AMERICAN JOURNAL OF INDUSTRIAL MEDICINE 59:1130–1135 (2016)

Client History and Violence on Direct Care Workers in the Home Care Setting

Ha Do Byon, PhD, MS, MPH, RN,* Carla Storr, ScD, MPH, Lori Edwards, DrPh, MPH, RN, and Jane Lipscomb, PhD, RN, FAAN

Background *Health care workers providing home care are frequently unaware of their client's history of violence or mental illness/substance abuse disorder, recognized risk factors for workplace violence. This study estimated the associations between these factors and experiencing client violence among direct care workers in the home settings (DCWHs).*

Methods *Acts and threats of violence were estimated using data from an anonymous survey among DCWHs (n = 876) working at two large home care agencies. Logistic regressions were performed to produce odds ratios.*

Results *Physical acts and physical or verbal threats of client violence were associated with providing homecare to clients with a violence history (adjusted ORs = 6.60 and 10.78, respectively), whereas threats of client violence (adjusted OR = 5.80) were associated with caring for clients with a mental illness/substance abuse disorder.*

Conclusions *Policy and practices that support the communication of appropriate client risk information may reduce the likelihood of workplace violence among DCWHs.* Am. J. Ind. Med. 59:1130–1135, 2016.

KEY WORDS: direct care worker; home care; mental illness; substance abuse disorder; workplace violence

INTRODUCTION

In the United States, workplace violence is highly prevalent in health care settings. In 2014, the rate of injuries and illnesses from violence in the private health care and social assistance industry, requiring days away from work was over three times more frequent than that for all private industries combined [U.S. Bureau of labor Statistics, 2015]. A recent systematic literature review shows that the consequences of workplace violence are broad including physical, psychological, emotional, work functioning, quality of care, social, and financial impacts [Lanctôt and Guay, 2014]. These negative impacts of workplace violence are a hindrance to the recruitment and retention of long-term care workers. In a survey conducted in Oregon, case managers responded that 51.5% of the home care workers had reported that they were quitting their job because the client or someone else in the home was violent toward them [Nakaishi et al., 2013]. National shortages of long-term care workers, including direct care workers in the home settings (DCWHs), have been well recognized, yet still remain a major challenge [Institute of Medicine of the National Academies, 2008; Spetz et al., 2015].

DCWHs including home health and personal care aides provide medical and non-medical services to the elderly and disabled in the homes [Paraprofessional Healthcare Institute, 2011]. They are particularly vulnerable to type II violence where the perpetrator is a client at the workplace, according to the classification made by the University of Iowa Injury Prevention Research Center [2001]. DCWHs' reports of their experience of non-physical aggression from the clients or

School of Nursing, University of Maryland, Baltimore, Maryland

*Correspondence to: Ha Do Byon, PhD, MS, MPH, RN, School of Nursing, University of Virginia, 202 Jeanette Lancaster Way, McLeod Hall Room 5039, Charlottesville, VA 22903. E-mail: hb7ze@virginia.edu

Accepted 16 August 2016

DOI 10.1002/ajim.22652. Published online 26 September 2016 in Wiley Online Library (wileyonlinelibrary.com).

someone else in the house ranged from 8.2% to 65%, while physical violence was reported by 4.6% to 45% of DCWHs [Gershon et al., 2008; Sherman et al., 2008; Galinsky et al., 2010; Nakaishi et al., 2013; Hanson et al., 2015; Quinn et al., 2016]. The role of home care staff characteristics as covariates for workplace violence has been studied but not found to be risk factors for assault. Galinsky et al. [2010], in their sample of DCWHs and home healthcare nurses, found that age, gender, and race were not significantly associated with patient assaults. As with many work hazards, low job tenure has been found to be associated with higher reports of assaults among nursing assistants working in US nursing homes [Tak et al., 2010].

According to the MacArthur Risk Assessment Study [Steadman et al., 1996], violence risk factors can be grouped into four domains: dispositional, historical, contextual, and clinical. Two of these risk factors (historical: violence history and clinical: substance abuse or personality disorder) have been found to predict violence in general, psychiatric, and forensic settings [Singh et al., 2011]. However, little is known about these two factors in the home care settings; and to our knowledge, no study of the associations with DCWHs' experience of client violence. We hypothesized that DCWHs caring for clients with a previous violence history or a mental illness/substance abuse disorder may experience higher rates of physical assaults or threats of client violence.

