlined above. This is a particularly important issue for moving these fields forward and for providing better prevention interventions, medical care and services to victims of violence. It is also of particular importance that these issues are addressed for the benefit of international comparisons and collaborations. As such, we urge our fellow researchers to work with us to address these important issues.

Address for Correspondence: Alessandra C. Guedes, MA, MSc. Pan American Health organization/World Health Organization, 525 23rd St. NW, Washington, DC 20037-2895. Email: guedesal@paho.org.

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REFERENCES

1. Bott S, Guedes A, Goodwin M, et al. Violence against women in Latin America and the Caribbean: A comparative analysis of population-based data from 12 countries. 2012. Washington, DC: Pan American Health Organization.
2. Abramsky T, Watts CH, Garcia-Moreno C, et al. What factors are associated with recent intimate partner violence? Findings from the WHO multi-country study on women's health and domestic violence. *BMC Public Health*. 2011;11:109–125.
3. Gómez AM, Speizer IS. Intersections between childhood abuse and adult intimate partner violence among Ecuadorian women. *Matern Child Health J*. 2009;13(4):559–566.
4. Speizer IS, Goodwin M, Whittle L, et al. Dimensions of child sexual abuse before age 15 in three Central American countries: Honduras, El Salvador, and Guatemala. *Child Abuse & Neglect*, 2008;32(4):455–462.
5. Øverlien C. Children exposed to domestic violence: Conclusions from the literature and challenges ahead. *J Soc Work* 2010;10(1):80–97.
6. Eckenrode J, Ganzel B, Henderson CR, Preventing child abuse and neglect with a program of nurse home visitation - The limiting effects of domestic violence. *JAMA*. 2000;284(11):1385-1391.
7. Krug EG, Dahlberg LL, et al., Eds. (2002) World report on violence and health. Geneva, World Health Organization.
8. National Scientific Council on the Developing Child (2005). Excessive Stress Disrupts the Architecture of the Developing Brain: Working Paper No. 3. Available at: http://www.developingchild.harvard.edu
9. Jewkes R. Emotional abuse: a neglected dimension of partner violence. *Lancet*. 2010;376(9744):851-2.
10. Finkelhor D. Childhood victimization: violence, crime, and abuse in the lives of young people. *New York Oxford University Press*. 2008
11. Finkelhor D, Orrarod RK, Turner HA. Poly-victimization: A neglected component in child victimization. *Child Abuse & Neglect.* 2007;31(1):7-26.
12. Finkelhor D, Turner H, Ormrod R, et al. Violence, abuse, and crime exposure in a national sample of children and youth. *Pediatrics.* 2009;124(5):1411-1423.
13. Hamby S, Finkelhor D, Turner H, et al. The overlap of witnessing partner violence with child maltreatment and other victimizations in a nationally representative survey of youth. *Child Abuse & Neglect.* 2010;34(10):734-741.
14. Appel AE, Holden GW. The co-occurrence of spouse and physical child abuse: a review and appraisal. *J Fam Psychol.* 1998;12(4):578-599.
15. Edleson, J. Violence against women and children, vol 1, mapping the terrain, vol 2, navigating solutions. *Sex Roles*. 2012;67(3-4):251-252.
16. Jouriles EN, McDonald R, Slep AMS, et al. Child abuse in the context of domestic violence: prevalence, explanations, and practice implications. *Violence and Vict*, 2008;23(2):221-235.
17. Knickerbocker L, Heyman RE, Slep AMS, et al. Co-occurrence of child and partner maltreatment - definitions, prevalence, theory, and implications for assessment. *European Psychologist.* 2007;12(1):36-44.
18. Chan KL. Co-occurrence of intimate partner violence and child abuse in Hong Kong Chinese families. *J Interpers Violence*, 2011;26(7):1322-1342.
19. Hughes HM, Parkinson D, Vargo M. Witnessing spouse abuse and experiencing physical abuse: A "double whammy". *J Fam Violence*. 1989;4:1471-1484.
20. McCloskey LA, Fernandezesquer ME, Southwick K, et al. The psychological effects of political and domestic violence on Central-American and Mexican immigrant mothers and children. *J Community Psychol.* 1995;23(2):95-116.
21. Sousa C, Herrenkohl TI, Moylan CA, et al. Longitudinal study on the effects of child abuse and children's exposure to domestic violence, parent-child attachments, and antisocial behavior in adolescence. *J Interpers Violence.* 2011;26(1):111-136.
22. Moylan CA, Herrenkohl TI, Sousa C, et al. The effects of child abuse and exposure to domestic violence on adolescent internalizing and externalizing behavior problems. *J Fam Violence.* 2010;25(1):53-63.
23. Jouriles EN, McDonald R, Spiller L, et al. Reducing conduct problems among children of battered women. *J Consult Clin Psychol*. 2001;69(5):774-785.
24. McDonald R, Jouriles EN, Skopp NA. Reducing conduct problems among children brought to women's shelters: Intervention effects 24 months following termination of services. *J Fam Psychol.* 2006;20(1):127-136.

Metrics for Local Community Planning and Evaluation: The Case for Observational Measurement of High Risk Rural Sub-Populations in Occupant Safety

Steve Davidson, M.Ed*
James Barlament, MA†
Lisa Dawson, MPH*
Carol Cotton, PhD†

* Georgia Department of Public Health, Atlanta, Georgia
† Traffic Safety Research and Evaluation Group, University of Georgia, Athens, Georgia

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Introduction: The purpose of this study is to examine the relevance of non-specific safety belt use data for interventions to rural teens and to pilot a data collection project to provide more specific data to traffic safety stakeholders and educators in rural areas.

Methods: Twelve high schools in Southeast Georgia were used for observed safety belt data collection over a 16 month period. Observational surveys were conducted at the entrance to student parking lots of the studied schools in the morning or afternoon. Observers were trained and survey methods were standardized to maintain comparability between results.

Results: Observational surveys revealed a safety belt usage rate of 38.6% among high schools teens at the studied high schools. Safety belt usage rates ranged from 9.5% to 66.9%. Observed safety belt use for female vehicle occupants was 48.4% compared to 35.6% for males.

Conclusion: The observational survey results from this study support research showing that rural teens have lower safety belt usage rates than adults or urban teens. Despite efforts to target rural areas, programs must specifically target sub populations, especially rural male teens, in order to hold any traction. Because of the wide gap between measured safety belt use in rural Georgia (79.9%) and the studied rural high schools (38.6%), local program planners must assess actual safety belt usage in their high risk rural teen population in order to use accurate metrics for intervention and education efforts. [West J Emerg Med. 2013;14(4):380–383.]

BACKGROUND

Motor vehicle collisions (MVC) are the leading cause of death for Americans ages 15 to 19.[1] In 2009, the death rate for U.S. teenaged drivers was nearly twice that of all other drivers.[2] Teenagers frequently do not use safety belts, making them more vulnerable to injuries.[3] According to studies, the observed belt use among teens was 80% in 2008, the lowest of any age group with 56% of teenagers in fatal crashes unbuckled in 2009.[4]

The risk for death in a MVC is greater for rural teens. In 2009, 60% of fatal crashes and 59% of fatalities involving teen drivers occurred on rural roadways.[2] These higher rates can result from design elements including narrower lanes, soft shoulders, and tree-lined roadways, as well as behavioral factors and higher speed limits.[5-6] Additionally, commuting longer distances exposes rural drivers to greater risk of crashing from drowsy driving.[7,8,9] The remoteness of rural roads can delay the detection of crashes and the administration of medical care.[8-11]

Rural teens are more likely to ride unrestrained than their urban counterparts.[10] Rural teens are less likely to consider legal or physical consequences of driving unrestrained.[11] Observed safety belt usage rates of teens on high school campuses are generally lower than state rates or those of

Table 1. 2009 Georgia unbelted teen crashes, injuries and fatalities (Source: Georgia Department of Transportation).

	Rural teens	Urban teens
Unbelted crash rate per 10,000 licensed Drivers	42.3	24.0
Unbelted Injury rate per 10,000 licensed Drivers	21.5	8.7
Unbelted fatality rate per 10,000 licensed Drivers	1.1	0.2

Table 2. Observational survey results with 1,538 vehicle occupants.

High school	Date observed	Vehicle occupants observed	Female safety belt usage rate	Male safety belt usage rate	Overall safety belt usage rate
1	Sept 2009	136	39.1%	25.4%	25.7%
2	Sept 2009	135	20.0%	13.8%	17.0%
3	Sept 2009	95	37.5%	17.9%	29.5%
4	Oct 2009	84	17.1%	4.1%	9.5%
5	Oct 2009	121	67.1%	66.7%	66.9%
6	Feb 2010	73	17.5%	6.1%	12.3%
7	Dec 2009	55	21.4%	22.2%	21.8%
8	Feb 2010	64	39.4%	45.2%	42.2%
9	Oct 2010	124	60.3%	52.5%	55.6%
10	Oct 2010	128	63.2%	43.7%	52.3%
11	Nov 2010	481	55.0%	38.5%	45.9%
12	Jan 2011	42	52.4%	9.5%	31.0%

other age groups.[12] Research on rural high school campuses is less extensive, but some studies indicate safety belt use among rural high school teens is even lower.[13] It is of great importance for rural communities to conduct programs to prevent teen MVC.

The observed safety belt usage rate in Georgia was 89.6% in 2010.[14] Since passage of a primary safety belt law in 1996, belt use in rural Georgia increased from 62.9% to 88.2% in 2011, 5% lower than the rest of the state, but consistent with a study by the CDC finding rural belt use higher in states with primary safety belt laws.[15] In 2009, the rate of rural teen drivers unbelted in crashes was 42.3 per 10,000 licensed drivers compared to 24.0 for urban teens (Table 1).

The rate of rural Georgia teens who are unbelted in crashes is an ongoing problem and indicates low belt use for this population. Because state level observational reports do not break down seatbelt use by age demographic, traffic safety stakeholders and educators in rural areas may use incomplete or inappropriate data as metrics to focus interventions on most at risk groups. At 88.2%, seatbelt use in rural Georgia is up 10.1% over the last 10 years, according to available data.[16] This study sought to collect specific and relevant data for evaluating and planning for rural sub-populations.

METHODS

High schools for data collection were located within the 22-county Southeast Region Rural Roads Initiative (RRI). The RRI is a cooperative program between the Georgia Department of Public Health and the University of Georgia, funded by the Georgia Governor's Office of Highway Safety (GOHS), aimed to decrease deaths and injuries on rural roads.[17] Southeast Georgia is populated by small towns located in largely unpopulated areas. Population density is often one half to one third of the state average. All counties in this area are above the state average for people living under the poverty rate, and except for one with a large state university, all counties have education rates lower than the state average.

We chose 12 high schools based on a convenience sample of counties with established community mobilization groups. Selected schools had personnel who were previously connected to the Rural Roads Initiative. Observational safety belt surveys were conducted at the entrance to student parking lots of the studied high schools by staff from the Rural Roads Initiative, members of community mobilization groups, and/or students from the high schools over a 16-month period from September 2009 to January 2011. Surveyors were to observe at least 100 vehicles where possible, and report the safety belt usage of drivers and front seat passengers with gender as a variable. We based our survey instrument on one used by the University of Oklahoma for their state observational study.[18] If safety belt usage could not be determined, the vehicle occupants were not counted.

Observers located in safe areas where they could see vehicles entering the student parking lots. Surveys were conducted one time per school in either the morning or afternoon. RRI staff trained students and volunteers on

observation methods, the observation instrument, and recording procedures. RRI staff members were present for all observations to ensure survey integrity. Observational survey methods were consistent in all cases.

RESULTS

Observational surveys revealed a safety belt usage rate of 38.6% among high school teen drivers and front seat passengers at 12 rural high schools in southeast Georgia (Table 2). A total of 1,538 teenage vehicle occupants were observed driving into or out of student parking lots. Of these, 593 were wearing safety belts, and 945 were not restrained.

Observed safety belt use for female teenage vehicle occupants was higher than males at 10 of 12 high schools participating in this study. Overall, female occupants had a safety belt usage rate of 48.4% compared to 35.6% for males.

DISCUSSION

In Georgia, overall rural seatbelt usage rates were raised 10.1% over the past 10 years due to state level legislation, enforcement and educational efforts. Recently, the National Highway Traffic Administration (NHTSA) performed Rural Seatbelt Use Demonstration Projects across rural areas of the country, including Georgia.[19] Although Georgia results are not yet published, the Wyoming Demonstration Project raised rural belt use from 61.2% at the start of the initiative to 72.2% at the conclusion.[20] The current study indicates that even with such rural-specific traffic safety initiatives, high risk sub-populations may not change.

Teen drivers, especially males, in Georgia rural areas are perhaps the most susceptible population to vehicle crashes for both behavioral and environmental reasons. The local, specific and relevant observational data gathered in this study is needed for health professionals and other stakeholders to design programmatic efforts to reach this sub-population and reduce morbidity and mortality resulting from traffic crashes.

LIMITATIONS

Seatbelt surveys were conducted primarily by local stakeholders and students with no previous experience with observational studies. The program lacked a second set of observers at each location to derive a measure of observer reliability and internal validity. Because observers were visible in most cases, students could have buckled up just prior to entering schools grounds only on observation days. Sample sizes from schools varied based on student populations. Schools chosen for observations were based on convenience sampling and access to reliable observers in the immediate area.

CONCLUSION

The observational survey results from this study support research showing that rural teens have lower seatbelt usage rates than adults or urban teens. The gaps between overall teen and adult belt use, rural and urban belt use, and rural and urban fatality rates suggest the need for traffic safety efforts in rural high schools to prevent the perpetuation of existing high risk behaviors.

The current study illuminates disparities that exist in Georgia between rural seatbelt use data reported at the state level and actual seatbelt use data gathered from local observations. At the state level, rural belt use was 88.2% in 2011, which is a 10.1% increase over the last 10 years. The state report also does not include age demographics in its analysis. Based on the results of seatbelt observations in rural southeast Georgia high schools, which measured seatbelt use at 38.6%, this state level data is not appropriate or applicable for local interventions. In order to base seatbelt intervention programs on suitable data tailored to sub-populations, local programmers must go into the field to observe their own communities.

