



Published in final edited form as:

Violence Vict. 2014 ; 29(5): 719–741. doi:10.1891/0886-6708.VV-D-13-00018.

Factors Associated with Increased Risk for Lethal Violence in Intimate Partner Relationships among Ethnically Diverse Black Women

Bushra Sabri, Jamila K. Stockman, Jacquelyn C. Campbell, Sharon O'Brien, Doris Campbell, Gloria B. Callwood, Desiree Bertrand, Lorna W. Sutton, and Greta Hart-Hyndman

Dr. Sabri is a Research Associate at Johns Hopkins University; Dr. Stockman is an Assistant Professor at the University of California, San Diego; Dr. J. Campbell is a Professor at Johns Hopkins University; Dr. O'Brien is a Family Violence Research Consultant, Silver Spring, MD; Dr. Callwood is an Associate Professor and Director, and Dr D. Campbell is a Visiting Professor and Co-Director of the Caribbean Exploratory NIMHD Research Center of Excellence (CERC) at the University of the Virgin Islands. Ms. Bertrand, MSN, and Ms. Sutton, MPA are Research Coordinators for the CERC University of the Virgin Islands. Dr. Hart-Hyndman is an Adult Nurse Practitioner at the VA community based clinic in St. Thomas, United States Virgin Islands

Abstract

The purpose of this study was to identify factors associated with increased risk for lethal violence among ethnically diverse Black women in Baltimore, Maryland (MD) and the US Virgin Islands (USVI). Women with abuse experiences ($n=456$) were recruited from primary care, prenatal or family planning clinics in Baltimore, MD and St. Thomas and St. Croix, USVI. Logistic regression was used to examine factors associated with the risk for lethal violence among abused women. Factors independently related to increased risk of lethal violence included fear of abusive partners, PTSD symptoms, and use of legal resources. These factors must be considered in assessing safety needs of Black women in abusive relationships.

Intimate partner violence (IPV) is a major social and public health problem that adversely and disproportionately affects Black women. Evidence suggests rates of IPV are particularly higher among Black women, when compared to their White counterparts (Catalano, Smith, Snyder, Rand, 2009; Taft, Bryant-Davis, Woodward, Tillman, Torres, 2009). In the recent National Intimate Partner and Sexual Violence Survey (2010) in the US, approximately 43.7% of Black women reported experiencing rape, physical violence, and/or stalking by an intimate partner in their lifetime (Black et al., 2011). In the Caribbean, two-thirds of Black women with victimization histories were found to be victims of IPV (LeFranc, Samms-Vaughan, Hambleton, Fox, Brown, 2008). Black women have also been found to be at high risk of dying from IPV (Azziz-Baumgartner, McKeown, Melvin, Dang, Reed, 2011). Specifically, Black women in the US have been found to be two to four times more likely than White women to be killed by an intimate partner (Catalano, Smith, Snyder, Rand, 2009). In a study of women murdered in New York City from 1990–1999, 45.2% of the

victims killed by an intimate partner were found to be Black women (Frye, Hosein, Waltermaurer, Blanfy, Wilt, 2005).

A recent report by the United Nations Office on Drugs and Crime (2011) found rising homicide rates in the Caribbean, with Caribbean women being at the greatest risk of murder owing to IPV. Researchers, however, have not focused their attention on identifying factors related to risk for lethal violence (LV) among IPV-affected women residing in the Caribbean region. Further, studies have not examined differences in risk factors for LV for Black women in the US and Black women in the USVI. This study addressed this gap by examining characteristics associated with increased risk for lethal violence in intimate partner relationships comparing Black women in Baltimore with those in the USVI. An examination of risk factors is critical for identifying high-risk groups of Black women and for developing preventative interventions.

Risk factors for lethal violence in intimate partner relationships among women Socio-Demographic Characteristics

Researchers have identified a number of risk factors for lethal violence in intimate partner relationships, for example, age (Dobash, Dobash, Cavanagh, Medina-Ariza, 2007) and employment. In an analysis of 2,577 intimate partner killings in Chicago, from 1965–1996, couples with large age gaps (10–16 years) were found to be at an elevated risk for lethal violence. The couples at high risk were those in which men were at least 16 years older than women or women were at least 10 years older than men (Breitman, Shackelford, Block, 2004). Young African American women have been found to be at a high risk of being lethally victimized by their intimate partners (Cheng Horon, 2010; West, 2004). In a racially diverse sample of victims of nonfatal physical abuse and homicides, women with unemployed abusive partners were four times more likely to become a victim of lethal violence than women with employed abusive partners (Campbell et al., 2003).

Education, income, employment and cohabitation without marriage are the determining factors for violence in intimate partner relationships among Blacks (Bent-Goodley, 2001; Sharps et al., 2003; Taft et al., 2009; West, 2004). Sharps and colleagues (2003) found Black American males who murdered or attempted to murder their partners more frequently reported low level of education and unemployment that did others who carried out these same acts. Moreover, Black American women with limited education and low incomes were overrepresented among female victims of lethal violence and attempted lethal violence (Sharps et al., 2003). In another study, women's high educational status was related to higher levels of homicides for Black Americans in non-marital relationships (Dugan, Nagin, Rosenfield, 2003).

Rates of violence in intimate relationships are found to be highest in the most-disadvantaged communities (i.e., communities characterized by poverty, family disruption, lack of employment opportunities and access to services). As a substantial proportion of Black American populations live in disadvantaged communities or socially isolated urban ghettos, Black American women may be at a high risk for exposure to IPV (Benson, Wooldredge, Thistlethwaite, Fox, 2004; Sampson Wilson, 1995; Taft et al., 2009; Wilson, 1987), which

can become lethal. Disadvantaged Black populations in the USVI may also be at a high risk for IPV. Thus, it is anticipated that socio-demographic differences will play a significant role in differential risk for lethal violence for Black women in the US and for those in the USVI.

Relationship Characteristics

Lethal violence occurs more often in some types of relationships than others. For instance, in a study of over 50,000 intimate partner homicides, women in dating or non-marital cohabiting relationships were more likely to be beaten to death by an intimate partner than women who were legally married (Mize, Shackelford, Shackelford, 2009). Women incur a greater risk of lethal violence in common law or cohabiting relationships than within marriage (Aldridge Browne, 2003; Dawson Gartner, 1998; Eastman, 2006; Shackelford, 2001; Shackelford Mouzos, 2005). It is argued that it may be due to such relationships being characterized by the presence of children from previous relationships, poverty, and unemployment (Dawson Gartner, 1998) or lack of commitment (Mize et al., 2009). Women going through a divorce or separation are also at elevated risk for experiencing lethal violence (Campbell, Glass, Sharps, Laughon, Bloom, 2007; Dawson Gartner, 1998; Reckdenwald Parker, 2010), particularly when the abuser is highly controlling (Campbell et al., 2003). The process of separation has been found to be a significant factor in the killings of Black women by their intimate partners (Williams, Oliver Pope, 2008). Thus, some types of relationships may place Black women at greater risk for lethal violence than others.

Abuse-Related Characteristics

A long history of IPV has been associated with lethal violence victimization among women from various racial and ethnic groups, including Black Americans (Campbell et al, 2003; Vittes Sorenson, 2008). Men often kill their female partners after subjecting them to lengthy periods of coercive abuse and assaults (Aldridge, Browne, 2003). In a multisite case-control study of 11 cities by Campbell et al., 2003, 70% of the 307 total lethal violence victims were physically abused before their deaths by the same intimate partner who killed them. Furthermore, 74% of lethal violence victims and 88% of attempted lethal violence victims seen in the health care system had sought help at emergency departments, inpatient units or ambulatory settings for injuries resulting from abuse by an intimate partner (Campbell et al., 2007; Sharps et al., 2001). Thus, abused women presenting with severe injuries in health care settings are likely to be at high risk for lethality.

