HHS Public Access

Author manuscript

JAMA. Author manuscript; available in PMC 2015 December 23.

Published in final edited form as:

JAMA. 2012 August 15; 308(7): 681–689. doi:10.1001/jama.2012.6434.

Effect of Screening for Partner Violence on Women's Quality of Life:

A Randomized Controlled Trial

Joanne Klevens, MD, PhD, **Romina Kee, MD, MPH**, **William Trick, MD**, **Diana Garcia, MPH**, **Francisco R. Angulo, MBA**, **Robin Jones, MD**, and **Laura S. Sadowski, MD, MPH**

Centers for Disease Control and Prevention, Division of Violence Prevention, Atlanta, Georgia (Dr Klevens); Collaborative Research Unit, Department of Medicine, John H. Stroger, Jr. Hospital of Cook County, Chicago, Illinois (Drs Kee, Trick, and Sadowski, Ms Garcia, and Mr Angulo); and Departments of Obstetrics and Gynecology (Dr Jones), and Internal Medicine (Dr Sadowski), Rush University, Chicago, Illinois

Abstract

Context—Although partner violence screening has been endorsed by many health organizations, there is insufficient evidence that it has beneficial health outcomes.

Corresponding Author: Joanne Klevens, MD, PhD, 4770 Buford Hwy, Mailstop F-63, Atlanta, GA 30341 (jklevens@cdc.gov)..

Author Contributions: Dr Klevens had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.
Study concept: Klevens
Study design: Klevens, Key, Trick, Sadowski.
Acquisition of data: Kee, Garcia, Angulo, Jones, Sadowski.
Analysis and interpretation of data: Klevens, Kee, Trick, Sadowski.
Drafting of the manuscript: Klevens, Kee.
Critical revision of the manuscript for important intellectual content: Klevens, Kee, Trick, Garcia, Angulo, Jones, Sadowski.
Statistical analysis: Klevens, Trick.
Obtained funding: Klevens, Sadowski.
Administrative, technical, or material support: Trick, Garcia, Angulo, Jones, Sadowski.
Study supervision: Kee, Garcia, Angulo, Sadowski.

Conflict of Interest Disclosures: All authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Dr Sadowski reports receipt of consultancy fees from the World Health Organization. The other authors report no disclosures.

Publisher's Disclaimer: The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the CDC.

Online-only Content: The Author Video Interview is available at http://www.jama.com.

Additional Contributions: James Mercy, PhD, and Linda Saltzman†, PhD, CDC (†Deceased), for study concept, Drs Mercy and Saltzman received no compensation for their work on this article. Gladys Arana-Arriola, BA candidate, Gisselle Rodriguez, MEd, and Yazmin San Miguel, BS, DePaul University; Amalia Turkewitz, BA, George Washington University; Crystal Sanchez, BA, Loyola University; Marycarmen Hernandez, BA, Northern Illinois University; Maria Valdovinos, BA, Northwestern University; Emma Rubin, BA, Oberlin College; Emily McClure, MA, United Nations University; Celia Almazan, MSW, Kate Hawley, MSW, TaCarra Moore, MPH, Magdalena Nava, BA, Elizabeth Perez, MD, MPH, Maria Rodriguez Sanchez, MEd, and Claire Seryak, PhD, University of Illinois at Chicago; Yvette Castaneda, BS, and Maricarmen Herrera, BA, University of Illinois at Urbana-Champaign; and Andrea Larson, BS, and Mary Pawlek, MD, University of Wisconsin-Madison helped in recruitment, assessment, and follow-up of study participants and were financially compensated for their work. Stephanie Love Patterson, Illinois certified domestic violence professional, associate director of the Connections for Abused Women and their Children, Stroger Hospital's in-house partner violence advocacy program, helped develop the partner violence video shown to women screening positive (for a nominal sum); and Ashlesha Patel, MD, MPH, systems director of the Family Planning Services of Cook County Health and Hospital Systems, facilitated access to patients seeking services at the gynecological and family planning outpatient clinics at Stroger Hospital (received no compensation).

Objective—To determine the effect of computerized screening for partner violence plus provision of a partner violence resource list vs provision of a partner violence list only on women's health in primary care settings, compared with a control group.

Design, Setting, and Participants—A 3-group blinded randomized controlled trial at 10 primary health care centers in Cook County, Illinois. Participants were enrolled from May 2009–April 2010 and reinterviewed 1 year (range, 48–56 weeks) later. Participants were English- or Spanish-speaking women meeting specific inclusion criteria and seeking clinical services at study sites. Of 3537 women approached, 2727 were eligible, 2708 were randomized (99%), and 2364 (87%) were recontacted 1 year later. Mean age of participants was 39 years. Participants were predominantly non-Latina African American (55%) or Latina (37%), had a high school education or less (57%), and were uninsured (57%).

Intervention—Randomization into 3 intervention groups: (1) partner violence screen (using the Partner Violence Screen instrument) plus a list of local partner violence resources if screening was positive (n=909); (2) partner violence resource list only without screen (n=893); and (3) no-screen, no-partner violence list control group (n=898).

Main Outcome Measures—Quality of life (QOL, physical and mental health components) was the primary outcome, measured on the 12-item Short Form (scale range 0–100, mean of 50 for US population).

