Effect of an In-Clinic IPV Advocate Intervention to Increase Help Seeking, Reduce Violence, and Improve Well-Being

By: Ann L. Coker, Paige H. Smith, Daniel J. Whitaker, Brenda Le, Timothy N. Crawford, Vicki C. Flerx

Coker, A.L., Smith, P.H., Whitaker, D.J., Le B., Crawford, T.N., Flerx, V.C. (2012). Effect of an in-clinic IPV advocate intervention to increase help seeking, reduce violence and improve well-being. *Violence Against Women, 18(1)*,118-31.

Abstract:

This quasi-experimental study investigated the efficacy of clinic-based advocacy for intimate partner violence (IPV) to increase help seeking, reduce violence, and improve women's well-being. Eligible and consenting women attending one of six selected clinics in the rural Southern United States were assessed for IPV. Consenting women disclosing IPV were offered either an in-clinic advocate intervention or usual care, depending on the clinic they attended and were followed for up to 24 months. Over follow-up time both IPV scores and depressive symptoms trended toward greater decline among women in the advocate intervention clinics relative to the usual care (business card referral only).

Keywords: abuse | depression | evaluation | health care | intervention | women | intimate partner violence

Article:

Introduction

Intimate partner violence (IPV) is a health threat that meets most of the disease-specific requirements for screening (Cole, 2000). IPV is common (lifetime prevalence of at least 25%) and has significant consequences, including depression, posttraumatic stress disorder (PTSD), substance abuse, and homicide or suicide (Bonomi et al., 2006; Campbell, 2002; Campbell & Lewandowski, 1997; Plichta, 2004). Valid screening tools exist to identify victims of IPV (Brown, Lent, Schmidt, & Sas, 2000; Coker, Pope, Smith, Sanderson, & Hussey, 2001; Feldhaus et al., 1997;McFarlane, Parker, Soeken, & Bullock, 1992; Sherin, Sinacore, Li, Zitter, & Shakil, 1998) A growing literature indicates that screening is feasible in busy clinic settings (Coker et

al., 2007) and that screening is acceptable to the majority of women (Arias, Lynberg, Simon, Kresnow, & Shelley, 2004).

A remaining question to be answered before the health care community universally implements IPV screening is whether effective clinic-based interventions exist to reduce the health threat posed by IPV. Advocacy and counseling are common components of shelter services that have been used for decades, yet few trials have evaluated the short- and longer-term efficacy of such interventions. Although many clinics and hospitals have services in place for IPV survivors, few prospective intervention trials have evaluated the efficacy of such interventions to improve health and safety for women. Two such trials in prenatal (McFarlane, Soeken, & Wiist, 2000) and primary care (McFarlane, Groff, O'Brien, & Watson, 2006) settings found that although IPV scores declined over time for up to 24 months among those screened, scores did not differ by two interventions implemented: Giving a wallet-sized card with local services described or individualized counseling and safety planning. In contrast, a large (N = 1,044) randomized controlled trial of pregnant women experiencing IPV reported that women randomized to a individually tailored counseling intervention were less likely to experience recurrent IPV during pregnancy or postpartum and the intervention was associated with a reduction in preterm births (Kiely, El-Mohandes, El-Khorazaty, & Gantz, 2010). A small randomized clinical trial conducted in urban Chinese community clinics found that an intensive advocate intervention reduced depressive symptoms in the short yet not in the longer term when compared with those receiving usual community referrals (Tiwari et al., 2010).

Here we report on the efficacy of an in-clinic IPV advocacy intervention on help seeking, IPV continuation, and physical and mental well-being. All clinics in the study conducted IPV assessments. Some clinics (usual care) provided referrals to external IPV agencies for women who were assessed as positive for IPV; others had an IPV advocate onsite for immediate, face-to-face counseling and support for women who were assessed as positive for IPV. We hypothesized that the in-clinic IPV advocate would increase a range of help-seeking behaviors and over time reduce violence experienced. Furthermore, relative to the control clinics, those in the advocate intervention clinics were hypothesized to have fewer depressive symptoms, including suicidal ideation, fewer medical care visits, and better self-perceived physical and mental health over time.

Methods

Selection of Participating Clinics

The current study employed a quasi-experimental design to evaluate the efficacy of having an IPV advocate in the clinic for immediate consult following a positive IPV assessment compared to the usual practice of referring women to an external IPV advocacy agency. Randomization of the intervention was done at the clinic level rather than the individual level. All clinics were located in the service region of the Pee Dee Coalition Against Domestic Violence and Sexual

Assault (hereafter “the coalition”). Clinics were recruited to participate if they (a) were located in the referral range of the coalition, (b) provided primary care to lower-income women, (c) had a patient volume of at least 1,000 women per year, and (d) were willing to participate. Clinics were allocated to the in-clinic advocate intervention versus the usual care such that there would be similar numbers of patients in the intervention and usual care groups.