Besides physical indicators such as injuries, it is also important to consider psychological indicators such as perceptions of fear. Women who perceive their partner as a threat may be at high risk for lethal violence victimization. Evidence however, shows victims underestimate the threat of lethality or severity of violence perpetrated against them; studies show that 49% of the women killed had not accurately perceived their risk according to reports by proxy informants (Campbell et al., 2003; Campbell et al., 2004). Other evidence suggests that abused women's perception of high risk may be accurate (Campbell et al., 2007), with studies showing women's predictions to be significantly associated with their subsequent experiences of re-assault (Heckert Gondolf, 2004; Weisz, Tolman, and Saunders,

2000). Although risk factors for lethal violence and intimate partner re-assault are not exactly the same (Campbell, 2004), women's fear of their abusive partners may reliably predict their risk for lethal violence.

Mental and Substance Misuse Problems

Mental health and substance misuse problems are related to both victimization and perpetration of IPV. For example, depression and drug/alcohol use were found to be associated with perpetration of violence against an intimate partner in a study of Black American and Hispanic men and women (Lipsky, Caetano, Field, Bazargan, 2005). Partners' mental health (Thomas, Dichter, Matejkowski, 2011), and drug or alcohol problems (Campbell et al., 2003; Sharps, Campbell, Campbell, Gary, Webster, 2001; Weinsheimer, Schermer, Malcoe, Balduf, Bloomfield, 2005), as well as women's mental health and substance misuse problems have been related to risk for severe or lethal violence (Sharps et al., 2001; Weinsheimer et al., 2005).

Problem drinking has been found to increase women's risk for victimization by intimate partner lethal violence (NIJ, 2007; Sharps et al. 2003). Sharps et al. (2001), in a 10-city national study of risk factors of lethal violence, found a significantly higher proportion of Black Americans among lethal violence or attempted lethal violence victims and perpetrators. Women with alcohol problems were found to comprise a higher proportion among victims of lethal violence or attempted lethality when compared with non-abused controls (Sharps et al., 2001). In another research study of 387 domestic violence shelter residents (77% Black Americans), Sato-DeLorenzo and Sharps (2007) reported that mental health symptoms, including anxiety and depression, and past history of illicit drug use were significantly associated with women being at high risk for lethal violence. Thus, poor mental health and substance misuse may increase the risk for lethality among Black women in the US and in the USVI.

Use of Community Resources

Use of domestic violence and legal resources by victims of IPV can reduce their risk for being victimized by lethal violence. For instance, legal interventions such as arrests for domestic violence have been found to protect women against lethal violence victimization (Campbell et al., 2003). In their study of 48 large US cities for the years 1976–1996, Dugan, Nagin, and Rosenfeld (2003) found that adoption of mandatory arrest laws was associated with fewer killings among married partners of all races. Among domestic violence resources, legal advocacy that effectively reduced contact between intimate partners reduced the opportunity for violence for White women. Other resources, however, suggested a retaliation effect when interventions stimulated increased violence without adequately reducing exposure. Use of legal resources against an abusive partner may cause stress or conflict in a relationship. If the victim is not adequately protected, she may be at high risk for lethal violence (Dugan et al., 2003). In another study, victims at severe or extreme risk for lethality were more likely to access legal resources than women at low risk (Lucea et al., 2012).

Legal resources such as restraining orders can effectively reduce victims' exposure to violence by an intimate partner (McFarlane et al., 2004). Yet, research suggests a small proportion of women obtain restraining orders (Logan, Shannon, Walker, Faragher, 2006). Vitti and Sorenson (2008) reported most women did not have a restraining order when they were killed. Only 11% of 231 women killed by their intimate partners had been issued a restraining order. Further, a lower proportion of Black American compared to other couples were found to have obtained a restraining order (Vitti Sorenson, 2008). African American women experience barriers to such resource utilization including stigma, lack of cultural competence, racism and discrimination, and access to care and services (Bent-Goodley, 2007). Lack of resources may promote Black American women's dependence on their male partners and may result in their increased risk of violence exposure. Women whose partners are considered powerful members of the Black American community (e.g., police officers and pastors) may not be able to disclose abuse. Further, they may not be able to use resources such as police protection and support from the church, which may leave them vulnerable to further violence (Taft et al., 2009). Black women's non-utilization of resources may place them at high risk for lethal violence by their intimate partners.

Study Rationale and Purpose

Researchers have identified risk factors associated with lethal violence in intimate partner relationships (e.g., Campbell et al., 2003; Eastman, 2006) including Black American women in their samples. The existing literature, however, is limited in its capacity to describe factors related to the risk for lethal violence among Black Caribbean women in abusive relationships. Further, no study was found that exclusively focused on comparing risk factors for lethal violence between Black women in Baltimore and those in the USVI. Due to multiple individual and environmental factors (e.g., inequities in access to health care and social services, and cultural norms), risk factors for lethal violence may differ between women living in Baltimore and in the USVI. Moreover, as the United States has a large number of immigrants from the USVI (e.g., 3.5 million immigrants in 2009; McCabe, 2011), it is important to account for heterogeneity among Black populations in the US mainland. Although our Baltimore sample included only 4 participants who self-identified as Caribbean immigrants, a large number of women in the USVI self-identified as Black African American and not Black Caribbean. As living environment and location of residence can play a role in exposure to violence (McCree, Jones, O'Leary, 2010) or lethal violence, the findings of this multi-site study will add to the literature on risk for lethality among diverse groups of Black women in abusive relationships. Therefore, the purpose of this study was to explore whether characteristics associated with increased risk for lethal violence in intimate partner relationships differed for Black women residing in Baltimore and those in the USVI.

Method

Study Sample and Procedures

This cross-sectional research was part of a large multi-site case-control project comparing abused and non-abused Black women in Baltimore ($n=134$) and in the USVI ($n=322$). This study was conducted in partnership between Johns Hopkins University, School of Nursing

and the University of the Virgin Islands, Caribbean Exploratory NIMHD Research Center, School of Nursing. Baltimore City and the USVI are demographically similar with the population of the US Virgin Islands comprised of 76.2% African American (Central Intelligence Agency, 2013) and Baltimore City, 63.7% African American (PBS, 2011). Poverty rates are similar as well as the percentage of persons eligible for Medicaid. Additionally, the black population in Baltimore City contrasts with the black population in the US by having a higher proportion of female-headed households, a higher proportion of black men and women living below the poverty level, and lower annual median household income (Maryland Department of Planning, 2013).

Women were recruited from primary care, prenatal or family planning clinics in Baltimore, Maryland in the mainland US and St. Croix and St. Thomas in the USVI. English and Spanish-speaking women of African descent, aged 18–55, who were in an intimate relationship within the past 2 years, were eligible for enrollment. The sample for the current study consisted of 456 women who reported lifetime experiences of physical, sexual, and/or psychological abuse by a current or former intimate partner. Women who reported no history of abuse were excluded. Approximately 96% ($n=128$) of the women in Baltimore self-identified as Black African American, 3% ($n=4$) as Black Caribbean, and 1.5% ($n=2$) self-identified as Black with mixed ethnicity. Among women in the USVI, 56% ($n=182$) self-identified as Black African American, 31.7% ($n=102$) as Black Caribbean, and 11.8% ($n=38$) self-identified as Black with mixed ethnicity.

Women were unobtrusively approached in the waiting rooms of the clinics to request participation in the study. Women who were interested in the study were screened to determine their eligibility using audio computer-assisted self-interview (ACASI). Eligible women who consented to participate in the study completed a 30-minute ACASI on sociodemographic characteristics, abuse history, potential lethal violence, mental health and other health outcomes. Women completed the survey in private offices in the clinics. Most participants completed it during the wait time for their appointments. If they were called to their appointment, they returned immediately afterwards to continue the survey. A \$20 gift card was provided as incentive for those who screened into the study and completed the interview. Participants also received a list of local resources related to women's health and domestic violence. All study procedures were approved by Institutional Review Boards of Johns Hopkins University, the University of the Virgin Islands and the National Institute on Minority Health and Health Disparities.