Address for Correspondence: James Barlament, 300 River Road, University of Georgia, Athens, GA 30602-6522. Email: jambar@uga.edu

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REFERENCES

1. Web-based Injury Statistics Query and Reporting System (WISQARS). Centers for Disease Control & Prevention website. Available at: http://www.cdc.gov/injury/wisqars/index.html. Accessed October 15, 2011.
2. Fatality Analysis Reporting System (FARS). National Highway Traffic Safety Administration website. Available at: http://www-fars.nhtsa.dot.gov/Main/index.aspx. Accessed November 12, 2010.
3. Williams AF, AT McCartt, L Geary. Seatbelt use by high school students. Injury Prevention. 2003; 9: 25-28.
4. National Highway Traffic Safety Administration Traffic Safety Facts – Seat Belt Use in 2008 – Demographic Results. Washington, DC: National Highway Traffic Safety Administration; 2009. DOT HS 811 183.
5. Blatt J, SM Furman. Residence location of drivers involved in fatal crashes. Accid Anal Prev. 1998;30(6):705-11.
6. Zwerling C, Peek-Asa C, Whitten PS, et al. Fatal motor vehicle crashes in rural and urban areas: decomposing rates into contributing factors. *Inj Prev*. 2005;11:24-28.
7. Kmet L, Macarthur C. Urban-rural differences in motor vehicle crash fatality and hospitalization rates among children and youth. *Accid Anal Prev*. 2006;38:122-7.
8. Donaldson AE, Cooke LJ, Hutchings CB, et al. Crossing county lines: the impact of crash location and driver's residence on motor vehicle

crash fatality. *Accid Anal Prev*. 2006; 38: 723-727.
9. Ward NJ, Smith L. Shift work and driver fatigue. Proceedings of International Conference on Traffic and Transport Psychology; Berne, Switzerland. Sep, 2000.
10. Gonzales MM, Dickinson LM, DiGuiseppi C, et al. Student drivers: a study of fatal motor vehicle crashes involved 16-year old drivers. *Am Emerg Med*. 2005;45:1450-146.
11. Diener J, Richardson LE. Attitudes toward seat belt use among urban & rural teens. University of Missouri Institute of Public Policy. Report 3-2007: July 2007.
12. Briggs, NC, Lambert EW, Goldzweig IA, et al. Driver and passenger seatbelt use among US high school students. *Am J Prev Med*. 2008; 35 (3):224-229.
13. Rural Transportation Safety and Security Center. Seat belt use: select North Dakota high schools and communities. Issue Brief: August 2009.
14. National Highway Traffic Safety Aministration Traffic Safety Facts – Seat Belt Use in 2010 – Use Rates in the States and Territories. Washington, DC: National Highway Traffic Safety Administration; 2011. DOT HS 811 493.
15. Strine TW, Beck LF, Bolen J, et al. Geographic and sociodemographic variation in self-reported seat belt use in the United States. *Accid Anal Prev*. 2010; 42(4):1066-1071.
16. Bason J. Statewide Use of Occupant Restraints: An Observational Survey of Safety Restraint Use in Georgia. University of Georgia Survey Research Center Office of Research Services. Published 2011.
17. Burkett K, Cotton C, Barlament J, et al. Drive alive: teen seat belt survey program. *West J Emerg Med*. 2002; 11: 279-282.
18. Seat Belt Observational Study. University of Oklahoma Institute for Public Affairs. Available at: http://ok.gov/ohso/documents/2010%20Seat%20Belt%20Final%20Report.pdf. Accessed August 3, 2012.
19. A full report of the NHTSA Demonstration Project data is still forthcoming.
20. Seat Belt Use Demonstration Projects – Rural Initiatives. National Highway Traffic Safety Administration website. Available at: http://www.nhtsa.gov/Driving+Safety/Occupant+Protection/Seat+Belt+Use+Demonstration+Projects+-+Rural+Initiatives#. Accessed November 10, 2011.

Surveillance of Middle and High School Mental Health Risk by Student Self-Report Screener

Bridget V. Dever, PhD*
Randy W. Kamphaus, PhD†
Erin Dowdy, PhD‡
Tara C. Raines, PhD§
Christine DiStefano, PhD‖

* Georgia State University, Department of Education Policy Studies, Atlanta, Georgia
† Georgia State University, Department of Counseling and Psychological Services, Atlanta, Georgia
‡ University of California Santa Barbara, Department of Counseling Clinical and School Psychology, Santa Barbara, California
§ University of Nevada, Department of Educational Psychology and Higher Education, Las Vegas, Nevada
‖ University of South Carolina, Department of Educational Studies, Columbia, South Carolina

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Introduction: A 2009 National Academies of Sciences report on child mental health prevention and treatment concluded that screening for mental health risk is an essential component of service delivery. To date, however, there are few practical assessments available or practices in place that measure individual child risk, or risk aggregated at the school or community level. This study examined the utility of a 30-item paper and pencil student self-report screener of behavioral and emotional risk (BER) for surveying community risk among 7 schools.

Methods: In 2010, 2,222 students in 3 middle and 4 high schools in a medium-sized school district in Georgia were administered the Behavioral and Emotional Screening System Self-Report Child/Adolescent form (BESS Student). The BESS is designed to measure 4 sub-syndromal BER factors for developing mental health disorders: inattention/hyperactivity, internalizing, school problems, and personal adjustment. Analysis of Variance and Chi Square analyses were used to assess the association between adolescent self-reported BER as an indicator of school BER, grade level, child ethnic identification and gender, socioeconomic status, and special education placement status.

Results: BESS scores differentiated well between schools for overall BER and special education status, as well as between grade levels, ethnicity, and gender groups. One high school, known by the school administration to have numerous incidents of student behavior problems, had the most deviant 4 BER domain scores of all 7 schools. Girls rated themselves as having a higher prevalence of BER (14%) than boys (12%); middle school students reported fewer difficulties than high school students.

Conclusion: Middle and high school students were capable of identifying significant differences in their own BER across schools, suggesting that universal mental health risk screening via student self-report is potentially useful for identifying aggregated community risk in a given school that may warrant differential deployment of mental health prevention and intervention strategies. BESS results reliably identified individual mental health risk associated with special education placement, which is documented to lead to poor school outcomes such as school dropout and lack of enrollment in post-secondary education. [West J Emerg Med. 2013;14(4):384–390.]

INTRODUCTION

Child and adolescent mental health disorders are known to be associated with, or increase the risk for, numerous poor school and life outcomes for children and adolescents, including suicidal ideation and attempts, academic underachievement and school dropout, substance use and disorders, and physical fighting or victimization by a weapon.[1-4] A preventive approach to mitigating associated impairment, morbidity, and poor outcomes in school settings has been advised for at least 4 decades.[5] The widespread adoption of preventive models, methods, and procedures for achieving this goal, however, has remained nascent in U.S. schools.[6]

Schools have long been identified as the community context of choice for delivering preventive mental health services. As major societal institutions, schools provide an organizational structure that reaches more children with more continuity than primary care, or any other child and family service setting.[7] Schools, however, are for the most part unprepared to provide preventive mental health services due to limited staff training, a competing focus on and time commitment to educational service delivery, and a lack of assessment methods for delivering services such as universal screening, which is a necessary component of any preventive mental health service delivery program.[8, 5, 9, 3]

Universal screening is the first step in any preventive, secondary prevention, or early intervention program for mental health problems.[9] A National Academies of Sciences report identified 4 levels of prevention including, 1) universal prevention where community risk factors, such as school safety, are of interest, 2) selective prevention where high risk groups, such as children exposed to maternal depression, are identified for services, 3) indicated prevention where screening for behavioral and sub-syndromal symptoms is used to identify children for early intervention services (defined as behavioral or emotional risk (BER), for the purposes of this study), and 4) assessment for detection, diagnosis, and treatment of a mental health disorders.[3] In this report, the goals of universal screening were defined as:

> The goals and design of these initiatives should be targeted to relatively narrow and specific purposes, for example, (1) improving school success for struggling students, (2) preventing bullying and student harassment, (3) improving teacher and peer relationships, (4) increasing school safety and security, or (5) learning to regulate and control behavior. (p. 230)

Although the results of the study could inform all of these goals, the school administrators in the present study requested surveillance screening for risk factors associated with goals 3 and 4, due to their concerns about an overall level of misbehavior in some schools that was adversely affecting teacher and student morale and culminating in incidents of violence in the schools. In one of the high schools in particular, several incidents of student violence on campus caused alarm and growing concerns about the safety of the students and teachers.

A central impediment to the adoption of universal screening measures for school-based screening of large groups of children has been the practicality of such measures, especially the associated personnel costs and test administration time that competes directly with the demand for academic instructional time.[10] Although newer screening measures such as the one used in this study require only a few minutes per child, the practicality of screening thousands of adolescents in numerous schools is yet to be determined.[11,12] However, emerging evidence suggests that some of the barriers to feasibility can be overcome with administrative support and planning prior to implementing a universal screening program.[12]

Behavioral problem surveillance measures, such as the Youth Risk Behavior Survey (YRBS), have been in use for some time.[13,14] This measure assesses student perceptions of the frank expression of behavior problems (e.g. smoking, sexual activity, etc.), rather than risk per se.[4,14] Mental health risk or BER tests represent a relatively newer class of measures that assess a different construct, the predictors of mental health disorders, special education placement, or behavioral problems such as those assessed on the YRBS or its variants, including the California Healthy Kids Survey (CHKS).[15,10] A recent study by Dowdy and colleagues provides empirical evidence of the difference between the YRBS and BER constructs.[4] They found that supplementing the CHKS with a self-report measure of sub-syndromal BER, the same measure used in the current study, significantly increased the prediction of cigarette, marijuana, and alcohol use, binge drinking, physical fighting, threatening or injury by a weapon, skipping school, and serious consideration of suicide as measured by the CHKS.[4]

Based on this evidence, we expected a self-reporter screener to be a useful tool for assessing school-level BER. Thus, the current investigation sought to determine:

1. Whether or not a brief adolescent self-report screener of BER could be used universally in middle and high school with little concern about interference with instructional time or other practical concerns.
2. If the screener would produce score differences between schools that were consistent with school administrator concerns, which predicted that some schools were characterized by more adolescent BER than others.
3. Whether or not demographic variables such as child race/ethnicity, gender, SES, or grade level were strongly associated with screener scores.
4. If individual screener results demonstrated discriminant validity by assessing their association with classification as eligible for special education programs due to the presence of severe behavioral and emotional problems or diagnosed mental health disorders.

METHODS

Sample

Data were collected from 3 middle and 4 high schools in a mid-sized city in the Southeastern United States. The

Table. Descriptive statistics: factor score means and standard deviations for 4 Behavioral and Emotional Screening System factors by school.

School			Hyperactivity	Internalizing	School problems
		Adjustment factor	Factor	Factor	Factor
Middle school 1	Mean	3.3684	1.7209	1.6852	1.7966
	N	147	147	146	147
	Standard deviation	0.50167	0.51180	0.49201	0.55487
Middle school 2	Mean	3.2468	1.6737	1.7022	1.6825
	N	95	95	95	95
	Standard deviation	0.53925	0.47835	0.51825	0.47582
Middle school 3	Mean	3.1277	1.8622	1.8493	1.9603
	N	105	105	105	105
	Standard deviation	0.58581	0.54774	0.53887	0.60221
High school 1	Mean	3.2878	1.8114	1.7980	1.9635
	N	205	205	205	205
	Standard deviation	0.53559	0.52631	0.54994	0.57015
High school 2	Mean	3.3764	1.6854	1.6355	1.9460
	N	368	368	368	368
	Standard deviation	0.47221	0.46557	0.45389	0.51496
High school 3	Mean	3.2300	1.8855	1.7607	1.9912
	N	849	849	848	849
	Standard deviation	0.54561	0.55194	0.49715	0.55366
High school 4	Mean	3.3151	1.8172	1.7385	1.9836
	N	453	453	453	453
	Standard deviation	0.50231	0.54746	0.46482	0.51579
Total	Mean	3.2820	1.8105	1.7356	1.9521
	N	2222	2222	2220	2222
	Standard deviation	0.52681	0.53454	0.49409	0.54514

school district requested universal screening for each of the participating schools because of concerns that student misbehavior was beyond the typical rate. At the time of screening, the school district had been recently cited for substandard student academic achievement. In addition, several incidents of school violence had occurred on the campus of one of the high schools. The sample collected included 2,222 adolescents in the eighth through 12th grades, ranging from 198 in grade 12 to 725 in grade 9. Females constituted 53% of the sample. The ethnic/racial group sample sizes were 1,701 African-American, 456 White, 32 Latino, and 26 Other. Sample sizes by school ranged from 95 to 849 (median = 205). The school district has a high poverty rate, with 76% of students in the present study being eligible for a free or reduced- price lunch. Approximately 6% of the sample, or 139 adolescents, were classified as special education eligible.

Procedure and Instrument

The *Behavioral and Emotional Screening System (BESS) Student Form* was administered to all students in groups, usually in homerooms, by school district employed school psychologists and school psychology doctoral students. Administration amounted to approximately 15 minutes per classroom, including the reading of instructions from a script, completion of forms, and collecting forms from all students. Total administration was less than 1 hour total per middle or high school since all data were collected at the same time interval, in most cases during the homeroom period. The data collection, entry, cleaning, file preparation, and analyses were either conducted or supervised by a post-doctoral fellow supported by the Georgia Measurement and Assessment Training (GMAT) program (funded by grant number R324B080D06 from the Institute of Education Sciences, US

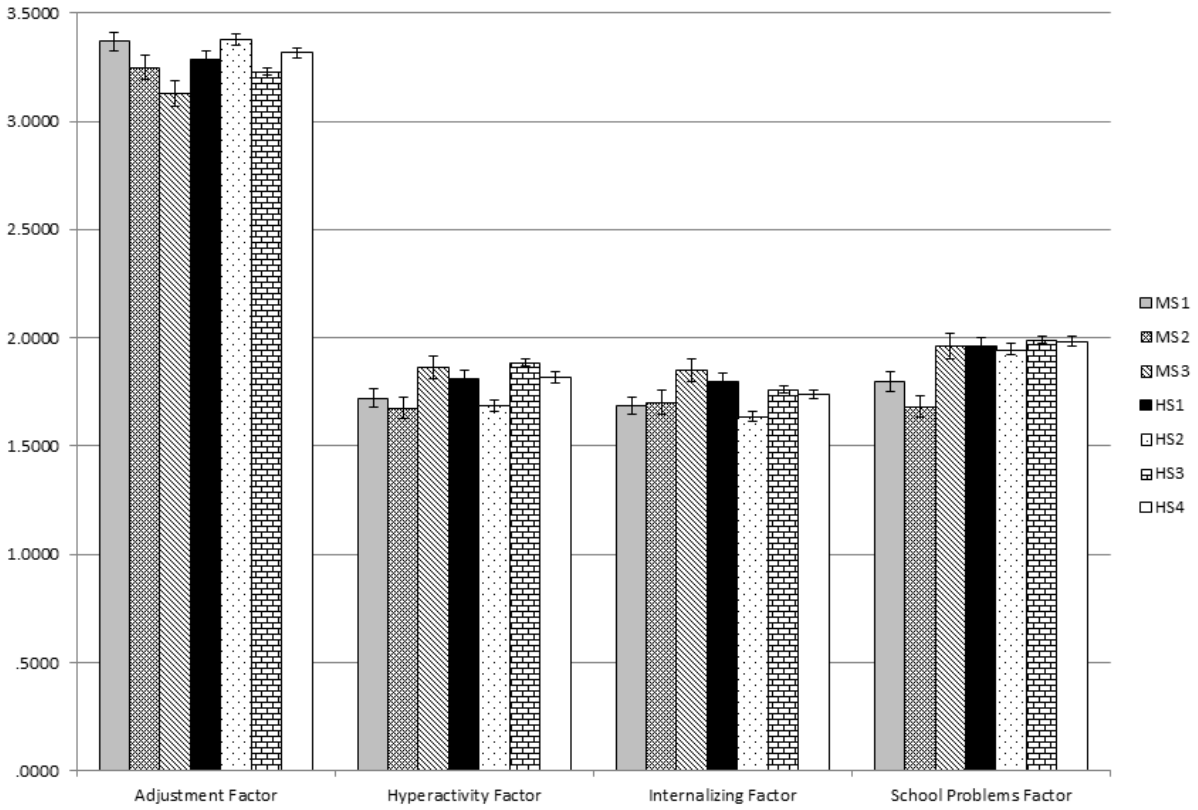

Figure 1. Factor score means for 4 Behavior and Emotional Screening System by school.