After intervention allocation, the staff at each clinic were oriented and trained by the project manager and principal investigator according to the specific intervention allocated to their clinic. This training included general education on IPV, instruction on how to conduct and score the assessment tool, and instruction regarding how to make referrals for women who screen as IPV positive (Smith, Danis, & Helmick, 1998). To maintain high screening and referral rates, the project manager met with nursing staff at the clinics on a monthly basis to review clinic-specific assessment rates and to discuss any problems with study implementation.

IPV Assessment

The process for IPV assessment has been described in detail elsewhere (Coker et al., 2007). Briefly, nurses described the study to eligible women. Eligibility was defined based on age 18 or older, in an intimate relationship in the past 5 years, and mentally competent to provide consent. Consenting women were first asked to think about their current male partner or their most recent male partner if they did not have a current partner. *Partner* was defined as “someone you have been married to, dated, or had a sexual relationship with.” Women were then asked a series of questions assessing psychological battering using a modified version of the Women’s Experience With Battering Scale (WEB; Smith, Earp, & DeVellis, 1995; Smith, Smith, & Earp, 1999;Smith, Tessaro, & Earp, 1995). The following question from CDC’s Behavioral Risk Factor Surveillance System (BRFSS) was used to assess both physically and sexually violent acts by a partner (current or recent): “Has any partner been physically violent toward you? By violent, I mean did he punch, kick, hit, shove, slap, choke or physically attack you in other ways that could result in an injury. It also means being made to do sexual acts when you don’t want to.” Finally, women were asked about psychological and physical abuse by any partner in the past 5 years. Women who were accompanied by others during their clinic visit who did not leave the room were not assessed for safety reasons. The charts for these women were flagged and nurses attempted assessment on a subsequent visit. Nurses asked the assessment questions of consenting women because of generally low reading levels.

The assessment results for each woman were coded as either IPV positive (IPV+) or IPV negative (IPV–). Women who were assessed as positive for any form of IPV within the past 5 years were offered the advocate intervention in the intervention clinics or external referral in the usual care clinics. Based on these results, women who were assessed as IPV+ could be distinguished as either currently in an abusive relationship (hereafter “current”) or in an abusive relationship within the past 5 years (hereafter “recent”).

Nurses also invited women to participate in a follow-up study to evaluate the effectiveness of an intervention study for women who were assessed as IPV+. Women were told that they would be interviewed every 6 months for up to 24 months. Women with an interest in the study were contacted within 2 weeks of the initial IPV assessment by trained research staff for the baseline interview. This contact was made primarily by phone, using one of the safe phone numbers women provided. If there was no safe phone number, women were contacted for interviews at their next clinic appointment. Informed consent was obtained after staff explained the procedures, risks, and benefits to the follow-up study. Written consent for assessment and subsequent interviews was obtained. The Institutional Review Boards of the University of South Carolina, the University of Texas Health Science Center, and the Centers for Disease Control and Prevention approved this protocol.

Description of the Interventions

Usual care

In the "usual care" (or comparison) arm, women who were assessed as IPV+ were given the business card of their health care provider with the coalition hotline number.

Clinic-based IPV advocate

All women who were assessed as IPV+ in clinics allocated to the intervention were encouraged by the nurse to meet with the advocate immediately after their appointment. Women who had limited time for their visits were encouraged to meet briefly with the advocate to make an appointment for a subsequent visit. The advocate was available during clinic hours to provide needs assessment, safety planning, education, support, and referral/facilitated linkage to coalition services and other community services the woman may need. Project funds covered the salaries for two clinic-based IPV advocates. To protect confidentiality, women did not pass through any public areas on the way to the advocate's private office. Furthermore, the nurse introduced the patient to the advocate using a first name. Women in the intervention arm also received the business card of their health care provider with the coalition hotline number.

Evaluation Plan

To evaluate the impact of the advocate intervention on women's selected outcomes, including help-seeking behaviors and continued IPV, women who were assessed as IPV+ were invited into a longitudinal cohort study to prospectively assess these outcomes. Our analysis was based on self-report of outcomes over time. We conducted an intent-to-treat analysis in which outcomes were assessed independent of whether women receiving care in clinics with the advocate intervention actually talked with an advocate at any time during follow-up. Women receiving care in the usual care clinics were the comparison group.