Results—At 1-year follow-up, there were no significant differences in the QOL physical health component between the screen plus partner violence resource list group (n=801; mean score, 46.8; 95% CI, 46.1–47.4), the partner violence resource list only group (n=772; mean score, 46.4; 95% CI, 45.8–47.1), and the control group (n=791; mean score, 47.2; 95% CI, 46.5–47.8), or in the mental health component (screen plus partner violence resource list group [mean score, 48.3; 95% CI, 47.5–49.1], the partner violence resource list only group [mean score, 48.0; 95% CI, 47.2–48.9], and the control group [mean score, 47.8; 95% CI, 47.0–48.6]). There were also no differences between groups in days unable to work or complete housework; number of hospitalizations, emergency department, or ambulatory care visits; proportion who contacted a partner violence agency; or recurrence of partner violence.

Conclusions—Among women receiving care in primary care clinics, providing a partner violence resource list with or without screening did not result in improved health.

Trial Registration—clinicaltrials.gov Identifier: NCT00526994

RECOGNITION OF PARTNER VIOlence as a health[1] and public health problem[2,3] has led numerous professional[4–10] and health care organizations,[11] as well as the Institute of Medicine,[12] to recommend screening (ie, testing asymptomatic patients to identify those requiring special intervention) or assessment of women for partner violence in primary care settings. However, the United States Preventive Services Task Force,[13] the Canadian Task Force,[14] and the United Kingdom's Health Technology Assessment Program[15] have concluded there is insufficient evidence to support this recommendation.

The primary aim of this trial was to establish the effect of computerized partner violence screening and provision of local partner violence resource lists to women seeking care in outpatient clinical settings on women's quality of life (QOL). Days lost from work or

household activities, use of health care and partner violence services, and the recurrence of partner violence were secondary outcomes. This trial also tested the effects of providing information on local partner violence resources to all women irrespective of women's disclosure of partner violence.[16]

METHODS

Design and Setting

A 3-group parallel individually randomized controlled trial (1:1:1 ratio) was conducted in 10 primary health care clinics in Cook County, Illinois; 8 of these were public (4 community-based primary care and 4 in-hospital primary care clinics for prenatal, gynecological, family planning, and general medicine), and 2 were private (1 in-hospital adult obstetrics and gynecology clinic and 1 in-hospital adolescent obstetrics and family planning clinic).

Participants

Women seeking clinical services at the study sites were eligible if they were at least 18 years of age, spoke and understood English or Spanish, had access to a telephone, and would share contact information for at least 1 reliable phone number for follow-up. Women were excluded from participation if they were accompanied by their partner and could not be safely separated at the clinical enrollment site, were accompanied by a child older than 3 years without alternative adequate provision for child care, or were visually, hearing, or mentally impaired. Women were recruited from May 2009 until April 8, 2010.

Randomization Process and Description of Study Groups

After giving informed consent, participants were randomized into 1 of 3 study groups. The randomization procedure was built into the computer system that included the audio-computer-assisted self-interview (A-CASI) program, and the automated randomization procedure occurred after the participant was entered into the system. Participants were randomized using blocks of 30 (ie, 10/block) and stratified by clinical site, with allocation concealed from participants and research assistants. The **B**ox shows descriptions of the study groups.

Outcomes

Outcomes were assessed at the time of 1-year follow-up. QOL was the primary outcome and was assessed using the Short Form (SF-12) version 2.[19] This instrument has 12 items measuring 8 subscales of mental and physical health during the past 4 weeks: general health, physical functioning, role limitations due to physical health problems, role limitations due to emotional problems, bodily pain, vitality (energy/fatigue), social functioning, and mental health (psychological distress). These subscales are combined to form a physical health composite scale and a mental health composite scale. Each scale is standardized to have a mean (SD) of 50 (10) for the US population with a possible range of 0 to 100; higher scores represent a better health state.

Days lost from work or household activities, use of health or partner violence services, and recurrence of partner violence were secondary outcomes. The days lost outcome was of self-

reported days missed from work outside the home (if working) and days unable to do household tasks during the past 4 weeks. The use of health services outcome included the number of ambulatory and emergency department visits, and hospitalizations identified in participants' electronic medical records during the study period. Using a computerized query, electronic data for all encounters at the clinical sites of the county health care system were obtained for each participant for the 1-year study period following the date of study enrollment. The use of partner violence services outcome was women's self-reported actions related to the resource list they received at their recruitment visit. Specifically, women were asked at the 1-year follow-up interview: (1) if they remembered receiving a printout of a list of services that provides help for women; (2) whether they had shared it with anyone; (3) whether they had contacted any of the services; and (4) whether they had called or visited an agency that provides services for women experiencing partner violence.

Recurrence of partner violence was established by first asking women if they had ever experienced any of 18 situations adapted from the National Violence Against Women Survey.[20] Three situations concerned psychological abuse (eg, put downs, shouting, or swearing), 4 concerned partners' controlling behaviors (eg, controlling access to family, friends, or income; jealousy), 8 concerned physical aggression without a weapon (eg, pushing, slapping, kicking, hitting with an object, choking), 2 concerned threat or assault with a gun or knife, and 1 concerned forced vaginal, oral, or anal sex. Positive response to any question was considered as experiencing partner violence. Next, women experiencing partner violence were asked if any of these situations had occurred in the past year or in the year before study enrollment. Recurrence was then calculated as the percentage of women reporting partner violence in the year before enrollment who also reported partner violence in the past year.

Data Collection

Trained research assistants approached potential participants in each clinic's waiting room to determine their interest and eligibility and obtain written consent. Research assistants then accompanied participants to private rooms or kiosks equipped with touch-screen computers and headphones and started the A-CASI. The mean (SD) length of the A-CASI was 17.5 minutes (5.1). After completing the A-CASI, research assistants asked participants their age, level of education, insurance status, and racial/ethnic group, and then negotiated safe follow-up contact times and telephone numbers, a safe message to leave on an answering machine, a code word participants could use if interrupted during the follow-up interview, and an address for receiving a reminder letter and money order. Participants were given $20 as compensation for the base-line interview and a $15 money order for the follow-up interview.

