Accuracy of 3 Brief Screening Questions for Detecting Partner Violence in the Emergency Department

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Objective.—To devise a brief screening instrument to detect partner violence and to partially validate this screen against established instruments.

Design.—Prospective survey.

Setting.—Two urban, hospital-based emergency departments.

Participants.—Of 491 women presenting during 48 randomly selected 4-hour time blocks, 322 (76% of eligible patients) participated. Respondents had a median age of 36 years; 19% were black, 45% white, and 30% Hispanic, while 6% were of other racial or ethnic groups; 54% were insured.

Interventions.—We developed a partner violence screen (PVS), consisting of 3 questions about past physical violence and perceived personal safety. We administered the PVS and 2 standardized measures of partner violence, the Index of Spouse Abuse (ISA) and the Conflict Tactics Scale (CTS).

Main Outcome Measures.—Sensitivity, specificity, and predictive values of the PVS were compared with the ISA and the CTS as criterion standards.

Results.—The prevalence rate of partner violence using the PVS was 29.5% (95% confidence interval [CI], 24.6%-34.8%). For the ISA and CTS, the prevalence rates were 24.3% (95% CI, 19.2%-30.1%) and 27.4% (95% CI, 21.7%-33.6%), respectively. Compared with the ISA, the sensitivity of the PVS in detecting partner abuse was 64.5%; the specificity was 80.3%. When compared with the CTS, sensitivity of the PVS was 71.4%; the specificity was 84.4%. Positive predictive values ranged from 51.3% to 63.4%, and negative predictive values ranged from 87.6% to 88.7%. Overall, 13.7% of visits were the result of acute episodes of partner violence.

Conclusion.—Three brief directed questions can detect a large number of women who have a history of partner violence.

PARTNER VIOLENCE is an important health risk for many women. High rates of violent assault have been detected in emergency departments, prenatal clinics, and general medical practices. Estimates of partner violence in the general population vary, depending on the source of the data. According to 1 recent national household survey, over 1 million women and nearly 150,000 men are victims of partner violence each year. Population-based studies suggest that 8% to 12% of women experience some form of partner violence in any given year. One characteristic of partner violence is that the threats, intimidation, control, and physical battering escalate over time. All too often, unremitting battering of women leads to homicide: 17% of the nation's homicides occur within the family, and more than half of all women murdered in the United States are killed by a current or former partner.

Despite the significant rates of morbidity and mortality associated with partner violence, the common assertion is that physicians detect only a small percentage of cases. As a result, routine screening of all women presenting to physician offices, emergency departments, and prenatal clinics has been recommended. The Council on Ethical and Judicial Affairs of the American Medical Association stated that “due to the prevalence and medical consequences of domestic violence, physicians should routinely inquire about abuse as part of the medical history.” The American College of Emergency Physicians advised that “hospitals develop multidisciplinary policies and protocols for ED [emergency department] identification, treatment, and referral of domestic violence patients” and that “the special nature of and the necessary resources for partner violence screening evaluations and examination should be recognized.” The American Academy of Family Physicians challenged its members to decrease “family violence in America by [learning] to screen, recognize, and treat for domestic abuse.” One of the Public Health Service's objectives for the year 2000 is to “extend [to at least 90% of hospital emergency departments] protocols for routinely identifying and properly referring... victims of sexual assault and spouse abuse.”

What is missing in these policies, protocols, and admonitions is the means to quickly and accurately identify women who are victims of partner violence. Brief screening questionnaires and protocols have been proposed, but only 1 has been validated, partially, against an established “gold standard.” Given the current time constraints imposed on physicians and the lack of accurate, proven screening tools for partner violence, it is not surprising that physicians seldom detect partner violence in their patients.

The objectives of this study were to devise a brief screening instrument for use in the emergency department or other urgent care settings and to validate this screen against established instruments designed to detect partner violence. We
defined partner violence to include physical and nonphysical abuse. We limit the concept in this article to abuse against women by intimate partners, whether male or female; we excluded abuse against men and intergenerational violence.