Measures

Risk for lethal violence (LV)—Risk for LV was assessed using 20 dichotomous items from the *Danger Assessment* (DA) instrument (20 items; $\alpha=0.83$; Range=–3–36). The DA is a clinical and research instrument developed to assist women in assessing their danger of being murdered or seriously injured by their intimate partners (Campbell, Webster, Glass, 2009). The 20-item DA determined each woman's potential risk of becoming a victim of LV (See Table 1). Women were asked, if each of the 20 risk factors for LV had occurred within the last year. A weighted scoring system identified women at the following levels of danger: variable danger (<8), increased danger (8–13), severe danger (14–17) and extreme danger

(>18). Women who scored higher than 13 on the DA were classified as being at high risk for LV, and those who scored 13 or below were classified in the low risk group.

Socio-demographic characteristics—Age was measured using a continuous variable. Abusive partner's employment status was measured using the following question: "Was this abusive partner employed while he was abusive or while you were together?" Response options were: "never," "very seldom," "some of time," "most of the time," or "all of the time." Education was assessed using the following response options: 8th grade or less, 9th grade or more but did not complete high school, graduated from high school or received GED, some trade school, some vocational school or some college, and completed trade school, vocational school or college.

Relationship characteristics—*Type of relationship with the abusive partner* was measured using the following question: "What is your relationship with the abusive partner?" Responses were categorized into the following: spouse or common-law, ex-spouse, boyfriend, ex-boyfriend, and other. *Cohabitation with the abuser* was determined based on the following question: "Did you live in the same household with the abusive partner (No, Yes)?"

Abuse-related characteristics—*Perceived fear of the abusive partner* was measured summing the following items from the Women's Experiences of Battering (WEB) instrument: a) I try not to rock the boat because I am afraid of what he might do; b) I hide the truth from others because I am afraid of what might happen if I do not hide it; c) He can scare me without laying a hand on me; d) He has a look that goes straight through me and terrifies me. Items were rated using a scale from 1 (disagree strongly) to 6 (agree strongly).

Severity of injuries was measured using a scale of 1 to 5. A value of 1 indicated no injuries, 2 indicated facial injuries or other bruises on the body, 3 indicated burns, broken bones, eye or dental injuries, 4 indicated head injuries with or without loss of consciousness and miscarriage, and 5 indicated being hurt by a weapon, having injuring that required surgery, stitches, and emergency room services or hospitalization.

Abused women for the current analysis were selected using the Severity of Violence against Women Scale (SVAWS; 46 items; alpha=0.94; Past year). Women were asked how often in the past twelve months they experienced the behavior from their abusive partners or if never had an abusive partner about their current or most recent partner. The items were rated using a 4-point scale ranging from 0 (never) to 4 (not in the last 12 months but it did happen before). Continuous severity scores for physical and sexual abuse items were created using a weighted scoring system (Marshall, 1992). The physical abuse severity scores range from .00–54 and the sexual abuse scores range from 0 to 11.5. Psychological abuse was assessed using the WEB (10 items; alpha=0.94; range=0–71).

Mental health and substance misuse—The *Primary Care Post-traumatic Stress Disorder Screening* (PC-PTSD) was used to measure PTSD. The PC-PTSD (4 items; alpha=0.78) is a self-report screening tool designed to assess PTSD symptoms in the past month (range 0–4). A score of 3 or higher is the cut-off for clinically significant PTSD

symptoms. The *Center for Epidemiologic Studies Depression* (CESD-10) was used to measure the presence of depressive symptoms. The CESD-10 (10 items; $\alpha=0.80$) is a brief screening measure for assessing levels of past-week depressive symptoms (range 0–29). A score of 10 or higher is the cut-off for clinically significant depressive symptoms. Each symptom item is rated according to its frequency of occurrence using a 4-point scale ranging from 0 (rarely or none of the time; <1 day) to 3 (All of the time; 5–7 days).

To measure drug use, women responded to the item, “How often have you had (problems with drug use) in the past year?” Women who reported using street drugs, over-the-counter, drugs not prescribed or taken in a way that was not recommended endorsed one of the following levels of use: “once,” “a few times,” “many times,” and “every day or almost every day.” The *Alcohol Use Disorders Identification Test* (AUDIT-C) was used to measure past year alcohol use. The AUDIT-C is a 3-item brief alcohol screen that is used to identify individuals with alcohol use disorders. The scores range from 0–12, with higher scores indicating that a woman’s drinking is affecting her health and safety.

Use of Community Resources—*Use of Community Resources* was measured using the following: “There may or may not be resources in the community that can help women with problems in their relationships and with the abuse. Sometimes women use these resources and sometimes they do not. Which of the following services or people have you used to get help with an abusive partner?” Resources were classified into: a) *Legal resources*: Restraining order/order of protection or other legal assistance; and b) *Domestic violence resources*: Domestic violence advocate, support group, crisis hotline or shelter.

Data Analysis Procedures

Analyses were conducted to determine whether women at high risk for lethal violence differed significantly from women at low risk for lethal violence with respect to victims and abusive partners’ characteristics. Bivariate analysis was conducted using *t*-test and chi-square procedures. Using multivariate binary logistic regression modeling techniques, we tested the independent effects of victim and abusive partners’ characteristics (i.e., socio-demographic characteristics, relationship and abuse-related characteristics, women’s mental and substance misuse, and use of resources) on their risk for experiencing lethal violence. The variables entered into the model were checked for multicollinearity. None of the correlations between variables were above 4.50. An analysis was also conducted to check statistical differences in the risk for lethality for the three sites (i.e., one site in Baltimore and two in the USVI). The differences were not found to be statistically significant. Data were analyzed using both combined and separate models for Black women in Baltimore and Black women in the USVI. Analyses were conducted using SPSS version 19.

Results

Sample Characteristics

The sample included 456 Black women in Baltimore ($n=134$; 29.4%) and in the USVI ($n=322$; 70.6%), with a mean age of 29.2 years. Over half ($n=258$; 56.9%) of the women had a high school education or less. Almost half (49.8%, $n=227$) were unemployed, and

approximately three quarters were in the low income range (74.8%; $n=325$). Black women in Baltimore were significantly more likely than Black women in the USVI region to have a high school education or less (67.7% versus 51.2%), and to be unemployed (56.7% versus 46.9%). Almost half of the women in the study were in a current relationship with the abusive partner (47%; $n=211$). The average age of the abusive partner was 36 years.

Risk Factors for Lethal Violence on the Danger Assessment

Table 1 presents differences between Black women in Baltimore, the US mainland and those in the USVI on risk factors on the *Danger Assessment*. Compared to Black women in Baltimore, Black women in the USVI were more likely to report gun ownership by their intimate partners. Furthermore, Black women in the USVI were 2.19–2.46 times more likely to perceive their partner as a threat to their lives, and to report being actually threatened by their partners compared to Black women in Baltimore. In contrast, Black women in Baltimore were more likely to report socio-demographic risk factors such as having a partner who is unemployed and having a child who did not belong to the abusive partner (Table 2).

Socio-Demographic Characteristics and Risk for Lethal Violence

Socio-demographic characteristics such as women's age, education and their employment did not distinguish between levels of risk for lethal violence among both Black women in Baltimore and those in the USVI; however, in the multivariate analysis, women's age was a significant factor for Black women in Baltimore. Black women in Baltimore who were younger were at increased likelihood of being in the high risk group for lethal violence (Table 3).

Relationship Characteristics and Risk for Lethal Violence

For Black women in Baltimore, there was a strong association between a history of cohabitation with the abusive partner and risk for lethal violence. Compared to women in the low risk group, a higher proportion of women in the high risk group reported histories of cohabitation with their partners (84.1% versus 61.1%; $p<.01$, Table 1). This association remained significant in the multivariate model. A history of cohabitation with the abusive partner significantly increased the likelihood of Black women in Baltimore being at risk for lethal violence victimization ($AOR=5.28$, $p<.05$, Table 3).