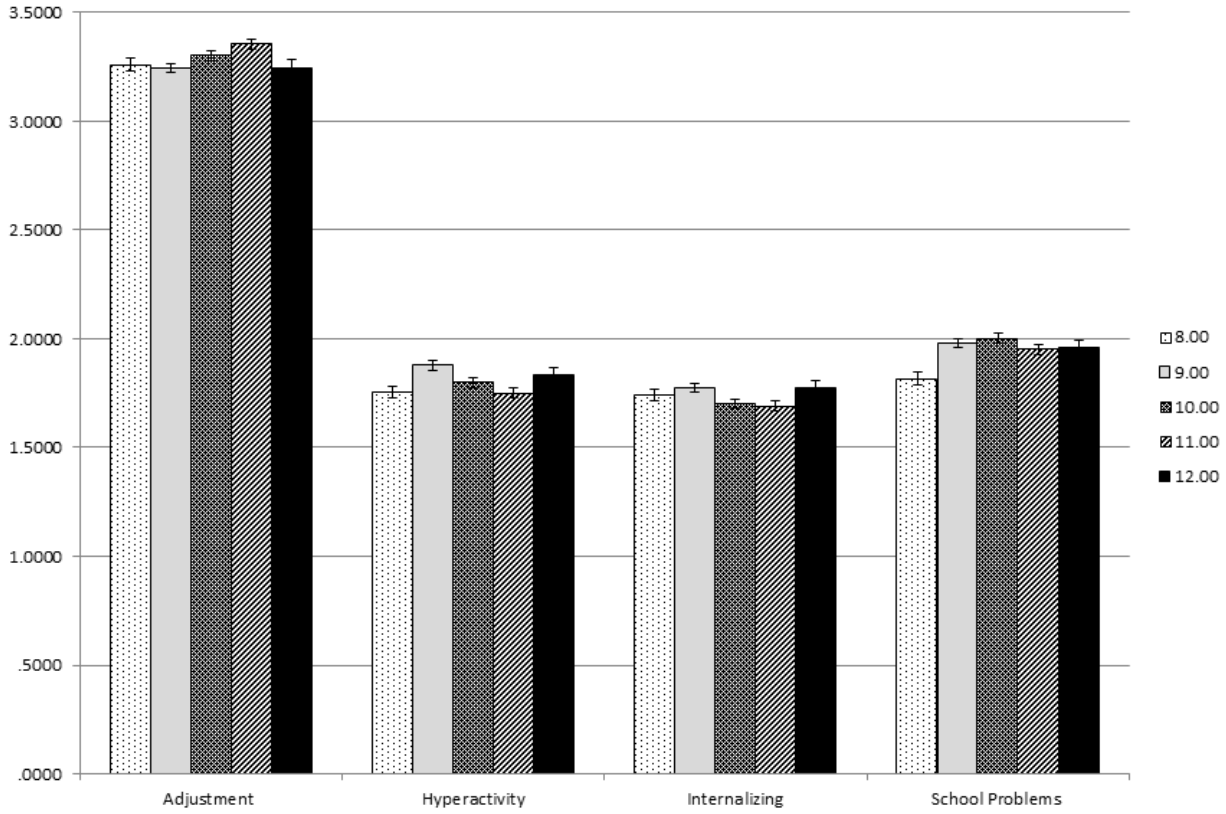

Figure 2. Factor score means and standard deviations for 4 Behavior and Emotional Screening System factors by student grade.

Department of Education). This study was approved by both the local school district institutional review board (IRB) and the IRB of the university of the lead researcher.

The BESS Student is a brief screening measure completed by students to identify BER among youth aged 8 through 18 years.[16] It assesses a wide range of behavioral problems and strengths, including internalizing problems, externalizing problems, school problems, and adaptive skills. The BESS requires no explicit training, has 30 items, and can be completed in 5 minutes or less per student. Use of theory and factor analysis to develop the measure resulted in the inclusion of more internalizing items than other screening measures of this length, and a 4-factor solution, including an assessment of inattention/hyperactivity, internalizing problems, school problems, and personal adjustment.[16,17]

Students are given 4 rating options—never, sometimes, often, or almost always—for each item and the sum of the items generates a total *T*-score with higher scores reflecting a higher level of BER.[16] The scoring rubric or risk level for BER is as follows: (a) a *T*-score of 20-60 suggests a "normal" level of risk; (b) 61-70 suggests an "elevated" level of risk; and (c) 71 or higher suggests an "extremely elevated" level of risk. The risk level classification cut-scores were developed to maximize sensitivity and specificity, and results suggest that sensitivity, specificity, positive predictive value, and negative predictive value were generally high.[16]

Student responses on the BESS may be entered by hand or via scanner with computer software, as was done for this investigation. The software report includes raw scores, *T*-scores, and percentiles based on a normative sample that closely matched U.S. Census population characteristics. The existence of validity scales has been cited as a particular advantage of the BESS by independent reviewers.[9]

BESS split-half reliability estimates range from 0.90 to 0.97. Test-retest reliability estimates are high, ranging from 0.80 to .91. Inter-rater reliability estimates range from 0.71 to 0.83. The concurrent validity of the BESS was examined by administering the items with other social-emotional measures: Achenbach System of Empirically Based Assessment (ASEBA, 0.71–0.77), Conners' Rating Scales (CRS, 0.51–0.78), and Children's Depression Inventory (CDI, 0.51).

RESULTS

As stated in the procedure, the BESS self-report screener of BER was administered universally in 3 middle and 4 high schools with little interference with instructional time. Therefore, there was some evidence to support our first hypothesis that screening could be carried out practically and efficiently in schools.

Descriptive statistics for the sample by school are shown in the Table. In order to test whether the screener would produce score differences between schools that were consistent with school administrator concerns, an Analysis of Variance (ANOVA) comparing schools was conducted. This ANOVA revealed statistically significant differences in the 4 factor scores among the 7 schools with *F* values ranging from 4.73 for the Internalizing factor to 8.20 for the Hyperactivity factor, and all tests being significant beyond $p < 0.001$. These results supported the a priori predictions of the school administrators in that the high school that had experienced increases in school violence (High School #3) and its feeder middle school (Middle School #3) had the highest means on the deviant factors and the lowest means for the Adjustment factor. However, as demonstrated in Figure 1, these statistically significant differences across school by factor were small.

The third question of interest was whether or not demographic variables, such as child race/ethnicity, gender, SES, or grade level, were strongly associated with screener scores The ANOVA by child gender was statistically significant for only the Adjustment ($F = 6.79$, $p < 0.009$) and Internalizing factors ($F = 25.35$, $p < 0.000$), where girls obtained higher scores on each. BESS scores also differed significantly by grade level for all four factors; Adjustment ($F = 3.87$, $p < 0.004$), Inattention/Hyperactivity ($F = 6.23$, $p < 0.001$), Internalizing ($F = 2.82$, $p < 0.24$), and School Problems ($F = 6.99$, $p < 0.000$). Figure 2 plots means for the 4 factors by grade level. These data reveal a trend for self-reported problems to increase in high school over levels reported by eighth graders.

Socioeconomic status produced the most non-significant findings in that free or reduced lunch eligibility status, unlike the other demographic variables, did not produce any statistically significant differences between the BESS factors. BESS results for student ethnicity, by contrast, did differ for the African American and White groups. All four BESS factors differed for these 2 groups ($p < 0.000$) with White students reporting more deviance and fewer positive adjustment skills. The results for the other 2 groups were too small to interpret with confidence.

In relationship to our fourth research question, special education status was linked statistically to only 2 of the BESS factors; Adjustment ($F = 60.10$, $p < 0.001$) and Internalizing ($F = 47.30$, $p < 0.001$). Special education status was not a significant predictor of Inattention/Hyperactivity or School Problems in the present study.

All of these analyses were repeated using BESS classification scheme as the outcome variable. The BESS BER classification system as noted earlier has 3 levels: normal, elevated, and extremely elevated risk. These results were similar to those found using factor scores. For example, no differences were found between BESS factors by SES, more White adolescents were classified as elevated and extremely elevated in risk than African-American adolescents, and girls (13.5%) acknowledged a higher prevalence rate of risk than boys (11.5%). In comparisons where ANOVA results were significant, all Chi Square tests of differences in proportions were also statistically significant.

DISCUSSION

This study suggests that student self-report screening results may provide schools and community stakeholders with systematic data about mental health risk that may be

used to both address and monitor the mental health needs of adolescents in school. These data may also be used, as is the case with the BESS analytic software, to disaggregate BER status for different levels of analysis, and prevention and intervention planning, including the classroom, school, sub-district, and school district levels, and even region and state levels, if desired. Comparisons can then be made across levels of analysis and service delivery to determine where significant BER exists, whether there are Inattention/Hyperactivity, Internalizing, or School Problems, or an absence of strengths as assessed by the Adjustment factor. This "targeting" of systems in need of change or improvement based on data holds the potential to, for the first time, focus prevention and intervention efforts based on evidence.

While a full cost and practicality analysis of this measure and methodology was not undertaken for the purposes of this study, the ability to gather these individual student data from an entire school taking less than 1 hour of instructional time per academic year using a relatively low-cost screening instrument portends greater practicality than has been the case in the past. Brown and Grumet,[1] for example, used clinical interviews to survey suicide risk in 13 middle and high schools in the Washington, D.C. area. They found that 45% of adolescents screened positive for "previous suicide attempt or ideation, symptoms of depression or anxiety, and/or other emotional problems." Their screening program, however, was cumbersome due to the use of clinical interviews, and it produced cost estimates for the program at about $242 per child, an untenable figure for large and small school districts alike. In contrast, universal screening using a quick and affordable instrument such as the BESS does appear to provide a practical solution for gathering self-report BER data universally.[12, 18]

Furthermore, information gathered by the universal screening program implemented in the present study was able to provide score differences between schools that were consistent with school administrator concerns, which predicted that some schools were characterized by more adolescent BER than others. Using data to guide their decisions, school administrators and stakeholders can use the data gathered from a universal screening program to drive school and community interventions based on the areas of need. Although statistically significant, the practical significance of these small differences should be assessed. However, as all of the 7 schools in the present study were selected due to anticipated elevations in BER, generally similar levels of BER across schools was not entirely surprising. The small nuances across schools could help administrators prioritize the types of interventions necessary, and triage schools and individuals in order to best focus the limited resources that are available for such intervention.

Differences in BER were found across demographic variables of interest, including gender, grade, and race/ethnicity. Overall, females reported greater internalizing problems and lower levels of adjustment. High school students, particularly those in the ninth grade, reported lower levels of adjustment and higher levels of BER as compared to eighth grade students. Therefore, transitional difficulties from middle school to high school might help to explain this increase in BER. White students reported more BER than their African American peers. Future studies should continue to examine this finding; White students were the minority group in the schools of interest in the present study, so it could be that out-group status is more predictive of BER than membership in any one particular racial/ethnic group. Finally, those in special education reporter higher levels of internalizing problems and lower levels of adjustment than their peers who were not in special education.

Good surveillance data are prerequisite for initiating public health models of service delivery for children with BER inside or outside of school.[19] The BESS and other newer instruments may be more suitable for providing data due to a variety of factors, including their ability to gather BER data for a wide age range (preschool through high school) and the availability of student, teacher, and parent forms. By contrast, the Youth Behavior Risk Survey and other methodologies fail to include a comprehensive assessment of sub-syndromal psychiatric symptoms or risk factors. The National Survey on Drug Use and Health and National Health and Nutrition Examination Survey are both collected at age 12 and above, and both include only a small sampling of psychiatric questions.

LIMITATIONS

The sample sizes for this study among particular demographic subgroups were sometimes minimal. Although screening was conducted universally, the sampling did not include all children in a school due to student absences and the exclusion of some classrooms due to disability classifications that prevented participation. Sample sizes were not adequate to conduct some important analyses, such as including a Latino sample in the ethnic group comparisons.

Due to time limitations only one screener was used. Although the BESS has supportive reliability and validity evidence, it is relatively new. A clear "gold standard" among such school-based screening measures has yet to emerge based on consensus use; therefore, more research is needed regarding the choice of screening assessment. It is too early for a test or few tests to become the standards of practice since the use of BER screeners, particularly student self-report screeners, is still uncommon in U.S. schools.

CONCLUSION

Use of a student self-report screener to identify mental health or behavioral and emotional risk among adolescents in schools produced results confirming the suspicions of school district administrators; one middle and one high school displayed more risk than others in the district. Although this is not a typical study of discriminant validity for a new measure it is a proxy that served the needs of school district administrators. This study offers some evidence that newer

screeners may allow for greater implementation of mental health risk surveillance consistent with well-established public health practices and needs.

Address for Correspondence: Bridget V. Dever, PhD. Georgia State University, College of Education, PO Box 3977, Atalanta, GA 30302. Email: bdever@gsu.edu.

Conflicts of Interest: By the *West*JEM article submission agreement, all authors are required to disclose all affiliations, funding sources and financial or management relationships that could be perceived as potential sources of bias. Randy W. Kamphaus wishes to disclose a potential conflict of interest in that he receives a portion of royalties on net sales of BESS form.