Outcome Measures Used

We hypothesized that relative to IPV+ women in usual care clinics, IPV+ women in the advocate intervention clinics would have increased help seeking in the short term, decreased violence scores, decreased depressive symptom scores, fewer medical care visits, and greater improvements in self-perceived physical and mental well-being all in the longer term.

We expanded the help-seeking questions used in the National Violence Against Women Survey (NVAWS; Tjaden & Thoennes, 1998) and made the items specific to those services provided in the study area. The help-seeking score included 17 (current sample Cronbach's $\alpha = .73$, range 0-44) questions on disclosure of partner violence and specific forms of help seeking by the following domains: (a) law enforcement/legal assistance (4 items), (b) community services for abused women (7 items), (c) mental health counseling (2 items), (d) talking with a health care provider about partner violence in a clinic or health department (2 items), and (e) disclosure to family and friends (2 items). For each item women were asked whether or not they sought help. If so, the frequency of help seeking was recorded with a response ranging from *never*(coded 0) to *more than 20 times* (coded 5).

We measured continued IPV and victim safety using the 17-item Danger Assessment Score (DAS; Campbell, 1995; Cronbach's $\alpha = .91$) and the WEB (Smith et al., 1999,1995). Reduced response options (agree/disagree) were used from the original 10 items of the WEB Scale (Cronbach's $\alpha = .93$). The Danger Assessment was designed to evaluate risk of homicide by an abusive partner and includes questions regarding partner gun ownership, unemployment, substance use, threats to kill women and/or children, threats of suicide, past arrests for violence, physical abuse, forced sex, attempted strangulation, controlling and stalking behaviors, extreme jealousy ("If I can't have you, no one can"), and whether the woman believes her partner is capable of killing her. The WEB Scale (using 10 statements) measures how some women feel in battering relationships. Example statements include, "My partner makes me feel unsafe even in my own home," "I feel ashamed of the things my partner does to me," and "I feel owned and controlled by my partner." The WEB does not directly measure current physical abuse; however, in combination with the DAS, these scales provide a measure of both physical and psychological abuse.

Five items from the Medical Outcomes Study (Ware, Snow, Kosinski, & Gandek, 1997) were used to measure a woman's perception of her own physical and mental health relative to others of her own age. Response options ranged from *excellent* to*poor* with higher scores indicating poor health. Two items queried how much (a) mental, or (b) physical health interfered with a woman's daily activities over the past month; response options ranged from *not at all* to *extremely*, with higher scores indicating greater interference. One item addressed how much physical pain women experienced in the past month; response options ranged from *none* to *very severe*, with higher scores indicating greater pain. Two items adapted from the CDC BRFSS were used to measure current (past 6 months) symptoms of depression and suicidal ideation as dichotomous variables (Nelson, Holtzman, Bolen, Stanwyck, & Mack, 2001). The two items were as follows: "In the past six months, have you *seriously*considered attempting

suicide?" And, "In the past six months, have you ever had a period of two weeks or longer when you were feeling depressed or down most of the day or nearly every day?" Four items were used to measure the number of medical care visits women had received in the past 6 months in terms of physician visits, emergency room visits, being hospitalized, and having a new medical diagnosis.

Statistical Analysis

All analyses were conducted via PROC MIXED in SAS version 9.2. Linear mixed model (LMM) regression analysis was used to control for the nesting of effects of the intervention within clinics and correlated repeated measures by respondents over time. Analyses were restricted to those with at least two visits/interviews over time for up to 24 months of follow-up. The LMM is more flexible than the general linear model (GLM) because it does not require an equal number of repeated measurements for all subjects. Specifically, PROC MIXED offers a wide variety of covariance structures that allowed us to account for differences in follow-up time points. Follow-up measurements that were collected closer in time are assumed to be more correlated than measurements that were taken further apart. Thus, all timed outcome data, even for participants with some missing repeated measurements, were utilized for parameter estimation. Models were adjusted at baseline by whether the IPV was "current" or "recent" since the timing of IPV influences help seeking by domain as well as self-perceived mental and physical health. Those experiencing current IPV at baseline may be more likely to benefit from the intervention; therefore, we repeated this analysis testing for an interaction of intervention, time, and current IPV+ at baseline. Means are adjusted for age, current IPV status, number of interviews, and baseline outcome measures.