METHODS

Sample

Data were obtained from an anonymous survey of DCWHs working at one large and one medium size home care agencies in Chicago during their mandatory training, conducted in 2006. Survey participants provided in-home services to the elderly eligible for a Medicaid Home and Community-Based Waiver program, which supports long-term care in home settings. The services included assistance in household tasks (e.g., cleaning, preparing meals, doing laundry, shopping, etc.) and personal care (e.g., dressing, toileting, bathing, grooming, etc.). A total of 980 DCWHs (74% response rate) completed the survey questionnaire. The sample eligible for this analysis included only cases (876) that had responses for the two outcome variables of interest, an act of physical violence and a threat of physical or verbal violence (89% of those surveyed). Almost all of the DCWHs were female (92.1%); 79.5% were African American (Table I). On average, DCWHs were 45 years old (SD: 13.5) and worked in home care for 6.8 years (SD: 5.9) ranging from a few months to 30 years (not reported in the Table). The study protocol was approved by the Institutional Review Board for protection of human subjects at the University of Maryland, Baltimore.

Measures

Violence outcomes included intentional acts of physical violence (act of violence) and physical or verbal threats of violence (threat of violence), both of which are included in the Occupational Safety & Health Administration definition of violence [Occupational Safety & Health Administration, 2015]. An act of violence was captured by the item, "I've had a client that hit/punched/scratched me on purpose." A threat of violence was captured by the item, "I've been physically or verbally threatened." The questions asked about the number of times they had these experiences while in client's home in the past 12 months. Responses were originally 5-level Likert scaled: four or more times, three times, two times, once, and never. They were grouped into binary outcomes for this study: "no" for having never experienced and "yes" for having experienced at least once while in a client's home.

Client violence risk factors were measured by two items: "In the past 12 months, how often (never, monthly, 2–4 times per month, daily, or weekly) have you visited clients who had been violent in the past?" Then, using the same stem, respondents noted how often they visited clients who had a dual diagnosis of both a mental illness and a substance abuse disorder (alcohol or drugs). The responses to each of these questions were dichotomized as "no" for having never visited and "yes" for having visited clients with such a history at least monthly in the past year. Recoding was conducted to ensure adequate counts for each category.

Demographic and occupational characteristics were included as control variables: age (in years), gender (female, male), race (African American, non-African American), and job tenure (number of years working in home care).

Statistical Analysis

Descriptive and inferential statistics were calculated using SPSS version 21 [IBM Corp, 2012]. For descriptive statistics, frequencies and proportions in percent for categorical variables, and means and their standard deviations for continuous variables were computed. For inferential statistics, bivariate odds ratios for both acts and threats of violence were estimated with the independent variables using simple logistic regressions. Multiple logistic regression was used to examine the associations while holding constant other covariates. Seeking a parsimonious model that still explained the data well, only variables where the crude association was found to have a P-value < 0.25 were included in the multiple logistic regression models [Hosmer and Lemeshow, 2000].

TABLE I. Characteristics of the DCHWs and Their Experience of Client Violence (n = 876)

		Act of physical violence			Physical or verbal threat of violence		
	Total, n	%	Crude OR (95%CI)	*P*-value	%	Crude OR (95%CI)	*P*-value
Client violence	876	2.5	–	–	7.9	–	–
Gender							
Female	746	2.0	1.0	–	7.5	1.0	–
Male	64	6.3	3.25 (1.05, 10.10)	0.04	12.5	1.76 (.80, 3.88)	0.16
Age	719	–	0.97 (0.93, 1.00)	0.07	–	0.99 (.97, 1.01)	0.45
Race							
African American	637	2.2	1.0	–	8.0	1.0	–
Non-African American[a]	164	2.4	1.11(0.36, 3.43)	0.85	6.1	0.74 (0.37,1.50)	0.41
Tenure[b]	839	–	0.96 (0.88, 1.05)	0.38	–	1.02 (0.98, 1.06)	0.45
Client violence history							
No	798	1.6	1.0	–	4.9	1.0	–
Yes	63	14.3	10.06 (4.12, 24.59)	<0.001	46.0	16.60 (9.20, 30.00)	<0.001
Client dual diagnosis[c]							
No	821	1.8	1.0	–	6.0	1.0	–
Yes	44	15.9	10.17 (3.91, 26.44)	<0.001	43.2	11.97 (6.17, 23.23)	<0.001

OR, odds ratio; CI, confidence interval.
[a]Non-African American includes American Indian/Alaska Native, Asian, Native Hawaiian or Pacific Islander, White, or more than one race.
[b]Tenure represents the number of years working in home care.
[c]Dual diagnosis represents mental illness and substance abuse disorder (alcohol or drugs).