METHODS

Setting and Patient Recruitment

This prospective study was conducted during the summer of 1994 in 2 urban, hospital-based emergency departments in Denver, Colo. Denver General is a level I trauma center and teaching hospital with an annual census of 55,000 visits per year; University Hospital sees 45,000 patients per year as a teaching institute and referral center.

The target population consisted of all noncritical, English-speaking women who presented to the emergency department. Women were excluded from participation if they were younger than 18 years, or if they had an altered mental status or primary psychiatric diagnosis. Sample size calculations resulted in a target sample of 220 women (estimated acute prevalence 11%; interval estimates ±0.04; α = .05). Expecting an average of 5.5 women per 4-hour time block, 40 shifts would be needed. Because resources allowed for oversampling, a total of 48 time blocks were scheduled. The time blocks were randomly generated by computer to provide a balance of days and times. The selected time blocks included 13 day, 18 evening, and 17 night shifts; 23% of the shifts were weekends. The 48 time blocks were then randomly assigned to 1 of the 2 emergency departments.

Prior to the start of the study, research assistants received 3 hours of training. Two research assistants were present during each time block. The research assistants identified eligible patients, asked them to participate in a study designed to improve women's health care, and obtained informed consent. To encourage participation, disclosure, and safety, all visitors, relatives, and partners were asked to leave the room prior to discussion of the study. Women were approached and data were collected from them in private while they were in an examination room awaiting evaluation or completion of a workup. The research assistants kept a written log of all eligible women, including those who declined to participate. The study was approved by the combined institutional review board for the University of Colorado and Denver General Hospital.

Survey Protocols

This study tested the accuracy of a 3-question partner violence screen (PVS) against 2 detailed standard violence measures, the Index of Spouse Abuse27 (ISA) and the Conflict Tactics Scale28 (CTS). Immediately after obtaining consent, the first research assistant verbally administered the PVS to the woman in private. Then, the research assistant asked each woman to complete the written ISA and to place it in an envelope. Later during the patient's emergency department course, a second research assistant, who was blinded to the results of the PVS and ISA, verbally administered the CTS.8 If necessary, visitors were again asked to leave and data were collected in private. At this time, the women were asked to provide demographic information, including age, race, ethnicity, household income, and level of education. After all data were collected from each participant, information about partner violence and local referral numbers were provided. The research assistant informed the treating physician if the woman identified any recent injuries due to partner violence.

Partner Violence Screen

The brief PVS incorporated 2 dimensions of partner violence. It consists of 1 question that addresses physical violence, and 2 questions that address a woman's perception of her safety. First, women were asked, "Have you been hit, kicked, punched, or otherwise hurt by someone within the past year? If so, by whom?" This question has been included as part of larger screening instruments reported in the literature as early as 1986, and it measures 1-year period prevalence rates.6,7,24,25,29 Two questions were selected to measure the woman's perception of safety; (1) "Do you feel safe in your current relationship?" and (2) "Is there a partner from a previous relationship who is making you feel unsafe now?" Asking about safety has been suggested as a means to measure a woman's short-term risk of further violence and her need for counseling;9,31; however, reliability and validity evaluations have not been published.

The physical violence and safety questions were administered in random order to avoid bias. A "yes" response to the physical violence question was considered positive for partner violence if the perpetrator was a current or former spouse or other intimate partner. For the safety questions, women who reported feeling unsafe because of a current or past partner and those who were unsure about their safety were considered positive for partner violence.27 Women who reported feeling safe and women who had no current or past intimate relationships were considered negative for partner violence. A positive response to any 1 of the 3 questions on the PVS constituted a positive screen for partner violence. For a woman to be considered positive for partner violence, at least 1 question on the PVS was positive. The 3 PVS questions were tested individually and as a combined screen against the ISA and CTS.