REFERENCES

1. Brown MM, Grumet JG. School-based suicide prevention with African American youth in an urban setting. *Professional Psychology: Research and Practice,* 2009;40(2):111-117.
2. Bradley R, Doolittle J, Bartolotta R. Building on the data and adding to the discussion: The experiences and outcomes of students with emotional disturbance. *Journal of Behavioral Education,* 2008;17(1):4-23.
3. O'Connell M, Boat T, Warner K. *Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities*. Washington, DC US: National Academies Press. 2009.
4. Dowdy E, Furlong MJ, Sharkey JD. Using Surveillance of Mental Health to Increase Understanding of Youth Involvement in High Risk Behaviors: A Value Added Analysis. *Journal of Emotional and Behavioral Disorders*, 2013;21:33-44.
5. Cowen EL, Dorr D, Clarfield SP, et al. The AML: A quick screening device for early identification of school maladaption. *American Journal of Community Psychology, 1973;1:*12-35.
6. Jamieson KH, Romer D. A call to action on adolescent mental health. In: Evans DL, Foa EB, Gur E, et al., eds. Treating and Preventing Adolescent Mental Health Disorders: What We Know and What We Don't Know. New York: Oxford University Press, 2005:598-615.
7. Doll, E., & Cummings, J. Why population-based services are essential for school mental health, and how to make them happen in school. In Doll B, Cummings J, editors. Transforming school mental health services: Population-based approaches to promoting the competency and wellness of children. Thousand Oaks: Corwin Press; 2008.
8. Fox J, Halpern L, Forsyth J. Mental health checkups for children and adolescents: A means to identify, prevent, and minimize suffering associated with anxiety and mood disorders. *Clinical Psychology: Science and Practice*, 2008;*15*(3):182-211.
9. Levitt JM, Saka N, Romanelli, et al. Early identification of mental health problems in schools: The status of instrumentation. *Journal of School Psychology*. 2007;45:163-191.
10. Dowdy E, Ritchey K, Kamphaus RW. School-based screening: A population-based approach to inform and monitor children's mental health needs School Mental Health 2010;2:166-176.
11. Kamphaus RW, DiStefano C, Dowdy E, et al. Determining the Presence of a Problem: Comparing Two Approaches for Detecting Youth Behavioral Risk. *School Psychology Review, 2010;39:*395-407.
12. Dever BV, Raines TC, Barclay CM. Chasing the Unicorn: Practical Implementation of Universal Screening for Behavioral and Emotional Risk. *School Psychology Forum,* 2012;6:108-118.
13. Centers for Disease Control and Prevention. Youth Risk Behavior Survey (YRBS) Standard 2011 high school questionnaire item rationale. 2010. Available at: http://www.cdc.gov/HealthyYouth/yrbs/questionnaire_rationale.htm.
14. Freeman EJ, Colpe LJ, Strine TW, et al. Public health surveillance for mental health. Preventing Chronic Disease 2010;7(1). Available at: http://www.cdc.gov/ped/issues/2010/jan/2009 0126.htm. Accessed September 20, 2010.
15. California Department of Education. California Healthy Kids Survey. Available at: http://chks.wested.org/. Accessed September 5, 2010.
16. Kamphaus RW, Reynolds CR. Behavior Assessment System for Children - Second Edition (BASC-2): Behavioral and Emotional Screening System (BESS). Bloomington, MN: Pearson, 2007.
17. Dowdy E, Twyford J, Chin J, et al. Factor structure of the BASC–2 Behavioral and Emotional Screening System Student Form. *Psychological Assessment*, 2011;23(2):379-387.
18. Raines TC, Dever BV, Kamphaus, et al. Universal Screening for Behavioral and Emotional Risk: A Promising Method for Reducing Disproportionate Placement in Special Education. *Journal of Negro Education*, 2012;81(3):283-296.
19. Short RJ, Strein W. Behavioral and social epidemiology: Population-based problem identification and monitoring. In: Doll B, Cummings J, editors. Transforming school mental health services: Population-based approaches to promoting the competency and wellness of children. Thousand Oaks: Corwin Press; 2008.

Towards the Development of an Intimate Partner Violence Screening Tool for Gay and Bisexual Men

Rob Stephenson, PhD
Casey D. Hall
Whitney Williams
Kimi Sato, MPH
Catherine Finneran, MPH

Emory University, Rollins School of Public Health, Hubert Department of Global Health, Atlanta, Georgia

Supervising Section Editor: Abigail Hankin, MD, MPH
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Introduction: Recent research suggests that gay and bisexual men experience intimate partner violence (IPV) at rates comparable to heterosexual women. However, current screening tools used to identify persons experiencing IPV were largely created for use with heterosexual women. Given the high prevalence of IPV among gay and bisexual men in the United States, the lack of IPV screening tools that reflect the lived realities of gay and bisexual men is problematic. This paper describes the development of a short-form IPV screening tool intended to be used with gay and bisexual men.

Methods: A novel definition of IPV, informed by formative Focus Group Discussions, was derived from a quantitative survey of approximately 1,100 venue-recruited gay and bisexual men. From this new definition, a draft IPV screening tool was created. After expert review (n=13) and cognitive interviews with gay and bisexual men (n=47), a screening tool of six questions was finalized. A national, online-recruited sample (n=822) was used to compare rates of IPV identified by the novel tool and current standard tools.

Results: The six-item, short-form tool created through the six-stage research process captured a significantly higher prevalence of recent experience of IPV compared to a current and commonly used screening tool (30.7% versus 7.5%, $p<0.05$). The novel short-form tool described additional domains of IPV not currently found in screening tools, including monitoring behaviors, controlling behaviors, and HIV-related IPV. The screener takes less than five minutes to complete and is 6th grade reading level.

Conclusion: Gay and bisexual men experiencing IPV must first be identified before services can reach them. Given emergent literature that demonstrates the high prevalence of IPV among gay and bisexual men and the known adverse health sequela of experiencing IPV, this novel screening tool may allow for the quick identification of men experiencing IPV and the opportunity for referrals for the synergistic management of IPV. Future work should focus on implementing this tool in primary or acute care settings in order to determine its acceptability and its feasibility of use more broadly. [West J Emerg Med. 2013;14(4):391–401.]

INTRODUCTION

Recent studies suggest that gay and bisexual men experience intimate partner violence (IPV) at rates that are substantially higher than those experienced by heterosexual men. Rates of IPV among gay and bisexual men are comparable or higher to those among heterosexual women.[4-6] Although the majority of data on IPV among gay and bisexual men are drawn from cross-sectional samples of United States (U.S.) men, and existing studies vary widely in their definitions of violence, the existing data suggest

that approximately 25-50% of gay and bisexual men report experiencing physical IPV over their lifetimes, and 12-30% report experiencing sexual IPV.[1-6] Fewer studies have measured perpetration of IPV among gay and bisexual, but existing estimates range from 12-36%[7], suggesting the victimization and perpetration often exist synergistically in male-male relationships.

A wealth of evidence has indicated that IPV, experienced and/or perpetrated, is correlated both with acute physical effects (e.g., trauma), sustained physical effects (e.g., substance abuse, sexually transmitted infections), and adverse mental health outcomes (e.g., suicidal ideation, depression, chronic mental illness).[8-10] These associations have been found in diverse settings and populations, and although such evidence is primarily drawn from heterosexual populations, similar associations are beginning to be documented among gay and bisexual men.[11-15] Of particular importance to this population is emergent evidence demonstrating a link between IPV and risk for human immunodeficiency virus (HIV) infection, as men who have sex with men (MSM) worldwide continue to be disproportionately affected by the HIV epidemic.[16-20]

Many national medical organizations, governmental agencies, and advocacy groups have recommended universal or routine IPV screening for women and the clinical value of screening for IPV in emergency departments and ambulatory settings has been endorsed by the American Medical Association.[21,22] The vast majority of tools currently used to screen for IPV were developed for use with heterosexual women; recently there have been calls for further research to develop a valid, brief screening tool to identify male victims of IPV in acute settings.[23] Additionally, there is currently a lack of screening tools that are developed specifically for use with or gay and bisexual men. Recent studies have shown that the lack of availability of appropriate resources, and perceptions that providers do not understand the experiences of gay and bisexual victims of IPV, plays a significant role in same-gender IPV victims' decisions to remain silent about their experiences of IPV.[24]

In this paper we describe the development of an IPV screening tool for gay and bisexual men. There are currently no universal screening tools solely addressing gay and bisexual men, and this study represents a significant response to calls for more inquiry into this area.[25] Previous research has suggested that the type of violence experienced by gay and bisexual men is categorically different from IPV experienced by heterosexuals;[26] hence screening tools are needed that capture IPV as experienced by this high-risk group. The development of a gay- and bisexual-specific IPV screening tool has the potential to improve screening and service provision for a population that currently experiences high level of IPV and is under-served by current IPV prevention efforts, and may add to our understanding of how IPV is uniquely perceived and experienced by gay and bisexual men in the U.S.

STAGE 1: UNDERSTANDING THE DEFINITIONS OF IPV AMONG GAY AND BISEXUAL MEN

Methods

In this stage, we aimed to identify how gay and bisexual men defined IPV, to establish whether IPV was defined differently to the measures commonly used to measure IPV in heterosexual populations. Two sources of data were used: focus group discussions with gay and bisexual men, and a venue-based sample (VBS) of 1100 gay and bisexual men. Both data sources were collected in Atlanta, Georgia. VBS is a derivative of time-space sampling, in which sampling occurs within prescribed blocks of time at previously-identified venues at which hard-to-reach populations congregate with greater frequency than elsewhere.[27] In order to reach a diverse population of gay and bisexual men in the Atlanta area, the venue sampling frame used for this study consisted of a wide variety of over 160 gay-themed or gay-friendly venues, including gay pride events, gay sports teams events, gay fund-raising events, downtown areas, gay bars, bathhouses, an AIDS service organization, and urban parks. Study recruiters stood adjacent to the venue, drew an imaginary line on the ground, and approached every *n*th man who crossed it; *n* varied between one and three depending on the volume of traffic at the venue. Knowledge of expected traffic at each venue was based on our previous experience of recruiting at each venue. If he agreed to be screened, he was then asked a series of eight questions to assess his eligibility. Men were eligible for study participation if they reported being 18 years of age or older, being male, identifying as gay/homosexual or bisexual, living in the Atlanta Metro Area, and having had sex with a man in the previous six months. Eligible men were then read a short script that described the study process. This method was first used to recruit men for focus group discussions.

In total, 7 focus group discussions (FGDs) were held: 3 with Caucasian respondents, and 4 with Black/African-American respondents. FGDs were stratified by race to examine if there were racial differences in the perceptions and definitions of IPV. Each FGD lasted approximately 1 hour, and discussion centered on understanding definitions of IPV. The question guide was based on the short-form CTS questions.[28] Respondents were asked if they would consider each item to be IPV if it were to occur in a male-male relationship. Further questions examined participant's definitions of sexual, physical, and psychological IPV and controlling/stalking behaviors. Discussions were recorded and transcribed, with analysis conducted in MAXQDA. The focus of the analysis was on identifying definitions of IPV, and on examining racial variations in definitions of IPV. As a result, 30 different forms of IPV were identified, which were then used to create the survey questions in order to examine the perceptions of and experience of IPV among the sample of 1000 gay and bisexual men in Atlanta.

Of 4,309 men approached, 2,936 (59.9%) agreed to

be screened for the survey. Of these, 2,093 (71.3%) were eligible for study participation. Men were eligible for study participation if they reported being 18 years of age or older, being male, identifying as gay/homosexual or bisexual, living in the Atlanta Metro Area, and having had sex with a man in the previous six months. Of eligible participants, 1,965 (93.9%) were interested in study participation. A total of 1,074 men completed the survey; thus 21.9% of men approached and 51.4% of eligible men completed the survey. Approximately one-third (33.7%) completed the survey at a venue, while the remaining two-thirds (66.3%) of respondents completed the survey at home. A total of 912 men had complete data for all the IPV questions in the survey and were included in the final analysis. There were no differences in age, race, HIV status or sexual orientation between participants who took the survey and participants with complete information on IPV who comprise the final analysis sample. Additionally, there were no differences in age, race or sexual orientation between men who were eligible for the study and men who chose to participate in the survey.

The self-administered, iPad-based survey contained several domains of questions regarding demographics (e.g., age, education, and race) and recent sexual behavior with male partners. To measure IPV, the survey included 30 items taken from the FGDs: participants were asked if they considered each one of the items to be IPV (yes/no), and if they had experienced it from or perpetrated it against a male partner in the past 12 months. The survey also included the short-form CTS and the binary questions based on the Center for Disease Control and Prevention (CDC) definitions measuring the experience and perpetration of physical and sexual IPV. VBS resulted in a diverse sample: 48% white non-Hispanic, 40% Black/African-American non-Hispanic, and 12% Latino/ Hispanic or other. The mean age was 34.5 (+/- 10.6) years, with the majority reporting at least some college education (51.1%), current employment (78.9%), negative HIV status (69.3%) and homosexual sexual orientation (90%).

Results

While more than 90% of respondents agreed that hitting, punching, kicking, rape, slapping and intentional damage to property were forms of IPV, fewer than 40% of participants reported that preventing the victim from seeing his friends or family, putting the perpetrator's sexual needs before the victim's, asking/telling the victim to act straight around others, criticizing the victim's clothes, or calling the victim fat were considered IPV. Definitions of IPV tended to focus more on physical and extreme forms of sexual IPV, whereas controlling behaviors were less likely to be viewed as IPV. Tests for statistical differences in the proportion reporting of each item as IPV by race were performed. Latino/Other men reported an average of 20 of 30 items as IPV and Black/African-American men on average of 19 of 30, both significantly higher than the mean 17 reported by white men (Latino/Other versus White $p<0.012$, Black/ African American versus White $p<0.003$). There were clear racial variations in the definitions of IPV: Black/African-American participants were significantly less likely than White respondents to report that hitting ($p<0.023$), punching ($p<0.012$), kicking ($p<0.004$), rape (0.045), slapping ($p<0.005$), intentionally transmitting HIV ($p<0.002$) and intentional damage to property ($p<0.001$) were forms of IPV. Conversely, Black/African-American and Latino/ Other men were more likely to report than White men that doing something sexual for which you hadn't given consent (Black/ African American $p<0.023$, Latino/ Other $p<0.019$), preventing someone from seeing their family or friends (Black/ African American $p<0.017$, Latino/ Other $p<0.007$) , refusing to wear a condom during sex (Black/ African American $p<0.005$, Latino/ Other $p<0.034$) , name-calling (Black/ African American $p<0.046$, Latino/ Other $p<0.027$) , and cheating (Black/ African American $p<0.016$, Latino/ Other $p<0.039$) were forms of IPV. Black/African American and Latino/Other men were also more likely to report than White men that controlling behaviors, such as demanding access to a cell phone or email (Black/ African American $p<0.017$, Latino/ Other $p<0.019$), reading text messages or email (Black/ African American $p<0.035$, Latino/ Other $p<0.042$) , and preventing someone from seeing his friends were forms of IPV (Black/ African American $p<0.018$, Latino/ Other $p<0.035$).