The 1-year follow-up was conducted using a Computer-Assisted Telephone Interview (CATI). One month before the follow-up, the research assistants reminded participants of the upcoming interview and updated their contact information using mailed reminder letters, calls to women and their contacts, public access jail and death websites, and surveillance of the electronic appointment system. Research assistants attempted to complete follow-up interviews during the times negotiated with women at baseline. The median (range)) number of attempts to locate women for follow-ups was 4 (1–59). All CATIs were conducted

between 48 and 56 weeks after the women enrolled by staff blinded to the study group assignment.

This study protocol was approved by the institutional review boards at the Centers for Disease Control and Prevention (CDC), the Cook County Hospital and Health Services, and Rush Medical University.

Analysis

Descriptive statistics were used to compare demographic and baseline characteristics of participants between study groups for all women enrolled and for the subgroup of women experiencing partner violence in the year prior to enrollment. An intent-to-treat method using complete case analysis was used to compare outcomes among all women and among the subgroup of women experiencing partner violence in the year prior to enrollment.

χ^2 Tests (for categorical variables) or *F*ratios (for comparing means) were used to establish statistically significant differences between study groups at baseline and at follow-up for each outcome, with the intervention group as the independent variable and without adjusting for covariates. Since adding partner violence screening to the health care encounter comes with the downside of reduced efficiency, demonstrating superiority was the goal of this study. Significance tests were used to determine whether screening along with provision of information on partner violence resources would be better than no screen and no information on partner violence resources. A sample size of 115 women experiencing partner violence in each group(or 885/group if the prevalence of past-year partner violence in a primary care sample is 13%[21–24]) would provide 85% power to detect an effect size of 0.4, which is equivalent to 4 points in the QOL increase of 4 points in the means of QOL physical health and mental health component scores with a 1-tailed test(as specified in the protocol) at α=. 05. Differences of 9 points on the physical and 17 points on the mental health components of the QOL scales differentiated patients with known serious vs minor physical and mental health problems.[25]

Multilevel linear regression models were used to estimate the effects of intervention on the mean scores of QOL scales, days lost, number of emergency department and ambulatory care visits, and hospitalizations, while adjusting for confounders and the clustering of the data by clinic. For each outcome, the mixed models linear command of SPSS(version 18)[26] was selected with the enrollment clinic specified as subjects and as a random intercept with variance components as the covariance structure to adjust for clustering by clinic; the intervention group was specified as a factor; baseline scores (only QOL scales and days lost) of each outcome, age, education, race/ethnicity, and health care insurance status were entered as covariates; and maximum likelihood was entered as the estimation procedure. Intervention group and covariates were treated as fixed effects. Results are presented as estimated marginal means and 95% CIs are adjusted using the Bonferroni correction. The GLLAMM procedure in Stata (version 12)[27] was used for the 5 dichotomous outcomes(remembering the list, use of the list, sharing the list, contacting a partner violence agency, and recurrence of partner violence)by specifying the link function as logit, the distribution of the outcome variable as fam (binom), the clinic as the level 2 variable; and age, education, race/ethnicity, and health care insurance status entered as covariates. To

account for missing data due to loss to follow-up or exclusion from the county's electronic medical record system, adjusted means and odds ratios were estimated from 5 complete files generated through multipleimputation to test the robustness of the observed findings for all enrolled women.

RESULTS

The Figure shows sample recruitment, allocation, and retention. Of 3537 women approached, 77% (2727) met eligibility criteria and 76% (2708) were randomized to 1 of 3 study groups and assessed. The mean (SD) age of enrolled women was 38.7 (14.9) years. Enrolled women were predominantly non-Latina African American (54.9%; 1482) or Latina (36.8%; 993), had a high school education or less (56.5%; 1527), and were uninsured (57%; 1532), with no significant differences between study groups (Table 1).

One year after enrollment, 87.2% (2364/2708) of the women completed the follow-up interview, with no differences in retention by study group. Women lost to follow-up at 1 year were 5 years younger ($P < .001$), more likely to have public insurance (44.9% vs 33.8%; $P < .001$), and fewer had higher education (39% vs 44%; $P = .005$) than women who completed the follow-up.

There were minimal differences in outcomes between the unadjusted and the adjusted estimates and therefore, only adjusted estimates are presented in Table 2. For our primary outcome at the 1-year follow-up, mean scores on the QOL components and subscales ranged from 44 to 52 among all women, with no statistically significant differences by study group status for any of the components or subscales. For our secondary outcomes, women reported losing 0.7 days of work (95% CI, 0.5–0.8) and 2.0 days of household activities (95% CI, 1.8–2.2), with no significant differences in number of days lost between study groups. The mean number of hospitalizations and emergency department and ambulatory care visits were 0.2 (95% CI, 0–0.3), 0.3 (95% CI, 0.2–0.4), and 5.7 (95% CI, 4.1–7.2) in the year following enrollment, with no statistically significant differences between study groups. At follow-up, 66.5% (1574/2364) remembered receiving the list of referral resources. Among those who remembered receiving the list, 32.9% (519/1574) shared the list with someone, but only 6.3% (100/1574) of all women used the list to contact services, and fewer than 4.4% (106/2362) contacted an agency that provides help to women hurt by a partner. At follow-up, 9.9% (235/2362) reported experiencing partner violence in the year before enrolling in the study and in the previous year (recurrence), with no statistically significant differences between study groups. Estimates derived from multiple imputation (Table 3) were almost identical to the original results, with no significant differences for QOL scales or any of the secondary outcomes.