Index of Spouse Abuse

The ISA measures the severity of physical and nonphysical abuse inflicted on a woman by her partner. It consists of 30 items and may be administered in a written or oral format; for this study it was presented as a written, self-administered questionnaire that took about 5 minutes to complete. The wording of several questions was modified for clarity and readability. For example, "My partner treats me like a dunce" was modified to read, "My partner treats me like an idiot." Women were asked to indicate the frequency of these behaviors using a 5-item response set from 1 (never) to 5 (very frequently). The ISA includes 2 scales measuring nonphysical (19 items, α = .93) and physical (11 items, α = .91) abuse. The nonphysical abuse scale (ISA-NP) includes statements such as "My partner orders me around," "My partner treats me like an idiot," and "My partner acts like I am his personal servant." The physical abuse scale (ISA-P) includes "My partner slaps me around my face and head," "My partner makes me perform sex acts which I do not like or enjoy," and "My partner punches me with his fists." Items are weighted, summed, and standardized for each scale.27 Missing responses are replaced by the mean score of the completed items within each scale. The possible range of scores for each scale is 0 to 100, with higher scores representing increasing severity of abuse. Threshold values have been developed to dichotomize women as abused or nonabused.27 These cutoff scores are 25 for the ISA-NP scale and 10 for the ISA-P scale.

Conflict Tactics Scale

The CTS (Form N) measures the use of reasoning, verbal aggression, and physical violence in resolving family conflicts; it has also been previously used to test performance of screening exams.6,28 It was verbally administered in this study. For each of 19 items, women are asked the number of times each action occurred during the past year on a 7-point ordinal scale from 0 (never) to 6 (more than 20 times). The actions range in severity from low in coerciveness (eg, "Discussed the issue calmly") to physical violence (eg, "Used a knife or gun"). The CTS includes 3 scales: Reasoning (5 items, α = .69); Verbal Aggression (7 items, α = .84); and Violence (9 items, α = .96). Only the Verbal Aggression and Violence scale results are analyzed in this report, since reasoning tactics are not known to correlate with abuse. Missing items were replaced by
the mean score of the scale completed items. Scores are standardized for each scale, resulting in a possible range of 0 to 100 for each scale. A national probability sample of 2105 women provided percentile norm data. We judged women scoring above the 95th percentile of the normative data as positive for abuse. While Straus and Sweet later chose the 95th percentile as the cutoff for the Verbal Aggression scale, we chose the more conservative 95th percentile. Using these standardized scores, a score of higher than 45.2 was used to define a relationship positive for verbal abuse, and a score of higher than 7.4 was used to define a relationship positive for physical abuse.

**Other Partner Violence Questions**

Following administration of the CTS, all women were asked about acute partner violence, which was defined as a positive answer to either of 2 questions: (1) "Are you here today due to injuries from a partner?" and (2) "Are you here today because of illness or stress related to threats, violent behavior, or fears due to a partner?" Last, we asked women to indicate if they had ever been assaulted and injured severely enough to seek medical attention, and whether the police had ever been called to their homes as a result of an intimate partner dispute.

**Data Analysis**

Means (±SDs) were calculated for the standardized scores for the ISA and CTS scales. The rates of partner abuse are reported with 95% confidence intervals (CIs) for the ISA, CTS, and CTS based on the scoring procedures outlined above.

To calculate the accuracy of the CTS, 2×2 tables were constructed. The ISA and CTS were considered the gold standards against which the PVS was judged, and sensitivity, specificity, and predictive values were calculated. In addition, the Wilcoxon rank sum test was used to compare scores for the ISA and CTS scales between those testing positive and negative on the PVS.

**RESULTS**

During the 48 study time blocks, there were 491 emergency department visits by women. Of these, 426 met all eligibility criteria. The research assistants missed 57 women (13%) due to heavy volume of patients at various times, and 47 women (11%) refused to participate. Thus, 322 (76%) of the eligible patients participated in the study. There were no statistically significant differences between respondents and nonrespondents in age, race, insurance status, or study site (Table 1).

The study sample was racially and ethnically diverse and included large numbers of insured and uninsured women.