Results

Table 1 presents the response rates for IPV assessment and entrance into the cohort study with interviews through 24 months. Among eligible women, 26% refused IPV assessment. Approximately 25.6% of eligible and assessed women were IPV+. Among the screened women who had experienced IPV in the past 5 years, 429 (46%) agreed to follow-up contact. Within this group, 76% or 327 completed the baseline interview and 231 (70.6%) completed at least one follow-up interview. Of women who completed at least one follow-up interview after the baseline interview (n = 231), 75% completed a 6-month interview, 60% completed a 12-month interview, 50% completed an 18-month interview, and 30% completed a 24-month interview.

Table 1. Response Rates for Assessment and Follow-Up Rates Through 24 Months

Screening and follow-up	Number	Percent
Invited to IPV (intimate partner violence) assessment	5,683	100.0
Ineligible	−738	−12.6
Refused (of 4,945 eligible)	−1,281	−26.0

Eligible and assessed	3,664	74.0
IPV+[a]	939	25.6
Agreed to follow-up study	429	46.0
Completed baseline interview	327	76.0b
Completed at least one follow-up interview	231	70.6c

[a]Only IPV+ women were invited into follow-up study [b]Of those consenting to follow-up contact for cohort. [c]Of those completing a baseline interview.

To evaluate whether the quasi-experimental design resulted in a similar distribution of potential confounders by intervention arm, the demographic profile and timing of IPV were compared by intervention arm for women who completed at least one follow-up survey (Table 2). Women attending clinics in the intervention arm were significantly older. The two groups did not differ significantly in terms of race, education, marital status, number of children, number in the household, or the proportion currently experiencing IPV (all p values > .05). Because the average age differed by intervention arm, all subsequent analyses were adjusted for age and number of interviews over time.

Table 2. Baseline Comparisons of the In-Clinic Intimate Partner Violence (IPV) Advocate Intervention Versus Usual Care (Control) Group by Demographic Variables, Current IPV+ Status, and Contact With an Advocate or Coalition Services

	IPV advocate (intervention)	Usual care (control)	Differences by intervention
Demographic factors	n = 138	n = 93	t test, chi-square (p value)
Age: $M \pm SE$	42.62 (0.90)	38.08 (1.10)	t = 3.16 (0.002)
Race: % African American	68.8%	55.9%	$\chi 2$ = 3.99 (0.06)
Education: % < high school graduate	31.4%	34.4%	$\chi 2$ = 0.229 (0.63)
Marital status: % currently divorced or separated	22.5%	22.6%	$\chi 2$ = 0.01 (0.99)
Number of children: $M \pm SE$	2.09 (0.15)	2.19 (0.18)	t = 0.41 (0.68)
Number of household members: $M \pm SE$	2.96 (0.15)	3.27 (0.18)	t = 1.35 (0.18)
Current versus recent IPV+ % experiencing IPV by a current partner	46.4%	47.3%	$\chi 2$ = 0.019 (0.89)
Contact with advocate or coalition services			
% talked to advocate in clinic[a]	32.8%	4.4%	$\chi 2$ = 26.00 (<0.0001)

% called coalition hotline[b]	21.4%	17.4%	$\chi 2 = 0.63$ (0.43)

Note. M = Mean; SE = standard error. [a]Possible result of the intervention. [b]Possible result of usual care (control).

A greater proportion of women receiving care in the advocate intervention clinics reported talking with an advocate in their clinic (32.8%), relative to women in the usual care arm (4.4%; Table 2). Note that although advocates were not present in person in the usual care clinics, women could talk with an advocate at the PDC. Although women in both arms were offered a card with the coalition hotline number, there were no differences in the proportion of women in the intervention or usual care who called the coalition hotline.

Outcome Evaluation

Adjusted means scores and standard errors are presented in Table 3 along with the *F*statistic and *p* value for the main Intervention effect, the Time effect, and the Intervention × Time interaction. The latter is the critical test of whether there was differential change by intervention group over time. Although it is not shown in Table 3, we additionally ran the Intervention × Time interaction among women who were currently experiencing IPV, in order to explore the effect of current IPV on the range of outcomes.

Table 3. Test of the Intervention Effect on Hypothesized Outcomes Over Follow-Up: Linear Mixed-Model Regression Analysis Comparing Means Score for the Intervention and Control Arms Among Those With At Least Two Visits up to 24 Months' Follow-Up