STAGE 2: UNDERSTANDING THE DOMAINS OF IPV AMONG GAY AND BISEXUAL MEN

Methods

Rotational factor analysis was conducted with the survey data to identify which of the 30 items were to be included in the *IPV-GBM* scale (Table 1). The factor structure of the *IPV-GBM* scale was determined using principal components analysis with oblique rotation using a promax solution. The factor analysis was conducted for the total sample, and then separately for White and Black/African-American respondents to assess racial variations in scale content. There were insufficient numbers of Latino/Other respondents to allow factor analysis to be performed for this group. Reliability of the scales was assessed by calculating Cronbach's alpha to assess the internal consistency of the items. Adequate reliability was indicated if Cronbach's alpha was >0.70.

Results

The factor analysis yielded 5 unique factors with eigenvalues >1.0: physical and sexual IPV, monitoring behaviors, controlling behaviors, HIV-related IPV, and emotional IPV. The same five factors were identified for each racial group, although the content of the factor varied by race. Five items did not load into any factor: name-calling, refusing to wear a condom during sex, revealing the victim's sexual

Table 1: Factor analysis of definitions of intimate partner violence among gay and bisexual men. Data are from a venue-based self-completed survey with gay and bisexual men, 2011 (N=912).

Items	Factor Loading		
	All men	White men	Black men
Domain 1: Physical & Sexual			
Eigenvalue (Proportion of Variance Explained)	9.6985 (0.3233)	9.21088 (0.3070)	10.20997 (0.3403)
Combined Cronbach Alpha	0.8458	0.8167	0.8987
Slap you	0.8312	0.8044	0.8836
Punch you	0.8272	0.7655	0.8756
Hit you	0.8289	0.7715	0.8769
Kick you	0.8272	0.7655	0.8775
Push you	0.8567	--	0.9021
Force you to do something sexually that you didn't want to do	0.8717	--	0.9035
Rape you	0.8322	0.7883	0.8793
Damage your property (for example, break a TV or cell phone)	0.8458	0.8368	0.8894
Domain 2: Monitoring			
Eigenvalue (Proportion of Variance Explained)	4.16566 (0.1389)	3.80936 (0.1270)	4.04978 (0.1350)
Combined Cronbach Alpha	0.9226	0.9279	0.9148
Demand access to your cell phone	0.9022	0.9031	0.8997
Demand access to your email	0.8983	0.9015	0.8918
Read your text messages without your knowledge	0.8944	0.9013	0.8837
Read your email without your knowledge	0.8928	0.9002	0.8829
Repeatedly post on your social networking pages	0.9345	0.946	0.9186
Domain 3: Controlling			
Eigenvalue (Proportion of Variance Explained)	1.76858 (0.0509)	1.73009 (0.0577)	1.95378 (0.0651)
Combined Cronbach Alpha	0.8860	0.8864	0.8869
Prevent you from seeing your family	0.8531	0.8522	0.8573
Prevent you from seeing his family	0.8606	0.8683	0.8541
Prevent you from seeing your friends	0.8435	0.8384	0.8452
Prevent you from seeing his friends	0.8569	0.8559	0.8618
Domain 4: HIV-related			
Eigenvalue (Proportion of Variance Explained)	1.47115 (0.0490)	1.56658 (0.0522)	1.44745 (0.0482)
Combined Cronbach Alpha	0.8512	0.8476	0.8326
Lie to you about his HIV status	0.716	0.6995	0.7931
Not tell you he had HIV before you had sex	0.7156	0.683	0.7886
Intentionally transmit HIV to you	0.8999	0.9122	0.8000
Cheat on you	--	--	0.8031
Put his sexual needs before yours	--	--	0.8349
Domain 5: Emotional			
Eigenvalue (Proportion of Variance Explained)	1.25644 (0.0419)	1.138720 (0.0462)	1.25642 (0.0419)
Combined Cronbach Alpha	0.7152	0.7607	0.6994
Call you fat	0.6707	0.7207	0.6422
Ask or tell you to "act straight" around certain people	0.5996	0.699	0.5844
Criticize your clothes	0.6031	0.6898	0.5924
Put his sexual needs before yours	--	0.7092	--
Total Chronbach Alpha for All Domains Combined	0.9060	0.8960	0.9147

orientation to others ("outing" him), doing something sexually for which the victim had not given his prior consent, and unintentionally transmitting HIV to the victim. The following five domains of IPV among gay and bisexual men were identified.

Physical and Sexual IPV. This factor was comprised of slapping, punching, hitting, kicking, pushing, coerced sex, rape, and damage to property. However, for Black/African-American respondents, pushing and coerced sex did not load into this factor. The factor explained 32% of total variance for the total sample: 31% for white men and 34% for Black/African-American men.

Monitoring Behaviors: The same items loaded for all groups: demanding access to a cell phone, demanding access to email, reading text messages or email(s) without knowledge, and repeatedly posting on victim's social networking pages (e.g., Facebook, Twitter), explaining approximately 14% of total variance.

Controlling Behaviors: Again, the same items loaded for all groups: preventing a victim from seeing his family or friends, and preventing victim from seeing his partner's family or friends, explaining approximately 5% of the variance.

HIV-related IPV: For the total sample the items loading in this factor were lying about HIV status to a partner, not revealing positive HIV status to a partner before sex, and intentionally transmitting HIV, which collectively explained 5% of the total variance.

Emotional IPV: For the total sample the following items loaded: calling the victim fat, asking/telling the victim to "act straight," and criticizing the victim's clothes, explaining approximately 4% of the variation.

Among the total sample, the most commonly experienced forms of IPV in the past 12 months were criticizing of clothes (emotional IPV), reading text messages without permission (monitoring behavior), and pushing/shoving (physical and sexual IPV). The least commonly experienced forms of IPV were rape (sexual IPV), preventing victim from seeing his family (monitoring behaviors), and intentionally transmitting HIV (HIV-related IPV).

STAGE 3: INITIAL DEVELOPMENT OF THE IPV SCREENING TOOL

Methods

The 5 domains of IPV were then used as the basis for the development of the short IPV screening tool. The first stage involved a comparison with existing IPV screening tools. The comparison focused on content and format (e.g., number of questions/length) of existing tools. Only 2 existing short-form screening tools (HITS model and short-form CTS) are validated for use with men. The HITS model contains 4 questions and the short-form CTS contains 20 questions. Rabin et al,[29] found that of 21 screening tools for IPV, the mean number of items was 4.2. Our aim was to include each of the 5 domains of IPV identified by men in the survey as a separate construct on the screening tool to ensure that the tool was comprehensive in its definition of IPV for gay and bisexual men.

Results

The first draft of the short-form tool consisted of 5 questions addressing the behaviors associated with the 5 unique factors of violence yielded through the factor analysis. The short-form tool questions were based on the 5 domains of IPV, although the short-form tool slightly modified the grouping of IPV factors. Although the factor analysis yielded physical and sexual IPV as one factor, we created separate questions for sexual and physical IPV. To maintain the brevity of the tool as a whole, we combined monitoring and controlling behaviors into one question. We also considered whether to phrase the questions in yes/no or frequency forms. While both the HITS model and short-form CTS use frequency forms, we determined that the detection of any violent experience within a relationship was a more important measurement than the frequency at which it occurred and therefore decided to phrase each question in a yes/no format. For each domain we created a screening construct that comprised multiple questions. For example, for physical IPV the screening construct was: *In the past year, have arguments in your relationship escalated into any of the following: destruction of property, grabbing, restraining, pushing, kicking, slapping, punching, threats of violence or other acts of physical intimidation?*

STAGE 4: EXPERT REVIVEW OF SCREENING-TOOL

Methods

The first draft of our tool was revised through an expert review process.[30-32] We contacted 13 individuals from 8 organizations that work on issues of IPV among gay and bisexual men. Six of the eight organizations are based in the Atlanta area. Experts were asked whether each of the constructs in the tool constituted violence, and were asked to suggest changes to the content and wording of each question.

Results

The main changes suggested by the experts included: the inclusion of physical intimidation as well as actual acts of physical IPV, and the expansion of controlling and monitoring to include financial control and workplace monitoring. The major change was the addition of a sixth question that examined threats of IPV within relationships, and included items measuring whether the respondent felt threatened or isolated within their relationship, or whether others had raised questions about his safety in the relationship.

Table 2: Results of cognitive interviewing of human immunodeficiency virus (HIV) screening tool. Data are from individual interviews conducted with gay and bisexual men at Gay Pride venues, October 2012 (N=48).

HIV screening tool questions	Do you find this question to be understandable? Yes % (N)	Do you consider the examples listed in this question to be violent behaviors? Yes % (N)	Do you find this question insulting or offensive? Yes % (N)	Would you be comfortable answering this question during a medical visit? Yes % (N)
In the past year, has your partner pressured or forced you to do something sexual that you didn't want to do? Examples may include any of the following: oral or anal sex, having sex with others, having sexual partners outside the relationship, or any other sexual activity that made you feel uncomfortable.	93.7 (45)	77.1 (37)	2.1 (1)	97.9 (47)
In the past year, has your partner refused to wear a condom even after condom-use was requested? Have you suspected or confirmed that your partner lied to you about their HIV status, or intentionally tried to transmit HIV to you?	91.7 (44)	87.5 (43)	2.1 (1)	95.8 (46)
In the past year, have arguments in your relationship escalated into any of the following: destruction of property, grabbing, restraining, pushing, kicking, slapping, punching, threats of violence or other acts of physical intimidation?	95.8 (46)	100 (48)	2.1 (1)	95.8 (46)
In the past year, has your partner insulted, criticized, threatened or yelled at you in any way? Examples may include the following: using slurs, calling you names, calling you fat, criticizing your sexual performance, criticizing your clothing, asking you to act more masculine or threatening to out you.	97.9 (47)	87.5 (43)	2.1 (1)	95.8 (46)
In the last year, has your partner prevented you from communicating with or seeing your friends/family/coworkers? Monitored or demanded access to your cell phone, email, social networking sites, finances or spending?	97.9 (47)	72.9 (35)	0.0 (0)	93.8 (45)
In the last year, have you ever felt afraid, threatened, isolated, trapped or like you are walking on eggshells as a result of your relationship? Have your friends or family raised concerns about your safety within your relationship?	95.8 (46)	81.3 (39)	2.1 (1)	93.8 (45)

STAGE 5: COGNITIVE INTERVIEWING WITH GAY AND BISEXUAL MEN

Methods

We aimed to conduct cognitive interviews with 45 local gay and bisexual men recruited at an Atlanta Pride event, with the aim of examining understanding of the 6 questions used in the tool among the target population. A VBS sampling approach was used: men were asked about their gender identity, sexual orientation, age, and race. Men were asked to read the screening tool and provide feedback on the questionnaire's clarity and ease of administration. In total, 48 cognitive interviews were conducted. Although larger sample sizes would clearly be desirable for this process, we argue that given that our screening tool items were generated from focus group data, were then derived from a large random sample of 912 gay and bisexual men, and the product was then subjected to expert review, that a sample of 48 for cognitive interviewing is sufficient to allow us to test the cognition of the tool constructs among our target audience.

Results

Over 90% of participants reported that each item on the screener was easy to understand; although participants reported that the questions around HIV-related IPV were the

Table 3. Intimate partner violence (IPV) screening tool for gay and bisexual men.

Constructs of IPV for gay and bisexual men	Responses	
Q1: Have arguments in your relationship escalated into any of the following: destruction of property, grabbing, restraining, pushing, kicking, slapping, punching, threats of violence or other acts of physical intimidation?	YES	NO
Q2: Has your partner pressured or forced you to do something sexual that you didn't want to do? Examples may include any of the following: oral or anal sex, having sex with others, having sexual partners outside the relationship, or any other sexual activity that made you feel uncomfortable.	YES	NO
Q3: Has your partner pressured you to have sex without a condom after you asked to use a condom? Or do you suspect that your partner has lied to you about their HIV status, or intentionally tried to transmit HIV to you?	YES	NO
Q4: Has your partner insulted, criticized, threatened or yelled at you in any way? Examples may include the following: using slurs, calling you names, calling you fat, criticizing your sexual performance, criticizing your clothing, asking you to act more masculine or threatening to out you	YES	NO
Q5: Has your partner prevented you from communicating with or seeing your friends/family/coworkers? Or monitored or demanded access to your cell phone, email, social networking sites, finances or spending?	YES	NO
Q6: Have you ever felt afraid, threatened, isolated, trapped or like you were walking on eggshells within your relationship? Or have your friends or family raised concerns about your safety within your relationship?	YES	NO

most difficult to understand (92% found it understandable). Common concerns were that the question was too long and complex, and participants offered alternative wording to ease comprehension. While 100% found the question relating to physical aggression to represent violence, only 72.9% found the question relating to monitoring and controlling behaviors to represent violence. Many participants has stated that violence is defined by the use of physical force and the use of pressuring, verbally aggressive, monitoring or controlling behaviors did not constitute violence, but rather constituted abusive behaviors. More than 93% of participants reported that they would be willing and comfortable in answering each of the questions during a medical visit, and 98% reported that they would not be offended by being asked these questions during a medical visit.

Based on feedback from the cognitive interviewing, we revised the question related to HIV-related IPV and the question related to the threat of IPV in the relationship. For the final screening tool, we also reordered the questions so that the question related to physical aggression went first, followed by the question related to sexual violence. The resultant screening tool is shown in Table 3.

STAGE 6: NATIONAL SURVEY OF IPV AMONG GAY AND BISEXUAL MEN

Methods:

In order to examine whether the screening tool would identify the same prevalence of IPV as commonly used measures of IPV, we conducted a survey with an online-recruited sample of gay and bisexual men. Banner ads were placed on Facebook for 12 consecutive days in November 2012. In that time, the ads were shown to 432,632 men and received 6,687 clicks: 1,739 (26%) consented to take the survey and 1436 (83%) began the survey. Of those consenting, 37 (2%) were under 18 years old, 15 (0.08%) reported a gender other than male, 335 (19%) had not had sex with a man in the past 6 months, and 15 (0.08%) lived outside the US. In total, only 1146 (80%) men completed the survey. Given the aim of comparing prevalence of IPV across the 2 measures of IPV, the analysis was restricted to participants who had completed both IPV sections. This produced a sample of 822 (72% of those who completed the survey). There were no differences in age, race, education or sexual orientation between men who completed all sections of the survey and men with missing data for either of the sets of IPV questions.

Ethical approval for the survey was provided by Emory University institution review board. Respondents were shown an electronic consent form, and had to click 'consent to take survey' to proceed to the survey. The survey was hosted by Survey Gizmo, and responses to the survey were restricted to 1 per IP address to prevent multiple submissions from the same computer. Respondents were asked to report both experiencing and perpetrating physical and/or sexual intimate partner violence in the previous 12 months. Standard CDC definitions of IPV were used.[42] For physical violence, respondents were asked if any of their partners attempted to hurt them, including "*pushing, holding you down, hitting you with a fist, kicking, attempting to strangle [you], [and/or] attacking you with a knife, gun, or other weapon.*" Experiences of sexual violence included instances in which

Table 4. Comparison of intimate partner violence (IPV) rates (%) identified using the Center for Disease Control and Prevention (CDC) definition of IPV and the novel, short-form IPV screening tool, including results of significance testing.