Subgroup Analysis of Women Experiencing Partner Violence in the Year Prior to Enrollment

Based on women's recall of partner violence experiences using 18 of the National Violence Against Women Survey[20] questions, 14.6% (346/2364) reported experiencing partner violence in the year before enrolling in the study, with no significant differences between study groups. In comparison with the overall sample, this subgroup had lower scores on the

baseline mental health composite (45.7 vs 41.5; *P*<.001) and on the role limitations due to emotional problems (42.8 vs 40.1; *P*<.001), social functioning (44.7 vs 41.5; *P*<.001), mental health (46.2 vs 42.6; *P*<.001), and vitality sub-scales (49.9 vs 48.2; *P*=.003).

Again, there were minimal differences in outcomes between the unadjusted and the adjusted estimates in these subgroup analyses, and therefore, only adjusted estimates are presented (Table 4). The adjusted mean scores on the QOL components and subscales ranged from 41.9 to 49.4 in this subgroup, with no statistically significant differences by study group status for any of the components or sub-scales. Women reported losing 0.9 days of work (95% CI, 0.5–1.2) and 2.5 days of housework (95% CI, 1.9–3.1) in the previous 4 weeks, with no statistically significant differences between study groups. The mean number of hospitalizations and emergency department and ambulatory care visits was 0.1 (95% CI, 0–0.3), 0.3 (95% CI, 0.2–0.4), and 5.0 (95% CI, 3.3–6.7) in the previous year with no statistically significant differences between study groups. Of women experiencing partner violence in the year prior to enrolling in the study, 72% (249/345) remembered receiving the list of referral resources. Of those women who remembered receiving the list, 33% (81/249) shared the list with someone but only 9% (23/249) used the list to contact services, and 14% (49/346) contacted an agency that provides help to women experiencing partner violence. Although women in the screen plus partner violence resource list group were almost twice as likely as the control group to share the list and contact an agency that provides help to women abused by a partner, none of the differences observed between study groups were statistically significant. The rate of recurrence among women experiencing partner violence before enrollment in the study was 68% (235/345), with no statistically significant differences between study groups.

COMMENT

This 3-group randomized controlled trial showed no differences in QOL indicators, number of days lost, hospitalizations, emergency department or ambulatory visits, use of partner violence resources, or recurrence of partner violence between women screened plus receiving a partner violence resource list, women only receiving a partner violence resource list (not screened), and women in a no-screen no-partner violence resource list control group. These nonsignificant differences were based on 1-tailed tests because this was conceived as a superiority trial. Results were not appreciatively different using 2-tailed tests.

Before discussing the potential implications of these findings, several limitations of the study must be considered. First are the potential sample biases. Although the participation rate was relatively high, we do not know whether nonparticipants differed from participants. In addition, the 12% lost to follow-up differed in age, education, and insurance status from those retained and although they may have differed in outcomes as well, estimates based on 5 imputed data files suggest that this would not have changed the findings. Generalizability of the findings is limited by the urban setting; exclusion of participants without phones, accompanied by partners or older children at the time of their visit, who were non-English or non-Spanish speaking; and the limited number of college-educated and white, Asian, or Native American participants in the sample.

A second limitation is the intensity of the intervention. Participants in the screening group were only screened once—perhaps screening once is insufficient for patients to disclose partner violence. Thus, it remains to be determined whether repeated screening might have an effect on women's health. Similarly, showing a video encouraging the use of referral resources along with a printed list of partner violence resources may also be considered too brief of an intervention to expect an v effect. Screening might be effective if combined with a stronger type of intervention.

The list of general resources provided to the control group might be considered an intervention. Some of these resources have not been rigorously evaluated, but to date, none of the interventions on this list have shown health effects among women experiencing partner violence.[18] Although it is possible that some of these resources might affect health, this would not affect the results related to the partner violence screen and provision of resources.

Recall bias may be an issue for the subgroup analyses of women experiencing partner violence during the year before enrollment. In order to have a no-screen, no-partner violence resource list control group as well as a “partner violence resource list only” group, we did not ask all women about partner violence at baseline. Instead, we asked all women at the 1-year follow-up to recall if they had experienced any of 18 situations adapted from the National Violence Against Women Survey[20] in the year prior to enrolling in the study (ie, 2 years ago). It is possible that some women may not have remembered experiencing partner violence 2 years earlier. Others may have mistaken the period of time when they actually experienced partner violence. However, because the same questions were asked in all 3 study groups with no significant differences in the proportion reporting partner violence in the year prior to enrollment between the study groups, these potential errors in classification are not believed to affect the findings. The use of items from National Violence Against Women Survey to distinguish this subgroup may also be questioned as these have not been validated. However, these items were adapted from the validated and widely used Conflict Tactics Scale.[28]

Conversely, this trial had several important strengths: random assignment, a true control group, small loss to follow-up, blinded assessment of outcomes, outcomes based on multiple information sources (self-reported health status and electronic medical records), a mix of both public and private clinics, and a large number (and proportion) of Latina participants (who are often excluded from studies because of language barriers).

The consistency of the results across the many outcomes examined also contributes to greater confidence in the findings. These findings are also consistent with another trial in primary care settings.[29] Nonetheless, 2 recent trials among pregnant women showing effects on partner violence recurrence, pre-term birth,[30] and women's QOL[31] raise the possibility that screening with more intensive interventions may be effective among pregnant women and on other types of outcomes such as preterm birth.