	Adjusted[a] means (standard error) by intervention arm		*F* (*p* value)		
Outcome	Intervention (*n* = 447)b	Control (*n* = 304)[b]	Intervention	Time	Intervention × Time
Help-seeking activity in the prior 6 months					
Any interactions with advocate (yes/no)[c]	0.18 (0.03)	0.01 (0.04)	11.29 (0.001)	4.67 (<.001)	3.70 (0.003)
Number of interactions with all help-seeking sources[c]	9.11 (0.84)	10.17 (1.19)	0.52 (0.47)	54.09 (<.001)	0.36 (0.87)
Number of calls to coalition hotline calls	0.10 (0.06)	0.11 (0.10)	0.02 (0.90)	10.03 (<.001)	0.12 (0.99)
Number of times called police, involved lawyers for receiving protective order	0.90 (0.21)	0.96 (0.34)	0.03 (0.87)	35.26 (<.001)	2.10 (0.06)

Number of times talked with physician about IPV (intimate partner violence)	0.63 (0.10)	0.83 (0.12)	1.55 (0.21)	40.90 (<.001)	0.00 (0.98)
Number of times talked with family or friends about IPV	4.84 (0.42)	5.30 (0.65)	0.34 (0.56)	23.96 (<.001)	0.24 (0.94)
IPV measures					
Women's Experience With Battering (WEB) Scale score	21.61 (1.67)	26.50 (2.36)	2.82 (0.10)	5.22 (<.001)	1.79 (0.11)
Danger Assessment Scale (DAS) score	0.66 (0.20)	0.65 (0.28)	0.00 (0.97)	8.34 (<.001)	2.02 (0.07)
Mental Health Outcomes					
Rating of current mental/emotional health	3.45 (0.09)	3.40 (0.13)	0.12 (0.73)	0.85 (0.52)	1.29 (0.26)
Interference of mental health with daily activities, past month	2.48 (0.11)	2.08 (0.15)	4.50 (0.04)	0.34 (0.89)	0.85 (0.51)
Depression/suicide ideation symptom score	1.35 (0.09)	1.41 (0.12)	0.13 (0.72)	4.32 (<.001)	3.10 (0.01)
Rating of current physical health	3.79 (0.10)	3.44 (0.14)	4.09 (0.04)	1.86 (0.10)	0.41 (0.84)
Interference of physical health with daily activities past month	2.60 (0.12)	2.28 (0.16)	2.59 (0.11)	3.15 (0.01)	1.54 (0.18)
Amount of physical pain, past month	3.81 (0.12)	3.70 (0.17)	0.34 (0.56)	2.48 (0.03)	1.59 (0.16)
Number of medical care visits (past 6 months)					
Number of physician visits	3.76 (0.39)	4.81 (0.57)	2.32 (0.13)	2.29 (0.04)	0.95 (0.45)
Number of emergency department visits	0.84 (0.13)	0.76 (0.20)	0.13 (0.72)	2.06 (0.07)	0.30 (0.91)
Number of hospitalizations	0.23 (0.06)	0.33 (0.09)	0.81 (0.37)	1.99 (0.08)	1.35 (0.24)

[a]Means are adjusted for age, current IPV status, number of interviews. [b]*n* = Woman × Interview. [c]Called/involved police, lawyer, family/friends, physicians or nurses, and PDC advocate and PDC services (hotline, shelter, counseling, groups).

Women in the advocate intervention arm were significantly more likely to use services provided by the advocate (Table 3; $p = .003$), and this increased use was most likely to occur ($p < .05$) early in the intervention (first 6 months; not reported in Table 3). Women attending clinics with the advocate intervention were more likely to report involving police, lawyer, or court systems to receive protective orders (legal/law enforcement help seeking), relative to women attending clinics not randomized to the advocate intervention. Women attending clinics with the advocate intervention did not differ from those in usual care clinics in any other help-seeking domain. It is important to note that only 33% of IPV+ women receiving care in clinics with an advocate reported talking with an advocate on their first screening visit and enrollment clinic, and only 14% of women in these intervention clinics talked with an advocate on a subsequent visit over follow-up (not reported in Table 3).

In general, IPV scores (DAS, WEB) were highest during the first interview and declined over time (not reported in Table 3). IPV scores in the advocate intervention clinics trended toward greater decline over time relative to usual care (i.e., Intervention × Time interaction for DAS scores, $F = 2.02$, $p = .07$). A reduction in DAS scores associated with the advocate intervention was more likely to occur within the first 6 months of the intervention and among those women experiencing current IPV at baseline ($p < .05$; not reported in Table 3). A similar pattern was observed for WEB Scale score over time.

No differences were observed in either self-perceived current mental health or interference of mental health on daily activities between the intervention and the usual care arms. However, scores for depressive symptoms and suicidal ideation were significantly lower over time for IPV+ women in the intervention clinics relative to the usual care arms (Table 3). No differences in self-perceived physical health, interference, or physical pain were noted when comparing the intervention and usual care clinics over time (Table 3).