Relationship with the abusive partner was significantly associated with risk for lethal violence in the bivariate analysis, but not in multivariate analysis. In the bivariate analysis, Black women in the USVI who were abused by their former non-marital partners (i.e., ex-boyfriends) were more likely to be in the high risk group for lethal violence compared to women in the low risk group (46.3% versus 27.4%; $p<.05$, Table 2).

Women's Abuse-Related Characteristics and Risk for Lethal Violence

Women's perceived fear of their partners was significantly related to them being at high risk for lethal violence. This relationship was significant in both bivariate and multivariate models (Table 2 and Table 3). An increase in the level of fear among Black women in Baltimore was related to 1.51 times increase in the likelihood of women being at high risk

for lethal violence ($p<.05$). More severe injuries were not significantly associated with the risk for lethality in the multivariate analysis (Table 3).

Women's Mental Health/Substance Misuse Problems and Risk for Lethal Violence

In the bivariate analysis, severe PTSD and depression symptoms were significantly related to the risk for lethal violence. The high risk group of Black women in Baltimore and in the USVI had on average, higher scores on the depression and PTSD measures, than women in the low risk group. However, mental health symptoms were not significantly related to the risk for lethality in the multivariate analysis for the Baltimore sample. In the multivariate model for Black women in the USVI, PTSD symptoms significantly increased the likelihood of women being at high risk for lethality ($AOR=1.55$, $p<.01$, Table 3).

Bivariate analysis indicated significant differences between high risk and low risk group on drug and alcohol use. A greater proportion of women in the high risk group than those in the low risk group reported using drugs (18.9% versus 9.5%; $p<.05$, Table 2). The high risk groups also had higher average scores on alcohol use. The relationship between drug/alcohol use and risk for lethality was significant for Black women in Baltimore. A higher percentage of high risk group of Black women in Baltimore reported ever using drugs, when compared to women in the low risk group (27.3% versus 13.3%). Also, Black women in Baltimore had significantly higher scores on alcohol use (Table 2). Drug and alcohol use, however, did not remain significant in the multivariate model (Table 3).

Women's Use of Community Resources and Risk for Lethal Violence

In comparison to the low risk for lethal violence group, a higher proportion of women in the high risk group reported using domestic violence resources (i.e., 30.1–36.4% versus 12.6–15.6% in the low risk group of women in the total and separate samples; $p<.01$, Table 2). A large proportion of women, however, did not report using domestic violence resources despite being at high risk for lethal violence (67.7%–70%). The relationship between use of domestic violence resources and risk for lethal violence was not significant in the multivariate model. Women's use of legal resources was significantly related to the risk for lethal violence both in bivariate and multivariate analyses. Women who reported using resources such as restraining orders or other legal assistance to deal with their abusive partners were more likely to be at high risk for lethal violence ($AOR=2.81$ – 8.27 , $p<.01$, Table 3). This association was strongest for Black women in Baltimore ($AOR=8.27$ versus 2.81 for Black women in the USVI) (Table 3).

Discussion

This study examined characteristics associated with high risk for lethal violence in a sample of Black women in the US mainland (i.e., Baltimore) and the USVI. Among socio-demographic variables, age was identified as a risk factor for Black women in Baltimore, with younger age being associated with an increased risk for lethal violence. This finding corroborates earlier research (national and cross-national) in which younger age was a risk factor for lethal violence (Pratt, Deosaransingh, 1997; Shackelford Mouzos, 2005).

Severe PTSD symptoms were related to the odds of women being at high risk for lethal violence after controlling for socio-demographic variables, depression, drug use, alcohol use, severity of injuries and use of resources. These findings support and build upon prior studies that have suggested a link between PTSD symptoms and women being trapped in dangerous abusive relationships (Edwards et al., 2006; Perez Johnson, 2008). PTSD symptoms may develop due to “chronic traumatization” or “repeated exposure to traumatic stressors (e.g., serious physical assault, psychological abuse in the form of threats) within the same overall context over time (Kaysen, Resick, Wise, 2003; p.247). Constant continuous experiences of battering, stalking, and chronic anticipation of danger create a traumatic context that heightens PTSD symptomatology (Kaysen, Resick, Wise, 2003). The traumatizing environment increases perceptions of danger and subsequent development of PTSD. More specifically, a significant relationship was found between PTSD and risk for lethal violence in the multivariate model for Black women in the USVI.

Studies have identified similar socio-demographic and relationship characteristics as well as mental health problems (PTSD) in abused women from the US Virgin Islands (Maharaj et al., 2008). The severity of partner abuse was not reported nor risks for lethal violence in these studies. However, fear of the abusive partner, partner’s gun ownership, high levels of victim and community tolerance of IPV have been reported in studies of abused women from the Virgin Islands (Le Franc, Samms-Vaughn, Hambleton, Fox, Brown, 2008) and Black women from the US (Kaysen, Resick, Wise, 2003). When these circumstances are coupled with an island environment with limited options for escaping an abusive situation and gaining security and safety, prolonged trauma experiences may help explain PTSD symptoms observed among Black women in the USVI.

Black women in Baltimore with a history of cohabitation with their abusive partners were more likely to be at high risk for lethal violence than were women who never lived with their partners. Most women in the sample reported a non-marital relationship with their abusive partners. Some evidence shows women in non-marital cohabiting relationships incur a higher risk of lethal violence than do married women, due to factors such as low commitment and inability of the partner to exercise control (Shackelford Mouzos, 2005).

Among abuse-related variables, perceived fear of an intimate partner was associated with an increased likelihood of women being at high risk of lethal violence. Fear of an intimate partner indicates a dangerous abusive situation and risk for future violence. A climate of fear is likely to increase maladaptive thinking patterns such as “fear about a random catastrophic event which could strike anytime and one will be unable to prevent it” or “belief that one is powerless to cope with one’s problems in a competent way.” Such thinking patterns inhibit problem-solving and increase denial and avoidance (Calvete, Susana, Este’Vex, 2007). Thus, fear of an abusive partner may affect women’s ability to change their situations and increases their risk for lethal violence.

Specifically, fear among Black women in Baltimore was significantly associated with risk for lethal violence. Regarding severity of IPV, Black women in Baltimore reported more severe psychological abuse experiences than Black women in the USVI. Evidence shows psychological abuse is a strong predictor of fear in violent intimate partner relationships

(Sackett Saunders, 1999; cited in Kaysen, Resick, Wise, 2003). Thus, severe psychological abuse experiences may explain the relationship between perceived fear and risk for lethal violence among Black women in Baltimore.

In this study, findings were particularly noteworthy with respect to the association between use of legal resources and high risk for lethal violence, which has been suggested by some researchers (e.g., Davies, Block, Campbell, 2007). According to Davies and colleagues (2007), women who turn to legal resources are most often severely abused, fearful for their lives, trying to leave their abuser, and are in desperate need of help. Research suggests Black women prefer legal resources over family violence/domestic violence services (Hollenshead et al., 2007; Lipsky, Caetano, Field Larkin, 2006). In our prior work with this sample, of 57% of abused women seeking resources, 41% sought help from legal resources (Lucea et al., 2012). Thus, in our sample the association between use of legal resources and risk for lethal violence may be explained by severe abuse experiences and preference for the use of legal resources in the sample of Black women in Baltimore and in the USVI.

This study used a cross-sectional design which makes it difficult to ascertain causality. Although it is possible that PTSD symptoms and fear may cause women to be at high risk for lethal violence, women who are at high risk for lethal violence are more likely to develop fear and PTSD symptoms for being in a dangerous abusive relationship. For instance, a study by Straus et al. (2009) found that an increase in risk for lethal violence measured by the Danger Assessment instrument was associated with a decrease in mental health functioning (Straus, et al., 2009). A second limitation relates to the generalizability of the study findings beyond Black women in Baltimore and Black women in the USVI. Additionally, our study did not include Black women from other Caribbean or African countries to fully capture the heterogeneous nature of the Black race. Notwithstanding, our findings provide an initial step towards recognizing the importance of assessment of characteristics associated with high risk for LV in two different ethnic groups of Black women. A third limitation is that the findings are based on self-report and could be affected by recall bias or voluntary disclosure.