**Table 1.—Characteristics of Respondents and Nonrespondents**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Respondents (n=322)</th>
<th>Nonrespondents (n=104)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean±SD, y</td>
<td>36±16</td>
<td>38±16</td>
<td>.17</td>
</tr>
<tr>
<td>Race, %</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>19</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>White</td>
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<td>.13</td>
</tr>
<tr>
<td>Hispanic</td>
<td>30</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>No insurance, %</td>
<td>56</td>
<td>54</td>
<td>.76</td>
</tr>
<tr>
<td>Study site, %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City hospital</td>
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<td>45</td>
<td>.64</td>
</tr>
<tr>
<td>University hospital</td>
<td>52</td>
<td>54</td>
<td></td>
</tr>
</tbody>
</table>

**Partner Violence Scale**

All 322 study patients completed the PVS. Thirty-seven women (11.5%) reported feeling unsafe in their current partner relationship. Forty-two women (13.0%) reported feeling unsafe due to a past partner, including 31 who now felt safe in their current relationship. All together, 68 women (21.1%) reported feeling unsafe from a current or previous partner.

Eighty-two women (25.5%) reported being physically assaulted (hit, kicked, punched, or otherwise hurt) by someone within the past year; for 61 women (18.9%), the perpetrator was a current or past partner. For the other 21 women, the perpetrator was a stranger (n=9), an acquaintance (n=5), other family member (n=5), or occurred in the workplace (n=2). Overall, the safety and physical violence questions in the PVS identified 95 women (29.5%; 95% CI, 24.6%-34.8%) as positive for partner abuse.

**Index of Spouse Abuse**

Of the 322 women who were asked to complete the ISA for a current partner, 255 women (79.2%) returned completed surveys. Scores on the ISA-NP scale ranged from 0 to 99.8 (mean±SD, 14.4±20.7; median, 4.6). The distribution was nonnormal with 29.5% of the respondents scoring 0. Using 25 as the cutoff value, 52 women (20.4%) were categorized as nonphysically abused. Scores on the ISA-P scale ranged from 0 to 94.5 (mean±SD, 9.7±19.1; median, 1.4). The distribution was again nonnormal with 40.4% scoring 0. Using 10 as the cutoff value, 51 women (20.0%) were categorized as physically abused. Overall, including physical and nonphysical scales, 62 women (24.3%; 95% CI, 19.2%-30.1%) were positive for spouse abuse by the ISA.

**Conflict Tactics Scale**

Two hundred seventy-eight women remained in the emergency department for the CTS interview. Of these, 230 reported having a partner in the past year (194 with current partner, 36 with previous partner) and completed the CTS. Forty-eight women reported no current or previous partner and did not have the CTS administered. Scores on the CTS Verbal Aggression scale ranged from 0 to 92.9 (mean±SD, 28.0±25.2; median, 21.4). While positively skewed, only 12.2% of the respondents scored 0 on this scale. Using 45.2 as the cutoff value, 50 women (21.7%) were categorized as verbally abused. Scores on the CTS Violence scale ranged from 0 to 98.2 (mean±SD, 7.4±16.6; median, 0). The distribution was nonnormal with 67.4% women scoring 0. Using 7.4 as the cutoff value, 50 women (21.7%) were categorized as physically abused. Of the 36 women with only a previous relationship and no current relationship, the prevalence of partner violence was 43%. Overall, 63 women (27.4%; 95% CI, 21.7%-33.6%) were positive for partner abuse by the CTS.

**Demographic Information**

Only the 278 women who were interviewed by the second research assistant answered the demographic questions. Forty-nine percent of the women were employed. Two hundred twenty-eight women knew their household income; of these, nearly two thirds (64%) reported incomes less than $15,000. Sixty-seven percent of the women had at least a high school diploma or equivalent degree. Twenty-nine percent of women were married or widowed, 33% were divorced or separated, and 38% had never been married.

**Acute and Prior Partner Violence**

Based on self-report, 7.2% of the emergency department visits were attributed to acute injuries from a partner, and 11.5% of visits were attributed to acute stress related to partner abuse. Overall, 13.7% of visits were associated with acute partner violence. Of the 38 women presenting for an injury or illness related to partner violence, 8 had a negative PVS and negative scores on their ISA and CTS. Interestingly, 20 of the 38 women reported being "safe" in their relationships, and 17 denied being hurt by a partner or previous partner within the past year. Thirty women (10.9%)...
indicated that they had seen a doctor within the past year as a result of injuries sustained from partner violence. Fifty-six women (20.1%) reported that the police had been called to their house because of an argument with a partner at least once in the past 12 months.