Although the adjusted mean number of medical care visits were lower over time among those in the intervention clinics relative to the usual care visits, these differences were not statistically significant (Intervention × Time; see Table 3).

Discussion

Results from this quasi-experimental study indicate that referring IPV+ women to an in-clinic IPV advocate reduces violence as well as depressive symptoms yet does not affect help-seeking behaviors (beyond the IPV advocate contact) or the frequency of receiving medical care relative to those receiving usual care.

Help seeking was high at the baseline interview. Almost 90% of women reported either formal (police or other legal = 57%, coalition = 45%, or medical = 36% or mental health services = 46%) or informal help seeking from friends or family (84%). This may be a function of the intervention because women were interviewed after they had been assessed for IPV and after they had the opportunity to meet with the advocate in the clinic. Although interviewers instructed respondents to include help seeking only for the prior 6-month period and not include help seeking directly resulting from the recent clinic visit, some women may have included intervention-associated help seeking within the first 6-month time frame. As noted, few studies have evaluated the efficacy of clinic-based interventions to improve health and safety for women experiencing IPV. Several published intervention studies are somewhat comparable with the current study, yet each differed in terms of the population setting or intervention used (Cripe et al., 2010; McFarlane et al., 2006, 2002, 2000; Sullivan & Bybee, 1999; Tiwari et al., 2010). Similar to others we noted that IPV scores declined over time among both the intervention and usual care interventions (McFarlane et al., 2006, 2000). Like Tiwari et al., yet in contrast with others (Cripe et al., 2010; Gillum, Sun, & Woods, 2009;McFarlane et al., 2006, 2002, 2000), we observed a reduction in depressive symptoms over time in the advocate intervention clinics relative to a usual care condition. Our findings regarding a reduction in IPV scores over time among women in the advocate intervention clinics was consistent with a large study in an urban and pregnant population (Kiely et al., 2010) yet contrasts with others (McFarlane et al., 2006, 2002,2000; Tiwari et al., 2010). Other studies have evaluated similar in-clinic interventions to address the association between IPV or partner controlling behaviors and help-seeking outcomes. Miller et al. (2011) observed that among women reporting IPV in a recent relationship (past 3 months; $n = 156$) those in the intervention arm that focused on in-clinic advocacy ($n = 96$) had a 71% reduction in the odds of pregnancy coercion compared with women in the control clinics ($n = 60$) over time.

There are several important implications for IPV interventions in health care settings. First, the advocate intervention was significantly more effective relative to usual care in reducing IPV scores, particularly among women currently experiencing IPV. Second, advocate interventions also appear to reduce depressive symptoms relative to usual care over follow-up.

Limitations of this work include a smaller sample for comparison in the later months of follow-up. The bigger threat to validity is the potential for a selection bias. Our response rate for participation in the cohort study was less than 50%. It is difficult to recruit participants into a cohort study of 24 months duration, and this may be even more difficult among abused women. Women who may agree to and complete follow-up interviews differ from those who either do not volunteer or drop out. Given the complexity of the clinic settings, we were not able to randomize the individual to receive the IPV advocate intervention relative to the usual care arm. We addressed the possibility that individual clinic differences by intervention arm might explain study findings by our inclusion of the clustering of clinics within the treatment arms and by adjusting for demographic differences in the two groups. It is possible, however, that residual

confounding may explain study findings as we were not able to adjust for multiple confounders given sample size limitations.

Strengths of this study include the quality assurance of intervention implementation. On a monthly basis the project manager met with the nurses and advocates to (a) train new staff, (b) reinforce prior training on the usual care protocol for nurses, and (c) reinforce prior training for the advocates regarding rapport building, assessing immediate and long-term safety needs for patients, and making safety plans and referrals for desired legal, mental health, or advocacy services. The project manager also met individually with the advocates to debrief difficult cases and discuss alternate options for needed services. Due to confidentiality issues, the project manager did not directly observe private interactions with advocates and patients.

This project's results add to the existing literature in finding that the IPV advocate intervention was effective in reducing IPV scores and reducing depressive symptoms, including suicidal ideation, over follow-up. Because we found no differences in help seeking (with the exception of engaging an advocate in the clinic), it is unclear as to exactly why the onsite IPV advocate intervention affected WEB and DAS scores. It is possible that because the in-clinic advocates worked in the clinic on a full-time basis, abused women may not have viewed these women as "advocates" but as clinic staff. Women may have had contact with clinic-based advocates, but since they may have viewed these advocates as staff, some women may underreport actual contact with advocates. Our finding of a significant difference in reporting contact with clinic-based advocates at baseline yet a more modest association across follow-up provides some support for this possibility. Perhaps simply being offered support from an IPV advocate in a familiar location such as a clinic, even without direct contact, served as a form of support to women in the onsite IPV advocate intervention. Although these results need to be replicated in other populations and with larger numbers of consenting participants, these data suggest that this relatively low-cost intervention of staffing clinics with a trained IPV advocate does reduce violence and depressive symptoms and may, therefore, improve safety as well as women's well-being.