Conclusion and Implications

This study suggests a woman's intense fear of her partner and severe PTSD symptoms are signs of her being in extreme or severe danger of lethality. Practitioners conducting assessments should pay attention to abused women's level of fear and factors contributing to their overall fear. In addition, it is important to understand coping responses as reflected in efforts to deal with abuse-related stress (e.g., avoidance or alcohol misuse), and risk for lethal violence. Research shows subjective appraisals of a situation as threatening, harmful, challenging, and/or surpassing the individual's resources, makes the experience more stressful for the victim. For example, if a situation is appraised or perceived as detrimental, the associated emotions may include intense fear. Such appraisals are strongly associated with PTSD and depression symptoms (Martinez-Toreya, Bogat, Eye, Levendosky, Davidson, 2009).

Abused women with fear, helplessness and mental health issues may need interventions that address maladaptive appraisals and promote positive coping to enhance psychological well-being. Addressing fear and PTSD symptoms (e.g., avoidance, re-experiencing, and hyperarousal) may be essential for psychological stability, thereby leading to better cooperation with systems that ensure safety and security (Wright Johnson, 2009). Thus, interventions aimed at safety planning for abused women should take into account their ability to cope effectively with the trauma of abuse and their mental health needs.

This study found women who used legal resources were at high risk for lethal violence. Although engagement in the legal system might suggest to practitioners that a woman is safe, involvement in the legal system might be an indication of women being at high risk for lethal violence. Such cases require more aggressive criminal justice measures for women's safety (Davies Block, Campbell, 2007). It appears women in dangerous abusive relationships need intervention plans that integrate victim assistance, legal, and health care services. Interventions need not only focus on controlling partners' abusive behaviors, but also empowering women to keep themselves safe from dangerous abusive partners.

As Black women in the USVI more frequently reported threats of harm and gun ownership by their partners, practitioners should warn women of the risk associated with gun ownership. In addition, more stringent measures should be enforced to restrict abusers' access to firearms. Preventing or reducing the risk for lethal violence among Black women in Baltimore and in the USVI may also call for the development of macro-level interventions addressing socio-economic factors such as unemployment, poverty, education, and access to care. Future policies and programs are needed to address contextual, cultural, social, legal and other factors that might be relevant for tailoring safety programs for high risk groups of Black women in Baltimore and in the USVI. It is necessary to enhance provisions for women's safety by holding perpetrators accountable, providing women access to resources and empowering them to meet their own needs. Theoretically, the study findings underscore the importance of individual (e.g., age, PTSD symptoms), relationship (e.g., cohabitation with the abusive partner) and community level factors (e.g., resources) in assessing women's risk for lethal violence. Future research may consider investigating additional individual and environmental factors that are associated with women's risk for being victimized by lethal violence. Identification of risk factors may help prevent and reduce the risk of intimate partner lethal violence among Black women.

Acknowledgments

This study was supported by a subcontract with the Caribbean Exploratory NIMHD Research Center of Excellence, University of the Virgin Islands (P20MD002286). Dr. Sabri was also supported by NICHD (T32HDO64428) and Dr. Stockman was also supported by NIDA (K01DA031593) and NIMHD (L60MD003701).

References

- Aldridge ML, Browne KD. Perpetrators of spousal homicide: A review. *Trauma, Violence Abuse*. 2003; 4(3):265–276. [PubMed: 14697126]
- Azziz-Baumgartner E, McKeown L, Melvin P, Dang Q, Reed J. Rates of femicide in women of different races, ethnicities, and places of Birth: Massachusetts, 1993–2007. *Journal of Interpersonal Violence*. 2011; 26(5):1077–1090. [PubMed: 20522891]

- Bailey JE, Kellermann AL, Somes G W, Banton JG, Rivara FP, Rushforth NP. Risk factors for violent death of women in the home. *Archives of Internal Medicine*. 1997; 157(7):777–782. [PubMed: 9125010]
- Benson ML, Wooldredge J, Thistlethwaite AB, Fox GL. The correlation between race and domestic violence is confounded with community context. *Social Problem*. 2004; 51(3):326–342.
- Bent-Goodley TB. Eradicating domestic violence in the African American community: A literature review and action agenda. *Trauma, Violence, Abuse*. 2001; 2(4):316–330.
- Bent-Goodley TB. Health disparities and violence against women: why and how cultural and societal influences matter. *Trauma Violence Abuse*. 2007; 8(2):90–104. [PubMed: 17545567]
- Black, MC.; Basile, KC.; Breiding, MJ.; Smith, SG.; Walters, ML.; Merrick, MT.; Chen, J.; Stevens, MR. 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.
- Breitman N, Shackelford TK, Block CR. Couple age discrepancy and risk of intimate partner homicide. *Violence and Victims*. 2004; 19(3):321–342. [PubMed: 15631284]
- Calvete E, Susana C, Este'Vez A. Cognitive and coping mechanisms in the interplay between intimate partner violence and depression. *Anxiety, Stress, Coping*. 2007; 24(4):369–382. [PubMed: 17999237]
- Campbell JC. Helping women understand their risk in situations of intimate partner violence. *Journal of Interpersonal Violence*. 2004; 19(12):1464–1477. [PubMed: 15492060]
- Campbell JC, Glass N, Sharps P, Laughon K, Bloom T. Intimate partner homicide: Review and implications of research and policy. *Trauma, Violence Abuse*. 2007; 8(3):246–269. [PubMed: 17596343]
- Campbell JC, Webster D, Koziol-McLain J, Block CR, Campbell D, Curry MA, Gary F, Sachs C, Sharps PW, Wilt S, Manganello J, Xu X. Risk factors for femicide in abusive relationships: Results from a multi-site case control study. *American Journal of Public Health*. 2003; 93:1089–1097. [PubMed: 12835191]
- Campbell JC, Webster DW, Glass N. The danger assessment: Validation of a lethality risk assessment instrument for intimate partner femicide. *Journal of Interpersonal Violence*. 2009; 24(4):653–674. [PubMed: 18667689]
- Catalano, S.; Smith, E.; Snyder, H.; Rand, M. Female victims of violence. 2009. Retrieved from <http://bjs.ojp.usdoj.gov/content/pub/pdf/fvv.pdf>
- Cattaneo LB, Goodman LA. Risk factors for reabuse in intimate partner violence: A cross-disciplinary critical review. *Trauma, Violence, Abuse*. 2005; 6(2):141–175. [PubMed: 15753198]
- Central Intelligence Agency. [Accessed October 14th, 2013] The World Fact book. 2013. Available at: <https://www.cia.gov/library/publications/the-world-factbook/geos/vq.html>
- Cheng D, Horon IL. Intimate partner homicide among pregnant and post-partum women. *Obstet Gynecol*. 2010; 115(6):1181–1186. [PubMed: 20502288]
- Davies K, Block CR, Campbell J. Seeking help from the police: Battered women's decisions and experiences. *Criminal Justice Studies*. 2007; 20(1):15–41.
- Eastman, JS. Homicide among intimate partners: Differences in gender, race, relationship type, and weapon use. ETD Collection for University of Texas, El Paso. 2006. Paper AAI1439464. <http://digitalcommons.utep.edu/dissertations/AAI1439464>
- Edwards TA, Houry D, Kembell RS, Harp SE, McNutt L, Straus H, Rhodes KV, Cerulli C, Kaslow NJ. Stages of change as a correlate of mental health symptoms in abused, low-income African American women. *Journal of Clinical Psychology*. 2006; 62(12):1531–1543. [PubMed: 16897735]
- Dawson M, Gartner R. Differences in characteristics of intimate femicides. *Homicide Studies*. 1998; 2(4):378–399.
- Dobash RE, Dobash RP, Cavanagh K, Medina-Ariza J. Lethal and nonlethal violence against an intimate female partner comparing male murders to nonlethal abusers. *Violence Against Women*. 2007; 13(4):329–353. [PubMed: 17420514]
- Dugan L, Nagin DS, Rosenfield R. Exposure reduction or retaliation? The effects of domestic violence resources on intimate partner homicide. *Law Society Review*. 2003; 37(1):169–196.