In conclusion, the results of this study suggest providing a partner violence resource list with or without computerized screening of female adult patients in primary care settings does not

result in significant benefits in terms of general health outcomes. These findings provide important information for clinicians and others to consider in light of recent professional recommendations calling for routine screening.

Acknowledgments

Funding/Support: This study was supported by the Centers for Disease Control and Prevention (CDC), National Center for Injury Prevention and Control, Division of Violence Prevention.

Role of the Sponsors: The CDC, National Center for Injury Prevention and Control, Division of Violence Prevention did participate in the design and conduct of the study; management, analysis, and interpretation of the data or preparation, review, and approval of the manuscript.

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Box. Description of the 3 Study Groups

Screen Plus Partner Violence Resource List

Group in which women were screened by the audio–computer-assisted self-interview (A-CASI) using the Partner Violence Screen instrument.[17] The Partner Violence Screen asks 3 questions:

> Have you been hit, kicked, punched, or otherwise hurt by someone within the past year?
>
> Do you feel safe in your current relationship?
>
> Is there a partner from a previous relationship who is making you feel unsafe now?

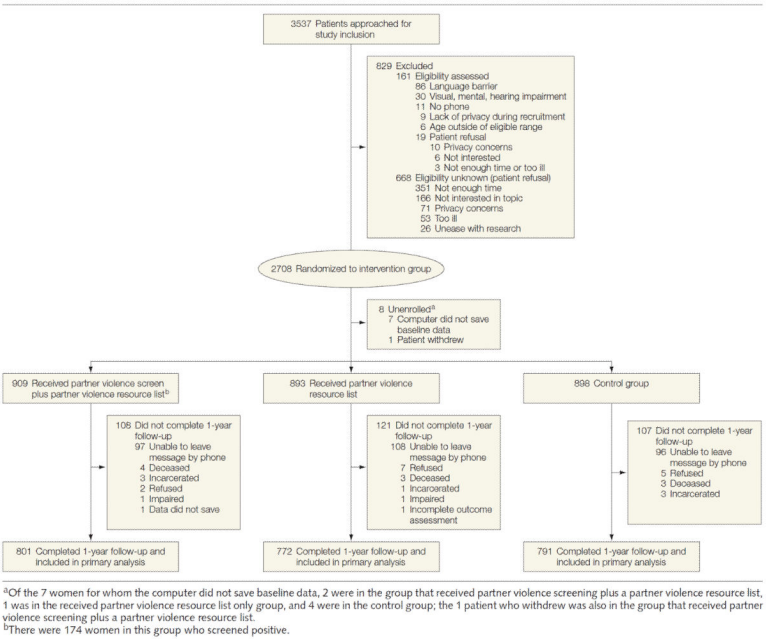
Women screening positive (affirmative response to ≥1 question) were shown a brief video on the computer screen in which a partner violence advocate provided support and information about the hospital-based partner violence advocacy program and encouraged the viewer to seek help. These women also received a computer printout of contact information for the local partner violence advocacy program, the local and national 24-hour hotlines, local battered women's shelters, and the local battered women's outreach program. For safety reasons, the partner violence resources were combined with a list of general resources (ie, health services, legal aid, parenting support, general counseling services, alcohol and drug treatment, and shelters for the homeless). Women screening negative received the list of general resources only.

Partner Violence Resource List Only

Group in which all women were given the partner violence resources and general resource list only—no screening.

Control Group

Group in which women were not screened and did not receive the partner violence resource list, but were given the list of general resources. Although not all of these resources have been rigorously evaluated, none on this general list has been shown to have health effects on women experiencing partner violence.[18]



[a]Of the 7 women for whom the computer did not save baseline data, 2 were in the group that received partner violence screening plus a partner violence resource list, 1 was in the received partner violence resource list only group, and 4 were in the control group; the 1 patient who withdrew was also in the group that received partner violence screening plus a partner violence resource list.
[b]There were 174 women in this group who screened positive.

Figure.
Study Diagram

Table 1

Demographic Characteristics and Baseline Scores of All Participants Enrolled by Group