Our findings in combination with others (Kiely et al., 2010; Miller et al., 2011; Tiwari et al., 2010) indicate that advocate interventions can have important implications for reducing violence and improving well-being over time. Our findings do not address the efficacy of screening as others have attempted (MacMillan et al., 2009). Rigorous research addressing the efficacy of screening alone for intimate and family violence is needed to address the U.S. Preventive Services Task Force recommendation (Nelson, Nygren, McInerney, & Klein, 2004). There is increasing evidence that clinic-based intervention improves health and safety outcomes for women experiencing IPV.

Article Notes

- Ann L. Coker, PhD, MPH, is professor in the Department of Obstetrics and Gynecology in the College of Medicine and in the Department of Epidemiology in the College of Public Health at the University of Kentucky. She holds the Verizon Wireless Endowed Chair in the Center for Research on Violence Against Women. Her current research focuses on prevention interventions to reduce the impact of violence against women.
- Paige H. Smith, PhD, is associate professor of public health education at the University of North Carolina, Greensboro, and director of the Center for Women's Health and Wellness. She is currently involved in several collaborative projects that seek to improve health, wellness, and quality of life of women.
- Daniel J. Whitaker, PhD, is a professor in the Institute of Public Health at Georgia State University and director of the National SafeCare® Training and Research Center. His research interests focus on prevention of partner violence and child maltreatment, and implementation of evidence-based programs.
- Brenda Le, MSPH, is a statistician in the National Center for Environmental Health, Atlanta, Georgia.
- Timothy N. Crawford, MPH, is a PhD student in the joint Biostatistics and Epidemiology program, in the College of Public Health at the University of Kentucky. His research interests include the development and use of complex statistical models in understanding dating and sexual violence among adolescents. Other research interest includes survivability studies among women and marginalized groups living with HIV.
- Vicki C. Flerx, PhD, is a research assistant professor at Clemson University. She trains and consults nationally to support dissemination of the Olweus Bullying Prevention Program and has been engaged in numerous research projects focused on intimate partner violence and on child abuse.

- The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.
- This research was funded by a cooperative agreement with CDC #US4CCU419014.

References

1. Arias I., Lynberg M., Simon S., Kresnow M., Shelley G. (2004). *Respondents' reactions to sensitive questions regarding intimate partner violence and sexual violence*. *Paper presented at the Association for Advancement of Behavior Therapy*,New Orleans, LA.
2. Bonomi A. E., Thompson R. S., Anderson M., Reid R. J., Carrell D., Dimer J. A.,et al. (2006). Effects of intimate parter violence on women's physical, mental and social functioning. American Journal of Preventive Medicine, 30, 458-466.

3. Brown J. B., Lent B., Schmidt G., Sas G. (2000). Application of the Woman Abuse Screening Tool (WAST) and WAST—Short in the family practice setting.Journal of Family Pracicet, 49, 896-903.

4. Campbell J. C. (1995). Prediction of homicide of and by battered women. InCampbell J. C. (Ed.), *Assessing dangerousness: Violence by sexual offenders, batterers and child abusers* (pp. 96-113). Thousand Oaks, CA: SAGE.

5. Campbell J. C. (2002). Health consequences of intimate partner violence. Lancet,359, 1331-1336.

6. Campbell J., Lewandowski L. A. (1997). Mental and physical health effects of intimate partner violence on women and children. Psychiatric Clinics of North America, 20, 353-374.

7. Coker A. L., Flerx V. C., Smith P. H., Whitaker D. J., Fadden M. K., Williams M. (2007). Partner violence screening in rural health care clinic. American Journal of Public Health, 97, 1319-1325.

8. Coker A. L., Pope B. O., Smith P. H., Sanderson M., Hussey J. R. (2001).Assessment of clinical partner violence screening tools. Journal of the American Medical Women's Association, 56, 19-23.

9. Cole T. B.(2000). Is domestic violence screening helpful? Journal of the American Medical Association, 284, 551-553.

10. Cripe S. M., Sanchez S. E., Sanchez E., Quintanilla B. A., Alarcon C. H.,Gelaye B., et al. (2010). Intimate partner violence during pregnancy: A pilot intervention program in Lima, Peru. Journal of Interpersonal Violence, 25, 2054-2076.