RESULTS

Two and a half percent of the DCHWs experienced acts of physical violence from their clients, and almost 8% responded they were verbally or physically threatened in their client's home in the past 12 months (Table I). Seven percent of the DCHWs reported they visited clients who had been violent in the past during the past 12 months; 5% had clients with both a mental illness and a substance abuse disorder using either alcohol or drugs.

More DCWHs who worked with a client with a history of violence than those who worked for a client without a violence history experienced an act of violence (14.3% vs. 1.6%, crude OR = 10.06, 95%CI = 4.12, 24.59; $P < 0.001$) as well as a threat of violence (46.0% vs. 4.9%, crude OR = 16.60, 95%CI = 9.20, 30.00; $P < 0.001$). A larger proportion of DCWHs taking care of a client who had both a mental illness and an alcohol or a drug abuse experienced an act of violence (15.9% vs. 1.8% crude OR = 10.17, 95%CI = 3.91, 26.44; $P < 0.001$) and a threat of violence (43.2% vs. 6.0%, crude OR = 11.97, 95%CI = 6.17, 23.23; $P < 0.001$) than those who worked for a client without the dual diagnosis. In addition, the odds that a male DCHW experienced physical violence was three times that of female DCHW (6.3%, OR = 3.25, 95%CI = 1.05, 10.10; $P = 0.04$).

Three of the associations above between client history (violence, dual diagnosis) and experiencing acts of violence or threats of violence from a client remained significant, though the magnitudes were attenuated, in models that held other covariates constant (Table II). The association between working with clients having both a mental illness and a substance use disorder and experiencing an act of physical violence was no longer significant. The gender difference was no longer evident.

DISCUSSION

Two and one-half percent and 7.9% of DCWHs in our study reported experiencing acts of violence and threats of violence from clients at least once a year, respectively. Our estimates are somewhat lower than the results from other studies (physical violence: 4.6−45%, non-physical aggression: 8.2−65%) [Gershon et al., 2008; Sherman et al., 2008; Galinsky et al., 2010; Nakaishi et al., 2013; Hanson et al., 2015; Quinn et al., 2016]. In our study, DCWHs reported an act of violence when they perceived it was directed at them "on purpose." This wording may have resulted in a lower rate for acts of violence when compared with other studies that made no distinction in perceived intentionality. Another possible explanation for the lower acts of violence rate is the difference in perpetrators. DCWHs were asked to respond if they had a client that committed acts of violence, while other studies also included others in a client's home as perpetrators in their survey [Gershon et al., 2008; Sherman et al., 2008; Nakaishi et al., 2013; Hanson et al., 2015; Quinn et al., 2016].

TABLE II. Estimated Adjusted Odds Ratios for Violence by Potential Risk Factors (n = 876)

	Act of physical violence		Physical or verbal threat of violence	
	Adjusted OR (95%CI)	*P*-value	Adjusted OR (95%CI)	*P*-value
Gender				
Female	1.0		1.0	–
Male	1.60 (0.41, 6.22)	0.50	0.82 (0.27, 2.50)	0.73
Age	0.97 (0.93, 1.00)	0.08	0.99 (0.97, 1.02)	0.57
Client violence history				
Yes	6.60 (2.13, 20.48)	0.001	10.78 (5.14, 22.61)	<0.001
No	1.0		1.0	–
Client dual diagnosis[a]				
Yes	2.31 (0.60, 8.92)	0.23	5.80 (2.42, 13.90)	<0.001
No	1.0		1.0	–

OR, odds ratio; CI, confidence interval.
[a]Dual diagnosis represents mental illness and substance abuse disorder (alcohol or drugs).