Characteristics	Screen Plus Partner Violence Resource List (n = 909)	Partner Violence Resource List Only (n = 893)	Control (n = 898)	Total (N = 2700)	*P* Value[a]
Age, mean (SD), y	39.0 (15.0)	38.3 (14.8)	38.7 (15.1)	38.7 (14.9)	.30
Race/ethnicity, No.(%)					
White non-Latina	56 (6.2)	46 (5.2)	44 (4.9)	146 (5.4)	
Non-Latina African American	497 (54.7)	482 (54.0)	503 (56.0)	1482 (54.9)	.18
Latina	332 (36.5)	330 (37.0)	331 (36.9)	993 (36.8)	
Other	24 (2.6)	35 (3.9)	20 (2.2)	79 (2.9)	
Level of education, No. (%)					
<High school	225 (24.8)	240 (26.9)	238 (26.5)	703 (26.0)	
High school or general equivalency diploma	288 (31.7)	278 (31.1)	258 (28.7)	824 (30.5)	.40
Vocational or some college	307 (33.8)	292 (32.7)	311 (34.6)	910 (33.7)	
≥4 y College	89 (9.8)	83 (9.3)	91 (10.1)	263 (9.7)	
Insurance status, No. (%)					
Uninsured	533 (58.6)	497 (55.7)	502 (55.9)	1532 (56.7)	
Medicaid or Medicare	303 (33.3)	331 (37.1)	315 (35.1)	949 (35.1)	.18
Private insurance	73 (8.0)	65 (7.3)	81 (9.0)	219 (8.1)	
QOL, mean (SD), score[b]					
Physical composite	45.3 (10.1)	45.2 (10.1)	45.7 (10.0)	45.4 (10.1)	.26
Mental composite	45.3 (12.1)	45.3 (11.9)	46.6 (11.9)	45.7 (12.0)	.02
General health	42.2 (12.5)	42.4 (12.6)	43.8 (12.3)	42.8 (12.5)	.005
Physical function	46.2 (10.6)	46.3 (10.6)	46.4 (10.8)	46.3 (10.7)	.46
Role physical	44.3 (10.0)	43.7 (9.9)	44.5 (10.2)	44.2 (10.0)	.09
Role emotional	42.7 (12.2)	42.1 (11.9)	43.7 (12.0)	42.8 (12.0)	.01
Bodily pain	45.2 (12.0)	44.8 (12.0)	45.9 (11.7)	45.3 (11.9)	.05
Vitality	49.3 (10.0)	49.7 (10.0)	50.8 (10.1)	49.9 (10.1)	.005
Social function	44.4 (12.5)	44.7 (12.4)	45.0 (12.4)	44.7 (12.4)	.29
Mental health	45.8 (11.8)	45.7 (11.3)	47.1 (11.5)	46.2 (11.5)	.01

Characteristics	Screen Plus Partner Violence Resource List (n = 909)	Partner Violence Resource List Only (n = 893)	Control (n = 898)	Total (N = 2700)	*P* Value[a]
Time lost in past 4 weeks, mean (SD), d					
From work[c]	1.7 (0.5)	1.7 (0.5)	1.7 (0.4)	1.7 (0.5)	.34
From housework	1.8 (4.6)	1.9 (5.1)	1.9 (5.2)	1.9 (5.0)	.26

Abbreviation: QOL, quality of life.

[a] *P* values for QOL scores and days lost were calculated using analysis of variance to compare more than 2 sample means with no group selected as comparison; all others were calculated using χ^2 to compare overall distributions with no group selected as comparison.

[b] QOL scores are based on the Short Form (SF-12) version 2. Each scale is standardized to have a mean (SD) of 50 (10) for the US population with a possible range of 0 to 100; higher scores represent a better health state.

[c] Based on participants who reported having a job outside the home in the past 4 weeks (42.5%).

Table 2

Adjusted QOL, Days Lost, Use of Health and Partner Violence Resource List or Services, and Partner Violence Recurrence at 1-Year Follow-up Among All Participants[a]

Outcomes	Mean (95% CI)[b]				*P* Value	*P* Value
	Screen Plus Partner Violence Resource List (n = 801)	Partner Violence Resource List Only (n = 772)	Control (n = 791)	Total (n = 2364)[c]		
QOL score[d]						
Physical composite	46.8 (46.1–47.4)	46.4 (45.8–47.1)	47.2 (46.5–47.8)	46.8 (46.2–47.4)	.21	
Mental composite	48.3 (47.5–49.1)	48.0 (47.2–48.9)	47.8 (47.0–48.6)	48.0 (47.4–48.7)	.51	
General health	43.9 (43.3–44.6)	43.8 (43.2–44.5)	44.0 (43.3–44.7)	43.9 (43.5–44.3)	.95	
Physical function	48.3 (47.4–49.2)	48.0 (47.1–48.8)	48.8 (47.9–49.7)	48.3 (47.5–49.2)	.13	
Role physical	46.9 (46.3–47.5)	46.2 (45.6–46.8)	46.9 (46.3–47.5)	46.7 (46.3–47.0)	.20	
Role emotional	45.6 (44.8–46.4)	45.6 (44.8–46.5)	45.3 (44.4–46.1)	45.5 (44.8–46.2)	.74	
Bodily pain	46.7 (45.8–47.7)	46.4 (45.4–47.3)	46.6 (45.6–47.5)	46.5 (45.7–47.4)	.81	
Vitality	52.0 (51.3–52.8)	51.6 (50.9–52.4)	51.7 (50.9–52.4)	51.8 (51.1–52.4)	.59	
Social function	46.8 (45.7–47.9)	46.3 (45.2–47.4)	46.9 (45.8–48.0)	46.7 (45.7–47.6)	.50	
Mental health	49.0 (48.1–49.9)	48.5 (47.6–49.4)	48.6 (47.7–49.5)	48.7 (47.9–49.5)	.54	
Time lost in past 4 weeks, days[d]						
From work[e]	0.7 (0.4–0.9)	0.7 (0.4–0.9)	0.7 (0.4–1.0)	0.7 (0.5–0.8)	.96	
From housework	1.9 (1.6–2.3)	2.2 (1.8–2.5)	1.9 (1.6–2.3)	2.0 (1.8–2.2)	.66	
Use of health services[f]						
Hospitalizations	0.2 (0–0.3)	0.1 (0–0.3)	0.2 (0–0.3)	0.2 (0–0.3)	.40	
Emergency department visits	0.3 (0.2–0.4)	0.3 (0.2–0.4)	0.3 (0.2–0.4)	0.3 (0.2–0.4)	.40	
Ambulatory visits	5.4 (3.8–7.0)	5.7 (4.1–7.3)	5.9 (4.3–7.4)	5.7 (4.1–7.2)	.12	
Use of partner violence resources						
Remembered resource list						
No./total No.[g]	556/750	494/709	524/738	1574/2197		
OR (95% CI)	1.2 (0.9–1.5)	0.9 (0.7–1.2)	1 [Reference]		.10[h]	.24[i]
Shared list						
No./total No.[g]	188/553	161/488	170/516	519/1557		