- Frye V, Hosein V, Waltermaurer E, Blanfy S, Wilt S. Femicide in New York City 1990 to 1999. *Homicide Studies*. 2005; 9(3):204–228.
- Heckert DA, Gondolf EW. Battered women's perceptions of risk versus risk factors and instruments in predicting repeat reassault. *Journal of Interpersonal Violence*. 2004; 19(7):778–800. [PubMed: 15186536]
- Hollenshead JH, Dai Y, Ragsdale MK, Massey E, Scott R. Relationship between two types of help seeking behavior in domestic violence victims. *Journal of Family Violence*. 2006; 21:271–279.
- Kaysen D, Resick PA, Wise D. Living in danger: The impact of chronic traumatization and the traumatic context on Posttraumatic Stress Disorder. *Trauma, Violence, Abuse*. 2003; 4(3):247–264. [PubMed: 14697125]
- Yriacou DN, Anglin D, Taliaferro E, Stone S, Tubb T, Linden JA, Muelleman R, Barton E, Kraus JF. Risk factors for injury to women from domestic violence. *The New England Journal of Medicine*. 1999 1892–1898.
- Le Franc E, Samms-Vaughan M, Hambleton I Fox K, Brown D. Interpersonal violence in three Caribbean countries: Barbados, Jamaica, and Trinidad and Tobago. *Rev Panam Salud Publica*. 2008; 24(6):409–421. [PubMed: 19178780]
- Lipsky S, Caetano R, Field CA, Bazargan S. The role of alcohol use and depression in intimate partner violence, among black and Hispanic patients in an urban emergency department. *American Journal of Drug and Alcohol Abuse*. 2006; 31(2):225–242. [PubMed: 15912713]
- Lipsky S, Caetano R, Field CA, Larkin GL. The role of intimate partner violence, race, and ethnicity in help-seeking behaviors. *Ethnicity and Health*. 2006; 11(1):81–100. [PubMed: 16338756]
- Logan TK, Shannon L, Walker R, Faragher TM. Protective orders: Questions and conundrums. *Trauma, Violence, Abuse*. 2006; 7(3):175–205. [PubMed: 16785286]
- Lucea MB, Stockman JK, Mana-Ay M, Bertrand D, Callwood GB, Coverston CR, Campbell DW, Campbell JC. Factors influencing resource use by African American and African Caribbean women disclosing intimate partner violence. *Journal of Interpersonal Violence*. 2012 in press.
- Maharaj RG, Alexander C, Bridglal CH, Edwards A, Mohammed H, Rampaul TA, Sanchez S, Tanwing GP, Thomas K. Abuse and mental health disorders among women at walk-in clinics in Trinidad: A cross-sectional study. *BMC Family Practice*. 2010; 11(26):1–6. [PubMed: 20051110]
- Martinez-Toreya C, Bogat GA, Eye AV, Levendosky AA, Davidson WS. Women's appraisals of intimate partner violence stressfulness and their relationship to depressive and posttraumatic stress disorder symptoms. *Violence and Victims*. 2009; 24(6):707–722. [PubMed: 20055210]
- Maryland Department of Planning. [Accessed October 14, 2013] Maryland State Data Center. 2013. Available at: <http://planning.maryland.gov/msdc/home.shtml>
- McCabe, K. Caribbean immigrants in the United States. 2011. Retrieved from <http://www.migrationinformation.org/usfocus/display.cfm?ID=834>
- McCree, DH.; Jones, KT.; O'Leary, A. African Americans and HIV/AIDS: Understanding and addressing the epidemic. New York: Springer; 2010.
- McFarlane J, Malecha A, Watson K, Batten E, Hall I, Smith S. Protection orders and intimate partner violence: An 18-month study of 150 Black, Hispanic, and White women. *American Journal of Public Health*. 2004; 94(4):613–618. [PubMed: 15054014]
- Mize KD, Shackelford TK, Shackelford VA. Hands-on killing of an intimate partner as a function of sex and relationship status/stats. *Journal of Family Violence*. 2009; 24:463–470.
- National Institute of Justice. Causes and consequences of intimate partner violence. 2007. Retrieved from <http://www.nij.gov/topics/crime/intimate-partner-violence/causes.htm>
- Reckdenwald A, Parker KF. Understanding gender-specific intimate partner homicide: A theoretical and domestic service-oriented approach. *Journal of Criminal Justice*. 2010; 39:951–958.
- PBS. [Accessed October 14th, 2013] The learning in context-Baltimore City statistics. 2011. Available at: http://www.pbs.org/pov/learning/photo_gallery_background.php?photo=4#_UlxZtIhQ4M
- Pratt C, Deosaransingh K. Gender differences in homicide in Contra Costa county, California: 1982–1993. *American Journal of Preventative Medicine*. 1997; 13(6 Suppl):19–24.
- Paulozzi LJ, Saltzman LE, Thompson MP, Holmgreen P. Surveillance for homicide among intimate partners-United States, 1981–1998. *CDC MMWR, Surveillance Summaries*. 2001; 50(SS03):1–16.

- Perez S, Johnson DM. PTSD compromises battered women's future safety. *Journal of Interpersonal Violence*. 2008; 23(5):635–651. [PubMed: 18272729]
- Sackett LA, Saunders DG. The impact of different forms of psychological abuse on battered women. *Violence and Victims*. 1999; 14(10):105–117. [PubMed: 10397629]
- Sampson, Robert J.; William, Julius Wilson. "Toward a Theory of Race, Crime, and Urban Inequality." In: Hagan, John; Peterson, Ruth D., editors. *Crime and Inequality*. Stanford, CA: Stanford University Press; 1995.
- Sato-DiLorenzo A, Sharps PW. Dangerous intimate partner relationships and women's mental health and health behaviors. *Issues in Mental Health Nursing*. 2007; 28:837–848. [PubMed: 17729169]
- Shackelford TK. Cohabitation, marriage, and murder: woman-killing by male romantic partners. *Aggressive Behavior*. 2001; 27:284–291.
- Shackelford TD, Mouzos J. Partner killing by men in cohabiting and marital relationships: A comparative, cross-national analysis of data from Australia and the United States. *Journal of Interpersonal Violence*. 2005; 20(10):1310–1324. [PubMed: 16162491]
- Sharps P, Campbell JC, Campbell D, Gary F, Webster D. Risky mix: Drinking, drug use, and homicide. *NIJ Journal*. 2003; 250:8–13.
- Sharps PW, Campbell JC, Campbell DW, Gary FA, Webster DW. The role of alcohol use in intimate partner femicide. *The American Journal on Addictions*. 2001; 10:122–135. [PubMed: 11444155]
- Sharps PW, Koziol-McLain J, Campbell J, McFarlane J, Sachs C, Xu X. Health care providers' missed opportunities for preventing femicide. *Preventive Medicine*. 2001; 33(5):373–380. [PubMed: 11676577]
- Straus H, Cerulli C, McNutt LA, Rhodes KV, Conner KR, Kemball RS, Kaslow NJ, Houry D. Intimate partner violence and functional health status: Associations with severity, danger, and self-advocacy behaviors. *Journal of Women's Health*. 2009; 18(5):625–631.
- Taft CT, Bryant-Davis T, Woodward HE, Tillman S, Torres SE. Intimate partner violence against African American women: An examination of the socio-cultural context. *Aggression and Violent Behavior*. 2009; 14:50–58.
- Thomas KA, Dichter ME, Matejkowski J. Intimate vs. non-intimate partner murder: A comparison of offender and situational characteristics. *Homicide Studies*. 2011; 15:291–311.
- United Nations Office on Drug and Crimes. Global study on homicide. 2011. Retrieved from http://www.unodc.org/documents/data-and-analysis/statistics/Homicide/Globa_study_on_homicide_2011_web.pdf
- Vittes KA, Sorenson SB. Restraining orders among victims of intimate partner Homicide. *Injury Prevention*. 2008; 14:191–195.
- Weinsheimer RL, Schermer CR, Malcoe LH, Balduf LM, Bloomfield LA. Severe intimate partner violence and alcohol use among female trauma patients. *The Journal of Trauma*. 2005; 58:22–29. [PubMed: 15674145]
- Weis AN, Tolman RM, Saunders DG. Assessing the risk of severe domestic violence: The importance of survivors' predictions. *Journal of Interpersonal Violence*. 2000; 15(1):75–90.
- West CM. Black women and intimate partner violence: new directions for research. *Journal of Interpersonal Violence*. 2004; 19(12):1487–1493. [PubMed: 15492062]
- Wilson, WJ. *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy*. Chicago: University of Chicago Press; 1987.
- William OJ, Oliver W, Pope M. Domestic violence in the African American community. *Journal of Aggression, Maltreatment, Trauma*. 2008; 16(3):229–237.
- Wright CV, Johnson DM. Correlates for legal help-seeking: Contextual factors for battered women shelter. *Violence and Victims*. 2009; 24(6):771–785. [PubMed: 20055214]