	Responses to MSM IPV Screening Tool							Responses to CDC IPV questions		
N= 822	Physical	Sexual	HIV	Emotional	Monitoring & Control	Threat	Answered yes to at least one screening question (Q1-6)	Physical	Sexual	Answered yes to at least one CDC question (Q1-2)
Total (%)	12.4	6.3	3.2	18.4	9.37	14.3	30.7	6.5	2.3	7.5
Age (%)										
18-24	11.6	*9.5**	4.2	18.1	*12.8**	15.0	35.6	6.4	2.4	7.9
25-34	15.3	*4.8**	2.1	21.4	*7.89**	15.3	31.1	6.5	1.7	6.5
35+	10.8	*3.7**	2.9	16.4	*6.34**	12.6	25.7	6.7	2.6	7.8
Ethnicity (%)										
Hispanic/Latino	*22.5**	7.5	*8.7**	23.7	12.5	21.2	38.7	*13.5**	6.2	*16.2**
Non-Hispanic/Latino	*11.2**	6.2	*2.7**	17.9	9.04	13.6	29.8	*5.8**	1.8	*6.6**
Race (%)										
White/Caucasian	*11.4**	6.2	2.9	17.8	9.6	13.9	29.9	6.5	2.2	7.3
Black	*18.4**	7.0	5.2	22.8	7.89	16.6	35.9	7.0	2.6	8.7
Education (%)										
Less than 12 years	15.6	7.8	3.9	19.6	*15.3**	14.3	35.9	*11.1**	1.3	*11.7**
More than 12 years	11.6	5.9	3.1	18.2	*8.07**	14.3	29.6	*5.5**	2.5	*6.5**
Relationship Status (%)										
Partnered	13.9	6.1	*2.0**	18.3	10.7	14.0	31.6	7	2.0	7.6
Single	10.1	6.5	*5.0**	18.8	7.46	14.6	29.5	5.9	2.6	7.4

MSM, men who have sex with men; *HIV,* human immunodeficiency virus

* Figures are significant at the 5% level.

Q1: Have arguments in your relationship escalated into any of the following: destruction of property, grabbing, restraining, pushing, kicking, slapping, punching, threats of violence or other acts of physical intimidation?

Q2: Has your partner pressured or forced you to do something sexual that you didn't want to do? Examples may include any of the following: oral or anal sex, having sex with others, having sexual partners outside the relationship, or any other sexual activity that made you feel uncomfortable

Q3: Has your partner pressured you to have sex without a condom after you asked to use a condom? Or do you suspect that your partner has lied to you about their HIV status, or intentionally tried to transmit HIV to you?

Q4: Has your partner insulted, criticized, threatened or yelled at you in any way? Examples may include the following: using slurs, calling you names, calling you fat, criticizing your sexual performance, criticizing your clothing, asking you to act more masculine or threatening to out you

Q5: Has your partner prevented you from communicating with or seeing your friends/family/coworkers? Or monitored or demanded access to your cell phone, email, social networking sites, finances or spending?

Q6: Have you ever felt afraid, threatened, isolated, trapped or like you were walking on eggshells within your relationship? Or have your friends or family raised concerns about your safety within your relationship?

Q7:In the last 12 months, have any of your partners ever tried to hurt you? This includes pushing, holding you down, hitting you with his fist, kicking, attempting to strangle, attacking with a knife, gun or other weapon.

Q8: Have any of your partners ever used physical force or verbal threats to force you to have sex when you did not want to?

a partner "*used physical force or verbal threats to force you to have sex when you did not want to*." The same criteria were used to measure reporting of perpetration of physical and sexual violence. Participants were also asked to answer all 6 questions on the short-form tool. Statistical tests for the proportion reporting each form of IPV by race/ethnicity, age and education were conducted.

Results

The prevalence of IPV among all respondents using the new IPV screening tool was 30.78%, compared to only 7.5% captured by the standard CDC IPV questions (Table 4). Using the new IPV screening tool, the most common forms of IPV experienced were emotional and physical IPV (18.5% and 12.4%), while the least common were HIV related IPV (3.3%), sexual IPV (6.3%), and monitoring and controlling behaviors (9.4%). In contrast, using the standard CDC IPV questions, 6.6% reported experiencing physical violence while 2.3% reported experiencing sexual violence from a partner.

Using the new IPV screening tool questions, we found statistically significant differences in the experience of physical IPV ($p<0.013$) and HIV-related IPV ($p<0.023$) by race/ethnicity, and a statistically significant difference in the prevalence of sexual IPV by age ($p<0.309$). There was a statistically significant difference in the reporting of monitoring or controlling behaviors by age ($p<0.026$) and education level ($p<0.019$). The reporting of emotional IPV did not vary by any of the demographic characteristics.

DISCUSSION

Integration of IPV screening into routine health services has been recommended and operationalized for many years;[21-22] however, little research has examined the integration of IPV screening into routine health care for gay and bisexual men. Routine screening increases identification of victims of IPV.[33] Training health care providers on the experience of IPV among gay and bisexual men and encouraging routine screening of male clients for IPV may provide an opportunity to reach men who are experiencing IPV, and to provide counseling, referrals and linkage to prevention services.

In this current study, we outlined the initial development of a short-form screening tool to screen for IPV among gay and bisexual men. The screening tool was based on definitions of IPV drawn from a sample of gay and bisexual men, and refined through expert view and cognitive interviewing. Participants largely conceptualized IPV as including physical violence and extreme sexual coercion, items that are included in screening tools used for heterosexual populations. However, the new tool captures areas of IPV not included in other measures that gay and bisexual men reported as constituting IPV. These included HIV-related IPV, monitoring behaviors (such as observing emails/texts) and controlling behaviors (including limiting access to friends or family), suggesting that IPV is conceptualized differently among gay and bisexual men than it is among heterosexual populations.

A significant difference between our new scale and those previously used for heterosexual populations is the addition of more items measuring IPV. Obviously, the addition of more items to a scale it likely to yield a higher prevalence of the overall construct. This was seen when the new screening tool identified a significantly higher prevalence of IPV in a national sample of gay and bisexual men than traditionally used measures of IPV. This may suggest that the inclusion of items in an IPV screening tool that more closely reflects the lived experiences of gay and bisexual men – many of the new items were suggested by participants in FGD in response to the items commonly included on screening tools— may lead to a more accurate, although higher, estimation of the prevalence of IPV. Of course, it is also possible that these additional forms of IPV are also prevalent in heterosexual populations, and the higher prevalence is merely the product of the addition of more items to a scale. However, without a comparable sample from a heterosexual population we are unable to confirm this at this point. The next stage in this line of research is to apply the scale a heterosexual population in a similar environment and compare the overall prevalence of IPV and the prevalence of each domain of IPV between gay and bisexual men versus heterosexuals.

There are a number of limitations to the current study. For the FGDs, the survey sample of 912 gay and bisexual men, and the cognitive interviewing relied on venue-based sampling rather than random sampling. However, there is increasing evidence that this form of sampling produces a sample of similar diversity as is found with random sampling methods[35]. For stage 5, the survey was recruited through banner advertisements on Facebook. This online recruited sample is unlikely to be representative of the general gay and bisexual population of the U.S. For stages 1, 2 and 4 the data are specific to the metro-Atlanta area, and there may be regional differences in how gay and bisexual men experience and conceptualize IPV. For stages 1, 2 and 4 the samples include small numbers of racial/ethnic groups other than White or African American/Black: this limited the ability to draw useful conclusions about IPV in other racial/ ethnic groups.

The current work sets the foundation for several pieces of further research. First, comparable data from a heterosexual sample is needed to assess the extent to which these new IPV scale items are gay and bisexual specific. The results presented here should be viewed as the first stages in the creation of an IPV screening tool for gay and bisexual men. The results have highlighted how gay and bisexual men conceptualize IPV, have illustrated several racial variations in the definition of IPV, and have condensed the definition of IPV into 6 scale items that gay and bisexual men largely agreed constituted IPV and would appropriate in a clinical/medical setting. However, further sensitivity and specificity analysis are needed utilizing a larger sample of gay and bisexual men

to examine the extent to which the new scale captures the experience of IPV.

CONCLUSION

The results presented here provide encouraging evidence for a new, more accurate, tool for screening for IPV among gay and bisexual men in the U.S. The tool is intended for use by health care providers, as is standard practice with the tools currently used to screen heterosexual women for IPV. The tool consists of 6 short questions which, during our cognitive interviewing process, men reported willingness to answer during a medical visit. The screening tool requires a 6th grade reading level and takes less than 10 minutes to administer; similar characteristics to many existing IPV screening tools. Given the increased attention to IPV among gay and bisexual men, a screening tool based on more accurate measures of IPV that are grounded in the lived realities of gay and bisexual men is vital. Further work is now required to test this screening tool on larger samples of gay and bisexual men, and to explore the extent to which the screening tool is applicable to other racial/ethnic groups and is acceptable to both health care providers and clients.

Address for Correspondence: Rob Stephenson, PhD. Hubert Department of Global Health, Rollins School of Public Health, Emory University, Atlanta, GA, Email: rbsteph@sph.emory.edu.

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REFERENCES

1. Tjaden P, Thoennes N, Allison CJ. Comparing violence over the life span in samples of same-sex and opposite-sex cohabitants. *Violence and Victims*. 1999;14(4):413-425.
2. Blosnich JR, Bossarte RM. Comparisons of Intimate Partner Violence Among Partners in Same-Sex and Opposite-Sex Relationships in the United States. *American journal of public health*. 2009;99(12):2182.
3. Messinger AM. Invisible Victims: Same-Sex IPV in the National Violence Against Women Survey. *Journal of Interpersonal Violence*. 2011;26(11):2228.
4. Nieves-Rosa, L.E., A. Carballo-Dieguez, and C. Dolezal. Domestic abuse and HIV-risk behavior in Latin American men who have sex with men in New York City. *Journal of Gay & Lesbian Social Services*. 2000; 11(1): 77-90.
5. Balsam, K.F., K. Lehavot, and B. Beadnell. Sexual Revictimization and Mental Health: A Comparison of Lesbians, Gay Men, and Heterosexual Women. *Journal of Interpersonal Violence*. 2011; 26(9):1798.
6. Pantalone DW, Schneider KL, Valentine SE, Simoni JM. Investigating Partner Abuse Among HIV-Positive Men Who have Sex with Men. *AIDS and Behavior*. 2011;1-13.
7. Wong, C.F., et al. Harassment, Discrimination, Violence and Illicit Drug Use among Young Men Who Have Sex with Men. *AIDS education and prevention: official publication of the International Society for AIDS Education*. 2010; 22(4):286.
8. Coker, A.L., et al. Physical and mental health effects of intimate partner violence for men and women. *American journal of preventive medicine*. 2002; 23(4):260-268.
9. Campbell, J.C. Health consequences of intimate partner violence. *The Lancet*. 2002; 359(9314):1331-1336.
10. Dunkle, K.L., et al. Perpetration of partner violence and HIV risk behaviour among young men in the rural Eastern Cape, South Africa. *AIDS*. 2006; 20(16):2107.
11. Greenwood, G.L., et al. Battering victimization among a probability-based sample of men who have sex with men. *American journal of public health*. 2002; 92(12): 1964.
12. Koblin, B.A., et al.Violence and HIV-related risk among young men who have sex with men. *AIDS care*. 2006; 18(8):961-967.
13. Feldman, M.B., et al. Intimate partner violence and HIV sexual risk behavior among Latino gay and bisexual men. *Journal of LGBT health research*. 2007; 3(2): 9.
14. Stall, R., et al. Association of co-occurring psychosocial health problems and increased vulnerability to HIV/AIDS among urban men who have sex with men. *American journal of public health*. 2003; 93(6): 939.
15. Stephenson, R., et al. Dyadic Characteristics and Intimate Partner Violence among Men Who Have Sex with Men. *Western Journal of Emergency Medicine*. 2011;12(3): 324.
16. Braitstein, P., et al. Sexual violence among two populations of men at high risk of HIV infection. *AIDS care*. 2006;18(7): 681-689.
17. Houston, E. and McKirnan, D.J. Intimate partner abuse among gay and bisexual men: Risk correlates and health outcomes. *Journal of Urban Health*. 2007; 84(5): 681-690.
18. Relf, M.V., et al. Gay identity, interpersonal violence, and HIV risk behaviors: An empirical test of theoretical relationships among a probability-based sample of urban men who have sex with men. *Journal of the Association of Nurses in AIDS Care*. 2004. 15(2):14-26.
19. Welles, S.L., et al. *Intimate Partner Violence Among Men Having Sex with Men, Women, or Both: Early-Life Sexual and Physical Abuse as Antecedents. Journal of Community Health*. 2010;1-9.
20. van Griensven, F., et al. The global epidemic of HIV infection among men who have sex with men. *Current Opinion in HIV and AIDS*. 2009. 4(4): 300.
21. Datner EM, O'Malley M, Schears RM, Shofer FS, Baren J, Hollander JE. Universal screening for interpersonal violence: inability to prove universal screening improves provision of services. *Eur J*

Emerg Med. 2004; 1135-38.

22. American Medical Association. Diagnosis and treatment guidelines on domestic violence. *American Medical Association*. 1992.
23. Shakil A, Donald S, Sinacore JM, Krepcho M. Validation of the HITS domestic violence screening tool with males. *Family Medicine*. 2005; 37(3): 193-8.
24. Merrill G, Wolfe V. Battered gay men: an exploration of abuse, help seeking and why they stay. *Journal of Homosexuality.* 2000; 39(2): 1-30.
25. Randle AA, Graham CA. A review of the evidence on the effects of intimate partner violence on men. *Psychology of Men & Psychology*. 2011; 12(2): 97-1109.
26. Carvalho AF, Lewis RJ, Derlega VJ, Winstead BA, Viggiana C. Internalized sexual minority stressors and same-sex intimate partner violence. *Journal of Family Violence.* 2011.
27. Muhib FB, Lin LS, Stueve A, Miller RL, Ford WL, Johnson WD, et al. A venue-based method for sampling hard-to-reach populations. *Public Health Reports*. 2001;116:216.
28. Straus MA, Douglas EM. A short form of the Revised Conflict Tactics Scales, and typologies for severity and mutuality. *Violence and victims*. 2004;19(5):507-520.
29. Rabin RF, Jennings JM, Campbell JC, Megan BH. Intimate Partner Violence Screening Tools: A Systematic Review. *American Journal of Preventive Medicine*. 2009; 36 (5):439.
30. Wang K, and Palmer MH. Development and validation of an instrument to assess women's toileting behavior related to urinary elimination. *Nursing Research.* 2011. 60(3):158-64.
31. Mathy C, Broonen JP, Henrotin Y, Marty M, Legout V, Genevay S, Duplan B, Bazin T, Laroche F, Savarieau B, Cedraschi C. Development and validation of a questionnaire assessing volitional competencies to enhance the performance of physical activities in chronic low back pain patients. *BMC Musculoskeletal Disorders*. 2011; 12:111.
32. Walsh CA, MacMillan HL, Trocme N, Jamieson E, Boyle MH. Measurement of victimization in adolescence: Development and validation of the Childhood Experiences of Violence Questionnaire. *Child Abuse & Neglect*. 2008; 32: 1037-1057.
33. Spangaro, J., Zwi, A.B., & Poulos, R. (2009). The elusive search for definitive evidence on routine screening for intimate partner violence. Trauma Violence & Abuse, 10(1), 55-68.