In addition, discrepancies may be due to differences in study samples (DCWHs only vs. DCWHs with other home health care professionals such as nurses [Galinsky et al., 2010]), DCWH employer types (agency- vs. consumer-hired [Nakaishi et al., 2013; Hanson et al., 2015]), and various operational definitions for violence [Gershon et al., 2008; Sherman et al., 2008; Galinsky et al., 2010; Nakaishi et al., 2013; Hanson et al., 2015; Quinn et al., 2016].

A strong association was seen between DCWHs taking care of a client with a previous violence history and being a victim of a client act of violence (OR = 6.60) and a threat of violence (OR = 10.78) when controlling for covariates. There was also an association between taking care of a client with a mental illness and a substance abuse disorder and experiencing a threat of violence from clients (OR = 5.80). These results suggest that historical and clinical risk factors are important to recognize, document, and communicate to all caregivers in home care settings. When a client's history indicates such risk factors, additional measures can be taken (i.e., closer supervision and possible accompanied home visits) as well as training and support on how to mitigate a crisis situation for potentially violent clients. One of the most effective interventions for preventing staff injuries from patients in the acute care setting is "flagging" patients charts once this history was recognized [Drummond et al., 1989].

Providing client care in the home presents particular vulnerability to aggression and violence attributed to the wok setting, namely, working alone in homes where violent, antisocial behaviors, and drug and alcohol misuse by clients or their family members may be encountered [Fazzone et al., 2000; Fitzwater and Gates, 2000; Sherman et al., 2008]. And yet, DCWHs have access to fewer safety measures when compared with their counterparts in the institutional health care settings, who benefit from the presence of security personnel, the availability of coworkers to assist with difficult clients, and annual (or more frequent) workplace violence prevention education or training [Lipscomb and London, 2015]. In addition, DCWHs frequently work with clients with cognitive impairments or developmental health issues who may display difficult or violent behaviors.

As noted earlier, studies on assessments of these factors in home care settings are rare. What is also scarce is evidence that the assessments are being shared with home health care workers who work on the frontline at client's homes. In fact, what is known is the opposite. In 2012, a 24-year-old female social service coordinator was murdered during a home visit in Florida. This incident revealed that the hiring organization failed to notify the worker about the client's substance abuse and criminal history including violent behaviors, although the agency knew about them [Occupational Safety and Health Review Commission, 2015; U.S. Department of Labor, 2015]. The decision is currently pending a review by the agency's Commissioners. The case before the Occupational Safety and Health Review Commission is one of the several homicides of visiting home care workers, where a history of violence was not known by the worker conducting the home visit [Sontag, 2011; Lipscomb and London, 2015]. The safety training that the social service coordinator in the case received was determined by the court to be inadequate in design and execution. In comparison, it is doubtful that such safety training programs are available to DCWHs. There are no federal training standards for personal care aides, and three quarters of states lack a state-sponsored curriculum for any training, let alone one for safety or workplace violence prevention [Paraprofessional Healthcare Institute, 2013].

DCWHs are critical members of integrative home care teams to improve the quality of client care [Stone and Bryant, 2011]; often the member who spends the greatest amount of time with a client and therefore has much information to share with the team. Importantly, they also have a high need to know all client information relevant to his/her care. In our survey (not reported in the Tables), 17.2% of the DCWHs reported that they always or often saw new clients before getting information on their health problems. Another 13.6% stated they sometimes saw new clients before obtaining the information. Although the survey question was limited to health problems, it is not unreasonable to think that they neither received information on client history of previous violence, mental illness or substance abuse before they saw their clients. DCWHs have reported that they felt vulnerable when they were not informed of clients' contagious health condition [Zanoni et al., 2007]. Having no or limited information for potential hazards before meeting clients for the first time may put DCWHs at a very high risk of being a victim of violence.

Policies relevant to protecting mental health and home care workers from client violence include the 2014 California law that requires the director of a state hospital or a clinician to obtain the state summary criminal history information for a client committed to the State Department of State Hospitals [Cal, 2014]. Also, in 2007, the Marty Smith law of Washington State was passed in response to a homicide of a visiting health care professional. The law requires that a designated mental health professional or crisis intervention worker should be accompanied by a second trained individual on high-risk home visits when stabilizing, treating, or evaluating a person [Wash, 2007].