Outcomes	Mean (95% CI)[b]				*P* Value	*P* Value
	Screen Plus Partner Violence Resource List (n = 801)	Partner Violence Resource List Only (n = 772)	Control (n = 791)	Total (n = 2364)[c]		
OR (95% CI)	1.1 (0.8–1.4)	1.0 (0.8–1.3)	1 [Reference]		.34[h]	.47[i]
Used list to contact a service						
No./total No.[g]	29/553	33/487	38/521	100/1561		
OR (95% CI)	0.7 (0.4–1.2)	0.9 (0.6–1.5)	1 [Reference]		.10[h]	.37[i]
Contacted partner violence agency						
No./total No.[g]	42/801	35/769	29/791	106/2361		
OR (95% CI)	1.5 (0.9–2.4)	1.2 (0.7–2.0)	1 [Reference]		.06[h]	.21[i]
Recurrence of partner violence						
No./total No.[g]	82/801	83/772	70/791	235/2364		
OR (95% CI)	1.2 (0.8–1.7)	1.2 (0.9–1.7)	1 [Reference]		.16[h]	.12[i]

Abbreviations: OR, odds ratio; QOL, quality of life.

[a] QOL is adjusted for age, education level, race/ethnicity, insurance status, and clustering by clinic. *P* values for QOL scores, time lost in the last 4 weeks, and use of health services were calculated using multilevel linear regression to compare more than 2 sample marginal means with no group selected as comparison.

[b] Data are shown as mean (95% CI) unless otherwise indicated.

[c] Corresponds to women completing the 1-year follow-up interview.

[d] Estimate also adjusted for baseline score.

[e] Data are based on participants who reported having a job outside the home in the past 4 weeks (42.5%).

[f] Data are based on 2355 participants due to exclusion of 2 clinics that do not participate in the county's electronic medical record system.

[g] No./total No. indicates the number of events vs the total number contributing data.

[h] *P* value indicates comparison of the screened group with the control group.

[i] *P* value indicates comparison of the partner violence resource list only group with the control group.

Table 3

Adjusted QOL, Days Lost, Use of Health and Partner Violence Resource List or Services, and Partner Violence Recurrence at 1-Year Follow-up Among All Enrolled Women Based on Multiple Imputation of Missing Outcome Data[a]

Outcome	Mean (95% CI)			
	Screen Plus Partner Violence Resource List (n = 909)	Partner Violence Resource List Only (n = 893)	Control (n = 898)	Total (N = 2700)
QOL score[b]				
Physical composite	46.8 (46.2–47.4)	46.6 (46.0–47.2)	47.3 (46.7–47.9)	46.9 (46.5–47.3)
Mental composite	48.3 (47.5–49.2)	47.9 (47.2–48.7)	47.8 (47.0–48.5)	48.0 (47.5–48.6)
General health	44.2 (43.5–44.8)	43.9 (43.2–44.6)	44.1 (43.4–44.8)	44.1 (43.7–44.5)
Physical function	48.3 (47.5–49.1)	48.1 (47.3–48.9)	48.8 (47.9–49.6)	48.4 (47.7–49.0)
Role physical	46.8 (46.3–47.4)	46.2 (45.6–46.8)	47.0 (46.4–47.6)	46.7 (46.3–47.0)
Role emotional	45.6 (44.9–46.4)	45.5 (44.7–46.3)	45.3 (44.5–46.1)	45.5 (44.9–46.0)
Bodily pain	46.7 (45.8–47.5)	46.3 (45.5–47.1)	46.6 (45.7–47.5)	46.5 (45.9–47.1)
Vitality	52.0 (51.3–52.7)	51.7 (51.0–52.3)	51.7 (51.1–52.4)	51.8 (51.3–52.2)
Social function	46.7 (45.8–47.7)	46.2 (45.2–47.1)	46.8 (45.7–47.8)	46.5 (45.8–47.2)
Mental health	48.9 (49.1–49.7)	48.5 (47.7–49.4)	48.6 (47.8–49.4)	48.7 (48.1–49.3)
Time lost from housework in past 4 weeks, d[b]	1.9 (1.5–2.3)	2.1 (1.7–2.5)	1.9 (1.5–2.4)	2.0 (1.7–2.3)
Use of health services				
Hospitalizations	0.2 (0.1–0.3)	0.2 (0.0–0.3)	0.2 (0.1–0.3)	0.2 (0.1–0.3)
Emergency department visits	0.3 (0.2–0.3)	0.3 (0.2–0.4)	0.3 (0.2–0.4)	0.3 (0.2–0.3)
Ambulatory visits	5.3 (4.2–6.4)	5.5 (4.4–6.7)	5.7 (4.6–6.8)	5.5 (4.5–6.6)
Contacted partner violence agency				
No./total No[c]	51/909	46/893	38/898	135/2700
OR (95% CI)	1.0 (0.8–1.4)	1.2 (0.9–1.5)	1 [Reference]	
Recurrence of partner violence				
No./total No[c]	96/909	101/893	83/898	280/2700
OR (95% CI)	1.0 (0.8–1.4)	1.1 (0.8–1.5)	1 [Reference]	

Abbreviations: OR, odds ratio; QOL, quality of life.