Child Maltreatment and Disaster Prevention: Qualitative Study of Community Agency Perspectives

Shannon Self-Brown, PhD* * Georgia State University, School of Public Health, Atlanta, Georgia
Page Anderson, PhD† † Georgia State University, Department of Psychology, Atlanta, Georgia
Shannan Edwards, MS†
Tia McGill, MPH*

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Introduction: Child maltreatment (CM) is a significant public health problem that increases following natural disasters. Ecological approaches have been used to study these complex phenomena, and the current research fits within this perspective by conducting qualitative interviews with disaster response and family-serving community agencies. The purpose of the study was to identify whether or not community agencies identified CM as an issue that is relevant for disaster planning and response and their perspectives on risk and protective factors for CM risk following disaster.

Methods: Agencies (n=16) from 2 geographical areas participated - one that recently experienced a natural disaster (Louisiana (LA), n=7) and one that had not (Georgia (GA), n=9). Agency representatives completed semi-structured telephone interviews (n=16) and follow up in person focus groups (n=14). Theory-driven, thematic analyses were completed.

Results: Results suggested that community agencies agree that post-disaster environments increase the risk for CM and that CM prevention has a role in disaster response planning. Risk and protective factors were identified according to Bronfenbrenner' s ecological framework.

Conclusion: Study results support the need to include CM prevention efforts within disaster planning and provide guidance for future research to inform such efforts. [West J Emerg Med. 2013;14(4):402–408]

INTRODUCTION

General population studies indicate that a significant proportion of people in the United States experience natural disasters.[1] Children are a vulnerable population requiring special consideration during and following disaster.[2]A recent nationally representative study of U.S. youth indicated that 13.9% reported lifetime natural disaster exposure, with 4.1% reporting exposure in the past year.[1] Comprehensive disaster response planning for children addresses the basic needs of nutrition, shelter, sanitation, and clothing, as well as mental health consequences related to disaster exposure. [2-4] Absent, however, is disaster planning and prevention related to disaster-related secondary intentional injury risk, such as child maltreatment (CM).

Data suggest that CM incidence rates can increase following natural disaster. Specifically, Keenan et al[5] found that rates of intentional child traumatic brain injury increased in the 6 months post Hurricane Floyd. Similarly, Curtis et al.[6] found that following 2 of 3 disasters studied, the incidence and confirmation of child abuse reports was higher 3 and 6 months following disaster. Children who experience maltreatment or abuse are at great risk for deleterious behavioral, academic, psychological and health problems.[7-10] Given the increase in CM following disaster, and the pervasive impact of CM, research on disaster response and CM prevention efforts is warranted. This area of research is especially relevant for medical professionals working in emergency medicine, as children are often seen in medical settings post-disaster and, thus, these professionals could serve as important contributors to disaster planning and coordinated response efforts targeting CM prevention.[11]

Bronfenbrenner's ecological systems framework,[12] which emphasizes a broad contextual approach to human development and risk and resilience to stress, has been applied to both post-disaster risk[13] and child maltreatment risk.[14] This framework describes multiple contexts that make up a child's ecological system, which vary in their proximity to the child and include the macrosystem (cultural values and beliefs), the exosystem (processes that take place between multiple contexts, one of which does not directly involve the child but has implications for child development), the mesosystem (linkages between proximal ecologies within which the child develops), and the ontogenic level (factors within the individual that impact developmental adaptation).[14] Factors within different ecologies can increase the risk for CM post-disaster. For example, disaster might directly impact family microsystem factors that have been associated with CM, such as parental stress, mental health and substance abuse[15], or parenting behaviors.[16] Disasters also have the potential to disrupt higher order ecologies, by decreasing the availability of important community resources that provide CM prevention and disaster response services. No research exists on this topic to date.

Purpose of Current Study

To date, there has been a paucity of research examining whether disaster planning should include CM prevention/ intervention, policy, and resources. The purpose of this exploratory study is to further explore the association between CM and disaster by soliciting the opinions of representatives of community agencies who have been involved in disaster prevention, or providing services to children and families. Participating organizations were located in the capital cities of 2 states--one with extensive experience with natural disaster in recent years (Baton Rouge, Louisiana), and one with relatively less experience (Atlanta, GA). Several exploratory research questions were addressed that impact various ecological contexts: Do community agencies perceive a relationship between CM and disaster? What have participants relevant experiences related to CM in post-disaster environments? Should CM be addressed in disaster planning? Are there recommendations for programming and policy related to CM in disaster planning and post-disaster environments? Who are the most important professionals to include in disaster planning and response to assist with targeting CM efforts?

METHODS

Participants

The current study, funded by a collaborative grant from the Centers for Disease Control and Prevention and Georgia State University, included 16 representatives of stakeholder agencies in Louisiana and Georgia. To identify relevant organizations, members of the research team contacted experts in child welfare in each state and conducted internet searches. In each state, attempts were made to recruit representatives from pediatric medicine, child and adult mental health, child protection, CM prevention, disaster planning, and schools. A research team member attempted to recruit each agency of interest via an email or a voice message that explained the purpose of the study. In total, 27 agencies were contacted about study participation. Specifically, 11 contact attempts were made to agencies in Louisiana, and contact was successful with 7 agency representatives, all of whom consented (3 female, 4 males). Organization representatives were located in Baton Rouge or New Orleans and worked in pediatric medicine, child and adult mental health, child protection, and CM prevention. In Georgia, 16 agency contact attempts were made, 9 of which were successful. All 9 representatives who were successfully contacted consented (6 females, 3 males). Representatives were from agencies in metro-Atlanta that focused on education, disaster response and preparedness, child and adolescent mental health, CM prevention, and pediatric medicine. All agency representatives held Director or Co-director leadership positions. Further information describing the agencies is excluded to protect confidentiality.

Study Measures

A semi-structured interview, consisting of 22-27 questions, served as the primary mode of data collection for this study. The research team developed an initial draft of the interview and vetted it with 2 experts in CM and disaster research for review. Following review, the research team incorporated recommendations and finalized the measure, which included semi-structured and open-ended questions. Question topics included: Agency mission and focus of work, Agency roles related to CM and disaster planning, Experiences related to the connection between disaster and maltreatment, Opinions regarding the need to address CM in disaster planning, Opinions on the types of professionals who should be involved in the planning and response efforts, and recommendations for improving the current programming and policy related to CM during a disaster and within the post-disaster environment.

Procedures

We conducted research over a 2-year period. Procedures were conducted separately and sequentially for the 2 study sites; with Louisiana agencies participating in Year 1 and Georgia agencies in Year 2. Research team members contacted agencies of interest by phone or email to explain the purpose of the study. Interested respondents (those who replied or responded to recruitment email on phone call) were informed about the purposes and procedures of the project, and asked to consent to the study, which was approved by the Georgia State University Institutional Review Board.

All agency representatives (n=16) who responded to initial recruitment agreed to participate in this study were asked to complete a 1-hour telephone interview. Following the interview, participants were invited to an in-person

group meeting that included all participating agencies within that particular state (e.g., separate meetings for agencies in Louisiana and Georgia).

Telephone Interview. Following consent, a telephone interview was scheduled. Study participants were sent a hard copy of the interview questions prior to the interview. Interviews were conducted by one of the 4 research team members. All participants gave permission for the telephone interview to be audio recorded. The interview continued until responses were collected for all the interview questions, usually about an hour. All interviews were transcribed and reviewed by each participant for accuracy.

Follow-Up Group Meeting. Group meetings were held to bring the stakeholder agencies within each state together to review the interview data collected, provide feedback about conclusions drawn by the investigative team, and to discuss collectively whether there were additional recommendations for CM efforts in the aftermath of disaster. These meetings were held in centralized locations for participating agencies and were led by the 2 principal investigators. All participants agreed to participate in the groups; however, on the day of the scheduled group, one organization representative in each state cancelled, leaving 6 participants in Louisiana and 8 in Georgia. All group-meeting attendees were reimbursed $100 for the 3 hours of time devoted to participation in the project (1 hour for interview, 2 hours for group meeting).

Interview Design and Data Analysis

We used a theory driven approach to analyze semi-structured interviews. First, audio-recorded interviews were transcribed.[17] Second, the PIs and two graduate research assistants read the raw data independently and generated codes from theory that were used to identify themes within and across participants. Specifically, each member of the research team extracted responses that represented different levels of the ecological model theory [12] which was selected as the classification system for these data based on the work of Weems and Overstreet.[13] Each ecological context was operationalized as follows: 1) Macrosystem- participant responses reflect cultural values and beliefs at the policy level that impact children; 2) Exosystem- responses that reflect a relationship between 2 or more contexts, and includes 1 context that does not directly involves the child, but impacts child development; 3) Mesosystem- responses that reflects linkages between proximal child/family contexts; 4) Microsystem- responses that directly represent contexts in which the child develops. Because of the nature of the study participants, interview and focus group questions did not include ontogenic level content, and this context was not operationalized for the study. Third, the 2 PIs developed lists of codes, which were then matched and integrated into a single codebook. When coding discrepancies arose, they were resolved through discussion and enhanced definition of codes. For codes that could not achieve consistency of agreement, the codes were dropped.[17] The final list of codes, constructed through a consensus of team members, consisted of a numbered list of themes that related to CM prevention in the aftermath of disaster. Excerpts from participants' interviews have been selected to illustrate identified themes. Finally, the interview themes identified by the researchers were presented to participants in Louisiana and Georgia, during the group meeting for discussion and feedback. We coded feedback and included it in the final themes presented in the results section.

RESULTS

Overall, participants agreed that disaster exacerbates risk factors for CM. For instance, a Louisiana (LA) participant indicated that following Hurricane Katrina, "People don't have the resources they did before…Just knowing the stressors that cause abuse and neglect, there was a natural thought that it would go up much higher than normal." No participants had implemented or knew of any agencies that had implemented CM prevention programming as part of disaster response, and all agency representatives agreed that it could and should be incorporated.

Themes identified according to ecological context are presented below. Illustrative quotes identified by state only to protect confidentiality.

Macrosystem Factors

*Culture of Disaster Response: Short-term versus a long-term view***.** GA and LA participants consistently reported that the culture of disaster response is to serve the immediate, basic needs of impacted individuals. As one LA participant indicated, "The focus is really on the crisis intervention and the immediacy of needing housing and financial assistance and not much care to the larger picture of the trauma, the psychological trauma and familial trauma that is taking place." Similarly, a GA participant stated, "The mental health needs [and protection] of children is really secondary to finding shelter and food." Participants emphasized both a short- and long-term view for disaster recovery: "Years later [post-Katrina], most of the money is gone, and yet…our mental health needs in our population have skyrocketed. [There is] more acting [out], more substance abuse, dual diagnosis, more mental health than we've ever had in our kids before, that needs to be addressed (LA participant)."

The impact of policy (or lack thereof) in the every phase of disaster planning. Participants from both states stressed that for CM to be addressed, policy decisions would need to be put in place for all phases of disaster planning (preparedness, response, and recovery). One GA participant noted the importance of involvement by community and state family-focused agencies in the preparedness phase of disaster planning. "First and foremost would be communication, to

somehow help communities plan ahead and not just react to the disaster, but think carefully about building protective factors and preventive things…both long term and short term." Related to response and recovery, participants discussed the importance of establishing the appropriate funding streams for handling CM. Participants noted that there is increased attention to providing funding for substance abuse/mental health issues post-disaster, and that it could be beneficial to include CM prevention as part of this funding mechanism.

Exosystem Factors.

Connecting Displaced Families to New Communities. In both states, participants shared stories about families displaced by disaster who struggled with getting connected to community resources. One LA participant suggested, "When families are displaced, they have limited knowledge of available community resources and have lost records. It would be nice to have a preplanned central location for families to report to learn about available financial, job, housing, and health information." This could be a requirement for disaster preparedness committees in every community to help reduce the stress of relocated families.

Community Support for Parents. Participants agreed that providing support to parents is essential to reduce the CM risk post-disaster. Participants suggested that states or communities could identify a coalition of prescreened child professional volunteers who would be ready to offer family and child services after disaster, or opportunities for subsidized child care post disaster. A GA participant stated "… there is a huge resource that we don't provide that we could do a better job of, and that's subsidized child care... after a community-wide trauma one of the things that would help the community to heal would be to automatically be able to help parents taking care of their kids so they can their lives back together."

Help for the Helpers. In disaster aftermath, many service professionals are dealing with their own personal loss and disaster-related stressors, which reduces their capacity to help others: "We had some staff in trailer parks…staff wasn't eligible for congressional relief, which was frustrating because we could help your case load, but we couldn't help you (LA)." Additionally, many helpers are displaced to other communities or are reassigned as a part of disaster plans. One LA participant reported that of the "staff of 1,800 employees in Office of Child Services, 900 of them went to shelter duty, 600 evacuated, so that left 300 to do the daily work of the agency for almost 3 solid months after Katrina. So the impact on us as the caregiver was huge." Participants emphasized the need for plans and policy that would allow for creative ways to enhance qualified providers to serve families, especially during the initial response phase in which disaster affected providers are in need, to help implement the necessary interventions for the most vulnerable children and families.

Mesosystem

*Existing Community Agency Relationships make a Difference***.** Participants across both states discussed the importance of preexisting relationships among child and family serving agencies. One LA participant stated, "One of the reasons that we did have the successes that we did is because of the trust and collaborative networks that were in place before [Katrina]." Another LA participant reported how much agencies relied on one another, post disaster: "[for] 6 months or so after the hurricane, we met several times per week… individuals and teams…were invited to discuss issues that were going on in the community and how we could provide assistance. So we had everyone from representatives of the schools, mayor's office, state capital, department of public health, hospital administrators to private practitioners, attending these debriefings."