Strengths and Limitations

To our knowledge, this is the first study to examine the association between historical and clinical risk factors and client violence on DCWHs. Our study highlights the need to provide DCWHs with information on client violence and a mental illness/substance abuse disorder history. Another strength includes the high response rate, which is challenging to achieve when surveying low-wage workers who do not work together at a central place but work isolated from each other. Also, having research staff present in order to clarify and answer questions during the surveys could reduce uncertainty when DCWHs responded to the self-completed questionnaire.

Limitations of the study include that our sample was confined to two home care agencies in Chicago, limiting the generalization of this study. Although these data were collected in 2006, the results from this analysis are important and highly relevant, given that substantive barriers to accessing client history of violence and mental illness/substance abuse disorders still persist in home care industries [Lipscomb and London, 2015]. The inclusion of only currently employed DCWHs in the sample could have resulted in underestimation of client violence because abused workers might have left the job. However, survey anonymity and a focus on the past 12-month timeframe are likely to have limited underreporting and recall bias.

We were unable to evaluate the reliability and validity of DCWH's reports of clients' history of violence and mental illness/substance abuse with objective measures. Nevertheless, it is likely that DCWHs become aware of their client's history and behaviors as they spend extended hours in the client's home, being deeply engaged in their personal care, customs, and habits. It is also likely that if a DCWH learns of a violent incident or experiences one, this would leave a strong memory. Securing objective measures for client history of violence and mental illness/substance abuse remains a challenge.

CONCLUSION

The results support the importance and necessity of including historical and clinical domains of violence risk factors in a client assessment in home care setting. Providing DCWHs information on client violence and a mental illness/substance abuse disorder is essential to reduce the hazards of being victims of client violence. Organizational, legal, and policy supports are needed to facilitate this process. Providing safer workplaces will eventually contribute to recruiting and retaining this growing workforce and proving quality client care in the home setting.

AUTHORS' CONTRIBUTIONS

The authors listed provided substantial contributions to the conception, design, acquisition, analysis, and/or interpretation of data for the work; drafted and revised it critically for important intellectual content; provided final approval of the version to be published; and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

FUNDING

The original study including the survey data collection was funded by a National Institute for Occupational Safety and Health Grant (R01OH008237). This study analyzed the collected data and was funded by the Sigma Theta Tau International Honor Society of Nursing, Pi Chapter.

ETHICS APPROVAL AND INFORMED CONSENT

The previously collected data do not include identifiable private information. The study in this article was determined to be not a human subject research by the University of Maryland, Baltimore Institution Review Board.

DISCLOSURE (AUTHORS)

The authors report no conflicts of interest.

DISCLOSURE BY AJIM EDITOR OF RECORD

Steven Markowitz declares that he has no competing or conflicts of interest in the review and publication decision regarding this article.

DISCLAIMER

None.

REFERENCES

Cal. 2014. Welfare and Institutions Code §4142.

Drummond D, Sparr L, Gordon G. 1989. Hospital violence reduction among high-risk patients. JAMA 261:2531–2534.

Fazzone PA, Barloon LF, McConnell SJ, Chitty JA. 2000. Personal safety, violence, and home health. Public Health Nurs 17:43–52.

Fitzwater E, Gates D. 2000. Violence and home care: A focus group study. Home Healthc Nurse 18:596–605.

Galinsky T, Feng HA, Streit J, Brightwell W, Pierson K, Parsons K, Proctor C. 2010. Risk factors associated with patient assaults of home healthcare workers. Rehabil Nurs 35:206–215.

Gershon RR, Pogorzelska M, Qureshi KA, Stone PW, Canton AN, Samar SM, Henriksen K, Battles JB, Keyes MA, Grady ML, et al. 2008. Home health care patients and safety hazards in the home: Preliminary findings. In: Advances in patient safety: New directions and alternative approaches. Vol. 1. Rockville, MD: Agency for Healthcare Research and Quality.

Hanson GC, Perrin NA, Moss H, Laharnar N, Glass N. 2015. Workplace violence against homecare workers and its relationship with workers health outcomes: A cross-sectional study. BMC Public Health 15:145–168.

Hosmer DW, Lemeshow S. 2000. Applied logistic regression, 2nd edition. New York: Wiley-Interscience Publication.

IBM Corp. 2012. IBM SPSS statistics. Armonk, NY: IBM Corp.