Table 1
Differences in Danger Assessment (DA) risk factors between Black women in Baltimore and in the USVI

	Risk factors on the DA N (%) of Yes Responses	Black Women in the US (N=134)	Black Women in the USVI (N=322)	OR (95% CI)	p
1.	Increase in severity or frequency of physical violence	16 (11.1)	35 (9.6)	1.17 (0.53–2.57)	.60
2.	Partner owned a gun	12 (8.4)	77 (20.9)	2.86 (1.35–6.06)	.01
3.	Woman left the partner after living together	70 (49.6)	139 (39.3)	0.86 (0.51–1.45)	.57
4.	Partner unemployed	65 (46.1)	94 (26.0)	0.41 (0.25–0.67)	.00
5.	Partner used a weapon or threatened her with a weapon	31 (21.5)	62 (16.8)	0.64 (0.30–1.36)	.21
6.	Partner threatened to kill her	33 (23.1)	92 (25.1)	2.46 (1.21–5.03)	.01
7.	Partner avoided being arrested for domestic violence	57 (40.4)	98 (27.1)	0.79 (0.44–1.41)	.42
8.	Woman has a child that is not his	74 (51.7)	134 (36.5)	0.60 (0.37–0.97)	.03
9.	Partner forced to have sex	41 (28.1)	91 (24.9)	1.07 (0.59–1.94)	.83
10.	Partner tried to choke her	40 (27.8)	72 (19.5)	0.88 (0.45–1.73)	.71
11.	Partner used illegal drugs	40 (27.8)	71 (19.5)	0.80 (0.45–1.73)	.46
12.	Partner was an alcoholic or a problem drinker	41 (28.7)	67 (18.3)	0.59 (0.33–1.06)	.07
13.	Partner controlled most or all of her daily activities	38 (26.6)	73 (19.8)	1.18 (0.61–2.28)	.61
14.	Partner was violently and constantly jealous	74 (51.4)	133 (36.2)	0.56 (0.29–1.04)	.06
15.	Women was beaten while pregnant	24 (16.7)	59 (16.0)	1.31 (0.66–2.60)	.43
16.	Partner threatened or tried to commit suicide	29 (20.3)	41 (11.01)	0.54 (0.26–1.11)	.09
17.	Partner threatened to harm children	7 (4.9)	16 (4.3)	1.28 (0.36–4.49)	.70
18.	Woman believed partner was capable of killing her	32 (22.4)	97 (27.2)	2.19 (1.11–4.32)	.02
19.	Partner followed or spied on her	43 (30.1)	80 (21.8)	0.81 (0.42–1.56)	.53
20.	Woman threatened or tried to commit suicide	25 (17.4)	58 (15.8)	1.06 (0.55–2.02)	.85

Note: Percentages represent percentages of “yes” responses to each item (e.g., 11.1% of Black women in Baltimore vs 9.6% of women in the USVI reported increase in severity or frequency of physical violence over the past year). The odd ratios and confidence intervals (OR and CI) were calculated using logistic regression with the DA items as independent variables and the group of women as the dependent variable; African American was the reference group

Table 2

Sample Characteristics by Lethal Violence Risk Group among Black women in Baltimore and in the USVI

Victim Characteristics	Total Sample (N=456)		Black Women in Baltimore (N=134)		Black Women in the USVI (N=322)		P
	High (N=127)	Low (N=329)	High (N=44)	Low (N=90)	High (N=83)	Low (N=239)	
Age (M, SD)	28.41 (7.49)	29.56 (9.26)	29.82 (7.69)	31.26 (10.49)	28.92 (8.68)	27.66 (7.33)	0.20
Education N (%)							
Did not graduate high school	25 (19.7)	49 (15.0)	10 (22.7)	19 (21.3)	15 (18.1)	30 (12.7)	
High school graduate	56 (44.1)	128 (39.3)	22 (50.0)	39 (43.8)	34 (41.0)	89 (37.6)	
Some college	26 (20.5)	96 (29.4)	8 (18.2)	20 (22.5)	18 (21.7)	76 (32.1)	
College graduate	20 (15.7)	53 (16.3)	4 (9.1)	11 (12.4)	16 (19.3)	42 (17.7)	0.28
Employment N (%)							
Employed	59 (46.5)	170 (51.7)	17 (38.6)	41 (45.6)	42 (50.6)	129 (54.0)	
Unemployed	68 (53.5)	159 (48.3)	61.4 (27)	49 (54.4)	41 (49.4)	110 (46.0)	0.59
Relationship with the abuser N (%)							
Spouse/Common Law	9 (7.2)	41 (12.7)	4 (9.3)	12 (13.3)	5 (6.1)	29 (12.4)	
Ex-Spouse	8 (6.4)	17 (5.2)	5 (11.6)	4 (4.4)	3 (3.7)	13 (5.6)	
Boyfriend	37 (29.6)	124 (38.3)	10 (23.3)	15 (16.7)	27 (32.9)	109 (46.6)	0.01[‡]
Ex-boyfriend	54 (43.2)	111 (34.3)	16 (37.2)	47 (52.2)	38 (46.3)	64 (27.4)	
Other	17 (13.6)	31 (9.6)	8 (18.6)	2 (13.3)	9 (11.0)	19 (8.1)	
Ever lived in the same household with the abusive partner N (%)							
Yes	89 (70.1)	198 (60.6)	37 (84.1)	55 (61.1)	52 (62.7)	143 (60.3)	0.71
No	38 (29.9)	129 (39.4)	7 (15.9)	35 (38.9)	31 (37.3)	94 (39.7)	
Severity of Injuries (M, SD)	3.49 (1.45)	2.88 (1.61)	3.65 (1.21)	2.95 (1.65)	3.41 (1.56)	2.85 (1.60)	0.01
Mental Health Problems (M, SD)							
PTSD (0–4)	1.83 (1.53)	0.82 (1.22)	1.57 (1.48)	1.02 (1.19)	1.96 (1.55)	0.75 (1.22)	0.00