[a]QOL is adjusted for age, education level, race/ethnicity, insurance status, and clustering by clinic. Data are derived from multiple imputation of missing outcome data. Data are shown as mean (95% CI) unless otherwise indicated.

[b] Estimate also adjusted for baseline score.

[c] No./total No. indicates the number of events vs the total number contributing data.

Table 4

Adjusted QOL, Days Lost, Use of Health and Partner Violence Resource List or Services, and Partner Violence Recurrence at 1-Year Follow-up Among Women Experiencing Partner Violence in Year Before Enrollment[a]

Outcome	Mean (95% CI)				*P* Value	*P* Value
	Screen Plus Partner Violence Resource List (n = 120)	Partner Violence Resource List Only (n = 116)	Control (n = 110)	Total (n = 346[b])		
QOL score[c]						
Physical composite	47.4 (46.1–48.8)	47.1 (45.7–48.4)	48.0 (46.6–49.4)	47.5 (46.7–48.3)	.32	
Mental composite	44.2 (42.4–45.9)	43.7 (41.9–45.5)	42.5 (40.7–44.3)	43.5 (42.4–44.5)	.21	
General health	43.6 (41.8–49.3)	42.5 (40.7–44.3)	43.9 (42.0–45.7)	43.3 (42.3–44.3)	.27	
Physical function	48.9 (47.1–50.6)	48.7 (47.0–50.5)	48.7 (46.9–50.5)	48.8 (47.3–50.3)	.49	
Role physical	45.3 (43.7–46.8)	46.3 (44.7–47.9)	46.7 (45.1–48.3)	46.1 (45.2–47.0)	.22	
Role emotional	42.4 (40.3–44.5)	42.6 (40.4–44.7)	40.8 (38.6–42.9)	41.9 (40.2–43.7)	.16	
Bodily pain	45.8 (44.0–47.7)	45.2 (43.4–47.1)	44.9 (43.0–46.8)	45.3 (44.2–46.4)	.40	
Vitality	50.0 (48.4–51.5)	49.2 (47.6–50.8)	49.1 (47.5–50.7)	49.4 (48.5–50.3)	.35	
Social function	43.9 (42.0–45.8)	42.5 (40.6–44.4)	43.4 (41.4–45.4)	43.3 (42.2–44.4)	.29	
Mental health	45.2 (43.3–47.1)	45.2 (43.3–47.2)	45.2 (42.2–46.2)	44.9 (43.4–46.4)	.34	
Time lost in past 4 weeks, d[c]						
From work	1.1 (0.4–1.8)	0.9 (0.2–1.6)	1.6 (−0.5–1.3)	0.9 (0.5–1.2)	.31	
From housework	2.1 (1.0–3.2)	3.1 (2.0–4.2)	2.3 (1.2–3.5)	2.5 (1.9–3.1)	.46	
Use of health services[d]						
Hospitalizations	0.1 (−0.1 to 0.3)	0.2 (0–0.4)	0.2 (0–0.4)	0.1 (−0.1 to 0.3)	.37	
Emergency department visits	0.3 (0.1–0.4)	0.4 (0.3–0.5)	0.2 (0.1–0.4)	0.3 (0.2–0.4)	.08	
Ambulatory visits	4.9 (3.2–6.7)	5.1 (3.3–6.9)	4.9 (3.0–6.7)	5.0 (3.3–6.7)	.48	
Use of partner violence resources						
Remembered resource list						
No./total No[e]	91/112	79/105	79/106	249/323		
OR (95% CI)	1.6 (0.8–3.1)	1.1 (0.6–2.1)	1 [Reference]		.08[f]	.38[g]
Shared list						

Outcome	Mean (95% CI)				*P* Value	*P* Value
	Screen Plus Partner Violence Resource List (n = 120)	Partner Violence Resource List Only (n = 116)	Control (n = 110)	Total (n = 346[b])		
No./total No[e]	36/90	25/77	20/78	81/245		
OR (95% CI)	1.8 (0.9–3.5)	1.3 (0.6–2.6)	1 [Reference]		.05[f]	.24[g]
Used list to contact a service						
No./total No[e]	11/91	3/79	9/79	23/226		
OR (95% CI)	1.3 (0.5–3.4)	0.3 (0.1–1.3)	1 [Reference]		.31[f]	.059
Contacted partner violence agency						
No./total No[e]	23/120	14/116	12/110	49/346		
OR (95% CI)	1.9 (0.9–4.1)	1.1 (0.5–2.4)	1 [Reference]		.05[f]	.469
Recurrence of partner violence, OR (95% CI)						
No./total No[e]	38/120	33/116	40/110	111/346		
OR (95% CI)	1.2 (0.7–2.2)	1.4 (0.8–2.5)	1 [Reference]		.23[f]	.11[g]

Abbreviations: OR, odds ratio; QOL, quality of life.

[a] QOL is adjusted for age, education level, race/ethnicity, insurance status, and clustering by clinic. Data are shown as mean (95% CI) unless otherwise indicated. *P* values for QOL scores, time lost in the last 4 weeks, and use of health services were calculated using multilevel linear regression to compare more than 2 sample marginal means with no group selected as comparison.

[b] Corresponds to women experiencing partner violence prior to enrollment who completed the 1-year follow-up interview.

[c] Estimate also adjusted for baseline score.

[d] Analyses based on 295 participants due to exclusion of 2 clinics which do not participate in the counties' electronic medical record system.

[e] No./total No. indicates the number of events vs the total number contributing data.

[f] *P* value indicates comparison of the screened group with the control group.

[g] *P* value indicates comparison of the partner violence resource list only group with the control group.