Injury Prevention Research Center. 2001. Workplace violence: A report to the nation. Univ. Iowa. [accessed 2016 June 29]. http://www.public-health.uiowa.edu/iprc/wp-content/uploads/2015/09/workplace-violence-report.pdf

Institute of Medicine of the National Academies. 2008. Retooling for an aging America: Building the health care workforce. National Academies Press.

Lanctôt N, Guay S. 2014. The aftermath of workplace violence among healthcare workers: A systematic literature review of the consequences. Aggress Violent Behav 19:492–501.

Lipscomb J, London M. 2015. Not part of the job: How to take a stand against violence in the work setting. Spring Field, MD: American Nurse Association.

Nakaishi L, Moss H, Weinstein M, Perrin N, Rose L, Anger WK, Hanson GC, Christian M, Glass N. 2013. Exploring workplace violence among home care workers in a consumer-driven home health care program. Workplace Health Saf 61:441–450.

Occupational Safety and Health Review Commission. 2015. Secretary of Labor v. Integra Health Management, Inc.

Occupational Safety & Health Administration. 2015. Workplace Violence. [accessed 2016 June 29]. https://www.osha.gov/SLTC/workplaceviolence/

Paraprofessional Healthcare Institute. 2011. Who are direct-care workers? [accessed 2016 June 29]. http://www.phinational.org/sites/phinational.org/files/clearinghouse/NCDCW%20Fact%20Sheet-1.pdf

Paraprofessional Healthcare Institute. 2013. Personal care aide training requirements [accessed 2016 June 29]. http://phinational.org/sites/phinational.org/files/research-report/pca-training-reqs-state-findings.pdf

Quinn MM, Markkanen PK, Galligan CJ, Sama SR, Kriebel D, Gore RJ, Brouillette NM, Okyere D, Sun C, Punnett L, Laramie AK. 2016. Occupational health of home care aides: Results of the safe home care survey. Occup Environ Med 73:237–245.

Sherman MF, Gershon RR, Samar SM, Pearson JM, Canton AN, Damsky MR. 2008. Safety factors predictive of job satisfaction and job retention among home healthcare aides. J Occup Environ Med 50:1430–1441.

Singh JP, Grann M, Fazel S. 2011. A comparative study of violence risk assessment tools: A systematic review and metaregression analysis of 68 studies involving 25,980 participants. Clin Psychol Rev 31:499–513.

Sontag D. 2011 Jun 16. A schizophrenic, a slain worker, troubling questions. N. Y. Times. [accessed 2016 June 29]. http://www.nytimes.com/2011/06/17/us/17MENTAL.html

Spetz J, Trupin L, Bates T, Coffman JM. 2015. Future demand for long-term care workers will be influenced by demographic and utilization changes. Health Aff (Millwood) 34:936–945.

Steadman HJ, Monahan J, Appelbaum PS, Grisso T, Mulvey EP, Roth LH, Robbins PC, Klassen D. 1996. Designing a new generation of risk assessment research. In: Monahan J, Steadman HJ, editors. Violence and mental disorder: Developments in risk assessment. Chicago and London: University of Chicago Press. pp. 297–318.

Stone RI, Bryant NS. 2011. Educating direct care workers on transitions of care. Annu Rev Gerontol Geriatr 31:167–187.

Tak S, Sweeney MH, Alterman T, Baron S, Calvert GM. 2010. Workplace assaults on nursing assistants in US nursing homes: A multilevel analysis. Am J Public Health 100:1938–1945.

U.S. Department of Labor. 2015 Jul 1. Judge affirms OSHA findings in 2012 death of health care coordinator killed by mentally ill client with violent criminal history. [accessed 2016 June 29]. https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=NEWS_RELEASES&p_id=28218

U.S. Bureau of labor Statistics. 2015. Nonfatal occupational injuries and illnesses requiring days away from work, 2014. News Release Report No.: USDL 15-2205. [accessed 2016 June 29]. http://www.bls.gov/news.release/pdf/osh2.pdf

Wash. 2007. RCW 71.05.700.

Zanoni J, Kauffman K, McPhaul K, Nickels L, Hayden M, Glassman M, Vega L, Sokas R, Lipscomb J. 2007. Personal care assistants and blood exposure in the home environment: Focus group findings. Prog Community Health Partnersh 1:125–131.

Institution at which the work was performed: School of Nursing, University of Maryland, Baltimore.