Accuracy of the PVS

The median scale scores for the ISA and CTS were compared in women with positive and negative PVSs. The median scores were significantly higher on all scales among women who screened positive (ISA-NP 19.9, ISA-P 9.8, CTS-Verbal Aggression 50, CTS-Violence 11.1), compared to those who screened negative (ISA-NP 2.3, ISA-NP 0, CTS-Verbal Aggression 14.3, CTS-Violence 0) (all P values <.01).

Using the ISA as a gold standard, the sensitivity of the PVS in detecting partner violence was 64.5% (Table 2). The specificity was 80.3%. With a prevalence of partner abuse of 24.3%, the positive predictive value of the PVS was 51.3%, and the negative predictive value was 87.6%.

Compared with the CTS, the sensitivity of the PVS in detecting partner violence was 71.4%. The specificity was 84.4%. With a prevalence of 27.4%, the positive predictive value of the PVS was 63.4%, and the negative predictive value was 88.7%.

False Negatives.—Thirty-three women with a negative overall PVS had a positive score on the ISA, CTS, or both. Thirteen (39.3%) of these women scored positive for verbal aggression or nonphysical abuse alone, without scoring positive for physical violence. There were 7 women with a negative PVS who had positive scores on the Physical Violence scales of the ISA and the CTS.

False Positives.—Forty-three women screened positive for abuse on the PVS yet had noabuse scores on the ISA, CTS, or both. Fifteen (34.9%) of these women indicated a safe current relationship on the PVS, with an unsafe previous relationship, resulting in a positive screen for partner violence. Their ISA and CTS scores reflect their current safe relationships, as these instruments do not measure ongoing abuse from previous partners.

### Table 2.—Partner Violence Screen Performance*

<table>
<thead>
<tr>
<th>Performance</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Positive Predictive Value</th>
<th>Negative Predictive Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compared with the ISA</td>
<td>Physical violence</td>
<td>53.2</td>
<td>89.1</td>
<td>61.1</td>
</tr>
<tr>
<td>Safety</td>
<td>48.4</td>
<td>87.6</td>
<td>55.6</td>
<td>84.1</td>
</tr>
<tr>
<td>Combined</td>
<td>64.5</td>
<td>80.3</td>
<td>51.3</td>
<td>87.6</td>
</tr>
<tr>
<td>Compared with the CTS</td>
<td>Physical violence</td>
<td>68.2</td>
<td>94.6</td>
<td>82.7</td>
</tr>
<tr>
<td>Safety</td>
<td>39.7</td>
<td>87.4</td>
<td>54.4</td>
<td>79.4</td>
</tr>
<tr>
<td>Combined</td>
<td>71.4</td>
<td>84.4</td>
<td>63.4</td>
<td>88.7</td>
</tr>
</tbody>
</table>

*For Index of Spouse Abuse® (ISA), n=255; prevalence of partner violence=64.3%. For Conflict Tactics Scale® (CTS), n=230; prevalence of partner violence=27.4%. "Combined" includes a positive score for physical violence or safety.

about physical abuse, sexual abuse or assault, and feelings of safety. They also administered the CTS and the ISA. Although the mean CTS and ISA scores were higher among women classified as abused (based on the AAS), standard test characteristics (sensitivity, specificity, predictive value) of the AAS were not reported. Other studies that used the AAS reported that a woman's risk for homicide is increased if she screens positive, and that standardized screens are more effective than a routine interview in detecting partner violence.

For most screening instruments the principal goal is to maximize sensitivity. In the current study the sensitivity of the PVS was suboptimal. The 33 false negatives are of clinical concern. Of these false negatives, 13 (39.3%) were experiencing nonphysical and verbal abuse alone, with no evidence of physical abuse. Despite verbal threats, intimidation, insults, and emotional abuse, these women stated that they felt safe in their relationships. Whether they are at risk of escalating nonphysical or physical abuse is unknown. Seven women stated that they felt safe in their relationships and had not been hurt by a partner, yet scored positive on both the ISA and the CTS. Of note, screening for past exposure to partner violence does not obviate the need to ask directly about acute incidents of partner violence. Eight women who presented for an injury or illness related to partner violence had negative ISA and CTS scores and screened negative on the PVS. In clinical practice, a direct question, "Are you here today due to injury or illness related to partner violence?" must be added to the PVS to detect women with acute, as well as prior, partner violence.