Victim Characteristics	Total Sample (N=456)		Black Women in Baltimore (N=134)		Black Women in the USVI (N=322)		P
	High (N=127)	Low (N=329)	High (N=44)	Low (N=90)	High (N=83)	Low (N=239)	
Depression (0-29)	12.4(6.95)	9.63(5.86)	12.8(6.56)	10.8(5.98)	12.15(7.17)	9.17(5.75)	0.00
Drug Use N (%)							
Ever used drugs	24 (18.9)	31(9.5)	12(27.3)	12 (13.3)	12 (14.5)	19 (8.0)	.08
Never used drugs	103 (81.1)	297(90.5)	32(72.7)	78 (86.7)	71 (85.5)	219(92.0)	
Alcohol Use (M, SD)	1.69(2.33)	1.22 (1.85)	2.37(2.91)	1.43 (1.92)	1.33 (1.87)	1.14 (1.82)	.44
Severity of IPV (M,SD)							
Physical (.00-53.9)	10.7 (14.0)	3.46 (6.48)	13.1 (16.7)	3.99(7.89)	9.45 (12.3)	3.27(5.87)	0.00
Sexual (.00-11.5)	1.49(2.91)	0.21(0.83)	1.49(3.30)	0.27(1.05)	1.49 (2.71)	0.19(0.73)	0.00
Psychological (.00-71)	42.6(14.4)	31.8(15.2)	44.2(14.7)	32.3(17.2)	41.8(14.3)	31.6(14.4)	0.00
Number of Types of IPV N(%)							
One type	11 (8.7)	120 (36.5)	5(11.4)	39(43.3)	6(7.2)	81(33.9)	
Two types	45 (35.4)	141 (42.9)	13(29.5)	33(36.7)	32 (38.6)	108(45.2)	.00
Three types	71 (55.9)	68 (20.7)	26 (59.1)	18(20)	45 (54.2)	50 (20.9)	
Women's perceived fear of the abusive partner (M,SD)	2.71 (1.45)	1.89 (1.66)	2.95 (1.34)	1.94 (1.71)	2.57 (1.49)	1.87 (1.64)	.001
Use of Domestic Violence Resources N(%)							
Yes	41 (32.3)	44 (13.4)	16 (36.4)	14 (15.6)	25 (30.1)	30(12.6)	0.01
No	86 (67.7)	285 (86.6)	28(63.6)	76(84.4)	58(69.9)	209(87.4)	
Use of Legal Resources N (%)							
Yes	92 (72.4)	101 (30.7)	38 (86.4)	38 (42.2)	54 (65.1)	63 (26.4)	0.00
No	35 (27.6)	228 (69.3)	6(13.6)	52 (57.8)	29 (34.9)	176(73.6)	
Abusers' Age (M, SD)	35.32 (9.61)	35.73 (10.02)	35.44 (8.89)	35.81(10.6)	35.26 (10.03)	35.70 (9.79)	0.74

Victim Characteristics	Total Sample (N=456)		Black Women in Baltimore (N=134)		Black Women in the USVI (N=322)		P
	High (N=127)	Low (N=329)	High (N=44)	Low (N=90)	High (N=83)	Low (N=239)	
Abusers' Education N (%)							
Did not graduate high school	62 (48.8)	105 (32.9)	21 (47.7)	35 (39.3)	41 (49.4)	70 (30.4)	0.02
High school graduate	44 (34.6)	133 (41.7)	18 (40.9)	39 (43.8)	26 (31.3)	94 (40.9)	
Some college	14 (11.0)	54 (16.9)	3(6.8)	8 (9.0)	11 (13.3)	46 (20.0)	
College graduate	7 (5.5)	27 (8.5)	2 (4.5)	7 (7.9)	5 (6.0)	20 (8.7)	
Abusers' Employment N (%)							
Most of the time or all the time	51 (40.5)	173 (54.9)	12 (27.3)	40(44.4)	39 (47.6)	133(59.1)	0.07
Never, Very seldom, some of the Time	75 (59.5)	142 (45.1)	32(72.7)	50(55.6)	43 (52.4)	92 (40.9)	

† Note: 1–2 cells have expected count less than 5; IPV refers to intimate partner violence; Black women in Baltimore and in the Virgin Islands did not significantly differ in the scores on the danger assessment (DA; $p=0.13$). However, Black women in Baltimore had higher mean score than the Black women in the Virgin Islands on the DA (24.91 versus 11.61). Women who scored higher than 13 on the DA were classified as being at high risk for LV, and those who scored 13 or below, were classified in the low risk group.

Table 3
 Factors Independently Associated with Risk for Lethal Violence among Black women in Baltimore and in the USVI

<i>Independent Variables</i>	Total Sample (N=456)		US (N=134)		USVI (N=322)	
	<i>AOR (95% CI)</i>	<i>P</i>	<i>AOR (95% CI)</i>	<i>P</i>	<i>AOR (95% CI)</i>	<i>P</i>
SOCIO-DEMOGRAPHIC CHARACTERISTICS						
Victims' Age	0.97 (0.94–1.00)	0.08	0.91 (0.84–0.99)	0.02	0.98 (0.94–1.02)	0.31
Abusers' Education N (%)						
Did not graduate high school (Ref)						
High school graduate	0.59 (0.28–1.27)	0.18	0.46 (0.07–3.17)	0.43	0.59 (0.24–1.46)	0.25
Some college or higher	0.55 (0.29–1.01)	0.05	0.55 (0.15–1.97)	0.36	0.46 (0.21–1.01)	0.05
Abusers' Employment N (%)						
Unemployed or employed some time (Ref)						
Employed most or all the time	0.60 (0.35–1.05)	0.07	0.31 (0.09–1.04)	0.05	0.83 (0.42–1.67)	0.61
RELATIONSHIP CHARACTERISTICS						
Cohabited with the abusive partner	1.28 (0.72–2.29)	0.41	5.28 (1.33–20.99)	0.01	0.83 (0.41–1.67)	0.60
Relationship with the abuser						
Spouse/Common Law (Ref)						
Ex-Spouse	2.09 (0.64–6.75)	0.22	1.78 (0.25–12.75)	0.56	1.98 (0.39–10.08)	0.41
Boyfriend	1.74 (0.61–4.94)	0.29	0.41 (0.05–3.12)	0.38	3.39 (0.83–13.91)	0.09
Ex-boyfriend	1.17 (0.40–3.36)	0.77	0.64 (0.08–5.43)	0.68	1.23 (0.30–5.04)	0.77
Other	2.02 (0.53–7.66)	0.30	3.58 (0.30–42.48)	0.31	1.73 (0.25–11.97)	0.57
ABUSE-RELATED CHARACTERISTICS						
Perceived fear of abusive partner	1.19 (1.01–1.43)	0.04	1.51 (1.03–2.22)	0.03	1.10 (0.88–1.38)	0.39
Severity of Injuries	1.13 (0.95–1.36)	0.17	0.95 (0.62–1.47)	0.82	1.21 (0.98–1.51)	0.08
WOMEN'S MENTAL HEALTH AND SUBSTANCE MISUSE						
PTSD	1.29 (1.05–1.59)	0.02	0.74 (0.44–1.21)	0.23	1.55 (1.21–1.98)	0.00

<i>Independent Variables</i>	Total Sample (N=456)		US (N=134)		USVI (N=322)	
	AOR (95% CI)	P	AOR (95% CI)	P	AOR (95% CI)	p
Depression	1.03 (0.98–1.07)	0.23	1.08 (0.97–1.20)	0.18	1.03 (0.98–1.09)	0.28
Drug Use	1.13-0.52–2.47)	0.76	0.73 (0.15–3.43)	0.69	1.28 (0.42–3.93)	0.66
Alcohol use	1.08 (0.95–1.25)	0.22	1.26 (0.99–1.59)	0.05	1.00 (0.83–1.22)	0.96
USE OF COMMUNITY RESOURCES						
Use of domestic violence resources	1.61 (0.84–3.10)	0.15	1.47 (0.41–5.29)	0.55	2.16 (0.90–5.19)	0.08
Use of legal resources	4.20 (2.38–7.40)	0.00	8.27 (2.22–30.75)	0.00	2.81 (1.39–5.66)	0.00

Note: Women who scored higher than 13 on the DA were classified as being at high risk for LV, and those who scored 13 or below, were classified in the low risk group for the dichotomous LV dependent variable.