Rethinking Agency Roles and Finding Creative Ways to Work Together Post-Disaster. Participants across both states recognized the need for family-serving agencies to be very flexible and adaptable in the response and recovery period post-disaster. Participants from LA reported that funding was provided for mobile, multi-disciplinary medical and mental health care to Katrina impacted families. One participant described, "In immediate aftermath, there must be options for mobile care. Transportation is a huge issue and so services must switch gears to outreach. Mobile medical care should receive outside funding so that they can offer services to anyone and are not reliant on insurance reimbursement."

Participants discussed the importance of including trusted agencies in disaster response, including schools and faith-based agencies "…the school system typically is one that is viewed as a partner with families, one that is seen as a positive resource (GA)." and "…people will trust their spiritual leaders…I would think that would be a good mechanism for getting out to people, to say you know it's so normal and so natural after something of this magnitude for depression and acting out behavior…I think faith based is a great idea because they do so much for people in a concrete basis and are the natural place for people to go (GA)." The group highlighted the need for planning for such approaches during the preparedness phase and establishing policy, such that each organization would have an organized plan for implementation in disaster circumstances.

Microsystem

*Strain on Parent-child relationships***.** Participants noted the many challenges parents may face post-disaster. One LA participant stated that, "caregivers are like a rubber band that is stretched just about as far as it can go…adults literally don't have time to have it in them to provide what the children need 'cause they're in such a bad place…." Participants also reported that parents may often not have the time to spend engaging in positive interactions with their children and that

negative interactions may increase. As one LA participant stated, "People [are] so frenetic or busy that they don't have time [to deal with their children]… People are too much in survival mode to be worrying about keeping kids in line [using positive discipline methods], and this results in a reliance on excessive discipline." Similarly, such "survival mode" could also place parents at risk for emotional and physical neglect.

Participants also discussed that child mental health symptoms may go unrecognized by parents and lead to increased risk of maltreatment. As an LA participant stated, "[when child problem] behavior is starting to show up 3 to 6 months after the traumatic event, parents or others tend to think it's related to something else, so it's misdiagnosed." Similarly, a GA participant stated, "parents [post-disaster are] trying to survive and the mental health needs of their children is secondary to finding shelter and food…[when] the housing issues had been settled, and the daily substance issue had been settled, then the mental health issues started to manifest themselves." Participants stressed that psychoeducation about common parental responses to trauma and how to be good assessors of their children's well-being is essential.

Child Supervision and Safety. Participants noted their concern for children who reside post-disaster in shelters, non-familial support systems, or homes with multiple adults. They reported that parents are often so preoccupied that they many not consider how such environments may increase risk for their children. One LA participant disclosed "I used to work [in a] juvenile correction facility and there was a little kid in there – he was only like 13 – and he was in there for shaken baby. He had been left to babysit a whole gaggle of kids with no understanding of how to care for them." Participants indicated that disaster preparedness at the family level should include planning for childcare and supervision in circumstances where a primary caretaker would be unavailable to parent (temporarily or permanently) due to the disaster.

Increases in Overall Family Risk Related to CM Perpetration. Participants noted that several individual-level risk factors for maltreatment increased post-disaster. Specifically, participants noted that there were significant increases in adult mental health problems, divorce, parent incarceration, and parent substance abuse following disaster. Participants also noted how these types of issues tend to occur more often in the recovery phase versus the response phase, again highlighting the importance of those involved in disaster planning to view recovery as long-term term. For example, one LA participant stated, '[from]1- 6 months[post-disaster, parents are focused on] trinity of recovery: house, job, school…Six-nine months post is when you begin to see increases in divorce from all stress, and alcoholism…"

DISCUSSION

Prior research identifies a link between post-disaster environments and increased rates of CM. [1,5-6] For over a decade, there has been a call for improving and expanding what is considered appropriate disaster response planning.[18] There has been very little attention to whether or how such planning should include CM prevention, intervention, policy, and potential intervention resources. The purpose of this exploratory study was to identify community agency perspectives on risk and protective factors for CM at various levels of the ecological system in post-disaster environments, so to inform disaster-planning efforts and directions for future research. This issue is especially relevant to medical professionals because they are first-line responders to disaster, as well as intricately involved in the post-disaster recovery of communities, and, thus, are in a unique position to advocate for protecting children from intentional injury post-disaster.

Qualitative data collected in this study indicated themes at various levels of the ecological framework. At the macro-level, study participants had strong reactions regarding the current culture of disaster response policy and programming, which, as identified in work by Smith and Wenger,[19] emphasizes the management of short-term federal assistance rather than a systematic identification of community needs and the development of a comprehensive strategy for long-term recovery. Recent work has shown the long-term mental health impacts of Hurricane Katrina, with one study indicating that nearly 30% of participants continue to report disaster related psychological distress 3.5 and 4.5 years post- hurricane.[20] These compelling data have led to recommendations for policy change in post-disaster mental health response.[21] Current findings should serve as an impetus for the funding of more comprehensive, longitudinal research examining CM outcomes post-disaster, to help quantify whether similar initiatives and efforts are needed to target CM in such circumstances.

At the exosystem level, participants discussed how challenges that emerge at the community level can ultimately impact or disrupt contexts that directly involve the child. First, participants had strong opinions about how communities could be prepared for working with displaced families if such a need were to arise. Specifically, it was suggested that communities maintain up-to-date community resource guides as part of disaster planning to assist displaced families. Community support for parents was also strongly recommended. Innovative ideas for volunteer-led or subsidized child care were discussed. Such efforts take time, coordination, and funding; thus, future program development work is needed to best identify the most effective community procedures for providing these types of services. However, such an effort could be a very important way to prevent CM in post-disaster circumstances, by providing overstressed parents a reprieve at times they might need it most. Lastly, data at the exosystem level also suggested a significant need for policy that provides support to community helpers (i.e., clinicians, medical providers, shelter staff, community resource staff)

who are responsible for delivering recovery services, and, ultimately, those who could provide service delivery for CM prevention and intervention efforts. Community helpers often suffer tremendous personal losses as the result of a disaster; equal to or greater than those families they were serving. Identifying ways to develop local provider capacity is critical to prevention and intervention programming success. Funding streams to subsidize communities that lose personnel should also be considered.

Themes that emerged at the mesosystem level, focused on the relationships between community agencies that serve families during the disaster planning and preparedness phases, as well as in response and recovery. For instance, the perceptions of several Louisiana participants was that having pre-existing relationships among family-serving agencies allowed for quick and efficient successes related to the needs of youth in the aftermath of Katrina. Cooperation among such agencies allows for the combination of resources without duplication, which is an imperative first step in post-disaster response and recovery. A second theme that emerged for this context was rethinking agency roles and finding creative ways to work together in the post-disaster environment. Most relevant to the medical community, mobile units for health and mental health services obtained through grant funding following Katrina were reportedly very effective and may provide a unique venue for assessing and responding to CM risk in the community post-disaster. Protocols delineating procedures that worked effectively, as well as those that failed, would be very helpful to future recovery efforts. Ultimately researchers are encouraged to study the cost-effectiveness of such planning and recovery efforts, in order to determine what should become standards for best practices in these circumstances.

Lastly, at the microsystem level, participants across both states agreed that parents' post-disaster experience significant stress, have little time, energy or capacity to invest in a nurturing parent-child relationship, provide inadequate supervision, and engage in negative coping behaviors (i.e., substance abuse, criminal behavior, mental health issues, and intimate relationships). Approximately 80% of maltreatment is perpetuated by caretakers within the family;[22] thus, it is critical to consider brief, immediate interventions that can target parental stress and related factors, as a primary prevention method for reducing CM risk post-disaster. Interventions available at multiple ecological levels for parents and families will likely have the greatest public health impact.

LIMITATIONS

Although a diverse group of child and family serving agencies was represented in this study, overall, the number of participants was small, the types of agencies recruited across states were not consistent, and participants held administrative roles, which likely impacted responses. Qualitative data collected from practitioners "on the ground" may have resulted in different themes and recommendations. Additionally, no information was collected from families, which made it difficult to identify relevant themes and recommendations at the ontogenic level. Clearly, there are important prevention efforts that could target the individual child risk of CM post-disaster. Lastly, because there were only 16 participants representing agencies across 2 states, these results are limited in their generalizability.

CONCLUSION

In conclusion, findings from this exploratory study suggest that community agencies working with families and in disaster preparedness recognize the potential importance of addressing CM prevention as a part of disaster planning and recovery. These findings warrant further exploration of the risk factors, across the ecological framework, that directly impact CM incidence rates in post-disaster circumstances. Longitudinal research is also needed, specifically to identify the trajectories that result in greatest risk for CM following disaster, so that relevant policy and programming can be put in place for the highest risk families. As future research reveals more about this topic, a comprehensive list of recommendations and guidelines for dealing with CM, similar to what was outlined for child mental health by The National Center for Disaster Preparedness, should be developed. Specific recommendations for how medical personnel working in emergency medicine can play an instrumental role in disaster planning efforts should also be considered. Efforts to increase physician awareness and recognition of the physical and mental stressors that could most increase risk for CM and other forms of intentional injury of children in post-disaster circumstances are an important next step.

Address for Correspondence: Shannon Self-Brown, PhD. Georgia State University, School of Public Health, PO Box 3995, Atlanta, GA 30302. Email: sselfbrown@gsu.edu.

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REFERENCES

1. Becker-Blease KA, Turner HA, Finkelhor D. Disasters, victimization, and children's mental health. *Child Development*. 2010; 81:1040–1052.
2. Brandenburg M, Watkins S, Brandenburd K, Schieche C. Operation Child-ID: Reunifying children with their legal guardians after Hurricane Katrina. *Disasters*. 2007;31: 277-287.
3. American Academy of Pediatrics. Committee on Pediatric Emergency Medicine. 'The pediatrician's role in disaster preparedness'. *Pediatrics*. 1997;99:130–33.

4. O'Connor ME, Burkle FM, Olness K. Infant feeding practices in complex emergencies: A case study approach. *Prehospital and Disaster Medicine.* 2001;16:231–38.
5. Keenan HT, Marshall SW, Nocera MA, et al. Increased incidence of inflicted traumatic brain injury in children after a natural disaster. *American Journal of Preventive Medicine*. 2004;26:189–193.
6. Curtis T, Miller BC, Helen Berry E. Changes in reports and incidence of child abuse following natural disasters. *Child Abuse and Neglect*. 2000; *24*:1151-1162.
7. Houck CD, Nugent NR, Lescano CM, et al. Sexual abuse and sexual risk behavior: Beyond the impact of psychiatric problems. *Journal of Pediatric Psychology.* 2010;*35*:473-483.
8. Hussey JM, Chang JJ, Kotch, JB. Child maltreatment in the United States: Prevalence, risk factors, and adolescent health consequences. *Pediatrics*. 2006;*118*:933-942.
9. Krug EG, Dahlberg LI, Mercy JA, et al. Child abuse and neglect by parents and other caregivers world report on violence and health Geneva: World Health Organization. 2002;57-81.
10. Irish L, Kobayashi I, Delahanty DL. Long-term physical health consequences of childhood sexual abuse: A meta-analytic review. *Journal of Pediatric Psychology*. 2010;35:450-461.
11. Guwitch RH, Kees M, Becker SM, et al. When disaster strikes: Responding to the needs of children. *Prehospital and Disaster Medicine*. 2004;19:21–28.
12. Bronfenbrenner U. *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, MA: Harvard University Press; 1979.
13. Weems CF, Overstreet S. Child and adolescent mental health research in the context of Hurricane Katrina: An ecological needs-based perspective and introduction to the special section. *Journal of Child and Adolescent Psychology.* 2009; 37:487-494.
14. Belsky J. Child maltreatment: An ecological integration. *American Psychologist*. 1980;35:320-335.
15. Kronenberg ME, Hansel TC, Brennan AM, et al. Children of Katrina: Lessons learned about postdisaster symptoms and recovery patterns. *Child Development*. 2010;81:241–1259.
16. Kelley ML, Self-Brown S, Le B, et al. Predicting posttraumatic stress symptoms in children following Hurricane Katrina: A prospective analysis of the effect of parental distress and parenting practices. *Journal of Traumatic Stress*. 2010;23:582–590.
17. Boyatzis R. *Transforming qualitative information: Thematic analysis and code development.* Thousand Oaks, CA: Sage; 1998.
18. McEntire DA, Fuller C, Johnston CW, Weber R. A comparison of disaster paradigms: The search for a holistic policy guide. *Public Administration Review.* 2002;62:276-91.
19. Smith GP, Wenger D. Sustainable Disaster Recovery: Operationalizing an Existing Agenda. In, Rodriguez, H., Quarantelli, E., & Dynes, R (Eds), *Handbook of Disaster Research.* New York: Springer; 2006:234-274.
20. Paxson C, Rhodes J, Waters M, Fussell E. Five Years Later: Recovery from Post Traumatic Stress and Psychological Distress Among Low-Income Mothers Affected by Hurricane Katrina. *Social Science and Medicine*. 2012;74:150-157.
21. Schoenbaum M, Butler B, Kataoka SH, et al. Addressing mental health response to hurricanes Katrina and Rita: Modeling service use, costs, and outcomes. *Archives of General Psychiatry.* 2009; 66:906-914.
22. U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2010). *Child Maltreatment 2009*. Available at: http://www.acf.hhs.gov/programs/cb/stats_research/index.htm#can. Accessed November 30, 2012.

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Send CV and statement of interest to Fellowship co-Directors:
Shahram Lotfipour, MD, MPH at shahram.lotfipour@uci.edu, 714-456-2326
Bharath Chakravarthy, MD, MPH at bchakrav@uci.edu, 714-456-6986

University of California, Irvine Medical Center
Department of Emergency Medicine
101 The City Drive, Route 128-01
Orange, CA 92868

See the Department of Emergency Medicine's website available at
http://www.emergencymed.uci.edu/Education/faculty_development.asp for more details.

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Emergency Medicine Ultrasound Fellowship

University of California, Irvine, Department of Emergency Medicine seeks a Health Sciences Clinical Instructor. This is an ongoing recruitment. University of California, Irvine is a Level I Trauma center with 2800 runs/year, 40,000 ED census. Academic department with Division of Emergency Ultrasound since 2001. Director is fellowship trained and RDMS certified. Three other faculty are RDMS. Outside resident and med student emergency Ultrasound rotation established. Research, teaching and clinical environment. Clinical schedule of eight 10-hour shifts per month. Salary commensurate with level of clinical work. 1000 scans/year anticipated along with video review of 6000 more. RDMS certification expected upon completion of the fellowship. Prior experience not required. Please send CV, statement of interest and three letters of recommendation to: J Christian Fox, MD RDMS. Department of Emergency Medicine, Route 128, UC Irvine Medical Center, 101 City Drive South, Orange, CA 92868.

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