One important observation is that queries about partner violence should not be limited to women who are married or who have current partners, nor should questions about partner abuse be restricted to current partners. First, we observed that women may have multiple, changing relationships, and some are unsure how to define them (current or past). In addition, the highest prevalence rate of partner violence (43.0% on the CTS) was noted in women with only a previous relationship and no current partner. Our PVS identified 15 women with abusive previous partners who had nonabusive current relationships. Overall, 13.0% of women in our study continued to feel "unsafe due to previous partner." Clearly, health care professionals should inquire about partner violence in all women, regardless of perceived relationship status.

The prevalence rate of partner violence in our study is similar to those previously reported. The 1-year prevalence rate using the CTS was 27.4%; the prevalence
rate for abuse in a current relationship was 24.3% based on the ISA. Using our 3-question screen, 29.5% of women tested positive for partner violence. A recent study, also conducted in Denver, reported a lifetime cumulative prevalence rate of 54%.5

There are several important limitations to our study. First, not all women who were eligible for the study agreed to participate and to complete all 3 interviews. Nonparticipants and participants were similar in age, race, and insurance status. However, they might have differed in other unmeasured characteristics such as education, alcohol history, and chief complaint. The written format of the ISA may have presented both literacy and privacy problems for participants; 20% of women did not complete the ISA questionnaire. Forty-four (16%) of the women did not complete the verbally administered CTS, either by choice or because their emergency department evaluation was completed before the second research assistant could administer the questionnaire.

Second, our study protocol excluded women with critical illness and injuries and those with primary psychiatric conditions; we may have missed some women with injuries, overdoses, or illnesses caused by partner violence.

Third, while sexual assault among intimates is an important aspect of partner violence, our screen does not inquire explicitly about sexual assault or "marital rape." The ISA contains a single question concerning forced sexual activities; the CTS has no question specific to sexual assault. Further research is needed to investigate this dimension of partner violence.

Fourth, the CTS and ISA may not be perfect gold standards for partner abuse. Both instruments were designed primarily to measure violence, not to screen for violence. The data are based on self-reports, without verification of relationships or patient responses. Additionally, the instruments are limited to evaluating 1 ongoing relationship at a time; as noted earlier, the term "partner" is subject to interpretation.

Fifth, our study was limited to 2 urban emergency departments and to English-speaking women; the performance of the PVS may be different in other clinical settings, where patient demographics, illnesses, and the prevalence of partner violence are different and may not apply to other groups.

Sixth and most important, the CTS and ISA detect past exposure to partner violence; what clinicians really seek is a method to detect continuing and escalating violence. There is evidence that past abuse is a risk factor for future injury and abuse, but this link was not investigated in this study.

CONCLUSIONS

In summary, about 1 (27%) of every 4 women using emergency departments has a history of physical or nonphysical partner violence in the previous year. This study shows that 3 brief questions (the PVS) will detect 64.5% to 71.4% of women who have such a history. In fact, 1 single question ("Have you been hit, kicked, punched, or otherwise physically hurt by someone in the past year? If so, by whom?") performed almost as well as the combined 3-question PVS.

All women seeking care in emergency departments should be asked directly about partner violence, regardless of marital status or current relationships. This inquiry should ask about acute episodes of partner violence as well as past exposure to partner violence. Patients with positive screens should have this history documented in the medical record, and they should be offered support, counseling or, at the very least, referrals to safe shelters and an action plan to ensure their future safety. More research is needed to determine the best way to identify patients most likely to be battered in the future. Studies are also needed to determine whether referrals to safe houses, counseling, police arrests, or perpetrator treatment programs are effective interventions for partner violence.

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