11. Feldhaus K. M., Koziol-McLain J., Amsbury H. L., Norton I. M., Lowenstein S. R., Abbott J. T. (1997). Accuracy of 3 brief screening questions for detecting partner violence in the emergency department. Journal of the American Medical Association,277, 1357-1361.

12. Gillum T. L., Sun C. J., Woods A. B. (2009). Can a health clinic-based intervention increase safety in abused women? Results from a pilot study. Journal of Women's Health, 18, 1259-1264.

13. Kiely M., El-Mohandes E., El-Khorazaty M. N., Gantz M. G.(2010). An integrated intervention to reduce intimate partner violence in pregnancy: A randomized trial.Obstetrics & Gynecology, 115, 273-283.

14. MacMillan H. L., Wathen C. N., Jamieson E., Boyle M. H., Shannon H. S.,Ford-Gilboe M., et al. (2009). Screening for intimate partner violence in health care settings: A randomized care setting. Journal of the American Medical Association,302, 493-501.

15. McFarlane J., Groff J., O'Brien J., Watson K. (2006). Secondary prevention of intimate partner violence: A randomized controlled trial. Nursing Research, 55, 52-61.

16. McFarlane J., Malecha A., Gist J., Watson K., Batten E., Hall I., et al. (2002). An intervention to increase safety behaviors among abused women. Nursing Research,51, 347-354.

17. McFarlane J., Parker B., Soeken K., Bullock L. (1992). Assessing for abuse during pregnancy. Severity and frequency of injuries and associated entry into prenatal care. Journal of the American Medical Association, 267, 3176-3178.

18. McFarlane J., Soeken K., Wiist W. (2000). An evaluation of interventions to decrease intimate partner violence to pregnant women. Public Health Nursing, 17,443-451.

19. Miller E., Decker M. R., McCauley H. L., Tancredi D. J., Levenson R. R.,Waldman J., et al. (2011). A family planning clinic partner violence intervention to reduce risk associated with reproductive coercion. Contraception, 83, 274-280.

20. Nelson D. E., Holtzman D., Bolen J., Stanwyck C. A., Mack K. A.(2001).Reliability and validity of measures from the Behavioral Risk Factor Surveillance System. Social and Preventive Medicine, 46(Suppl. 1), 03-42.

21. Nelson H. D., Nygren P., McInerney Y., Klein J. (2004). Screening women and elderly adults for family and intimate partner violence: A review of the evidnece for the U.S. Preventive Services Task Force. Annals of Internal Medicine, 140, 387-396.

22. Plichta S. B. (2004). Intimate partner violence and physical health consequences: Policy and practice implications. Journal of Interpersonal Violence, 19, 1296-1323.

23. Sherin K. M., Sinacore J. M., Li X. Q., Zitter R. E., Shakil A.(1998). HITS: A short domestic violence screening tool for use in a family practice setting. Family Medicine, 30, 508-512.

24. Smith P. H., Danis M., Helmick L.(1998). Changing the health care reponse to battered women: A health education approach. Family and Community Health, 20, 1-18.

25. Smith P. H., Earp J. A., DeVellis R. (1995). Development and validation of the Women's Experience With Battering (WEB) Scale. Womens Health, 1, 273-288.

26. Smith P. H., Smith J. B., Earp J. A. (1999). Beyond the measurement trap: A reconstructed conceptualization and measurement of woman battering. Psychology of Women Quarterly, 23, 177-193.

27. Smith P. H., Tessaro I., Earp J. A. (1995). Women's experience with battering: A conceptualization from qualitative research. Womens Health Issues, 5, 173-182.

28. Sullivan C. M., Bybee D. I.(1999). Reducing violence using community-based advocacy for women with abusive partners. Journal of Consulting and Clinical Psychology, 67, 43-53.

29. Tiwari A., Fong D. Y. T., Yuen K. H., Yuk H., Pang P., Humphreys J., et al. (2010). Effect of an advocacy intervention on mental health in Chinese women survivors of intimate partner violence. Journal of the American Medical Association,304, 536-543.

30. Tjaden P., Thoennes N. (1998). *Prevalence, incidence, and consequences of violence against women: Findings from the National Violence Against Women Survey*. Washington, DC: US Department of Justice, Office of Justice Programs.

31. Ware J. E. J., Snow K. K., Kosinski M., Gandek B.(1997). *SF-36 Health Survey manual and interpretation guide*. Boston, MA: The Health Institute, New England Medical Center.