

8-22-2008

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## Recommended Citation

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# **Validity of a Modified Partner Violence Screen for Measuring Intimate Partner Violence in Female Trauma Patients**

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## Abstract:

**Purpose:** The purpose of this study was to assess the validity of a modified Partner Violence Screen (PVS) for measuring severe lifetime and past-year intimate partner violence (IPV) victimization among female trauma patients.

**Background:** Intimate partner violence (IPV) is a major medical and public health problem that affects as many as 5.3 million U.S. women annually. However, recent studies report that as few as 7% of women have ever been asked about IPV by a health care provider. Brief screening tools have been developed to increase screening by health care providers.

**Methods:** A cross-sectional study was conducted at the University of New Mexico Hospital Trauma Center. Face-to-face interviews were conducted with a racially/ethnically diverse sample of 197 women who were admitted to the level 1 regional trauma service from April 2003 through June 2005. Statistical analyses were performed to assess the sensitivity and specificity of the PVS for measuring severe lifetime and past-year IPV, using the severe items of the revised Conflict Tactics Scale (CTS2) as the gold standard. Validity of the PVS for measuring severe lifetime IPV was also assessed separately for Hispanics, Native Americans, and White non-Hispanics.

**Results:** In the entire study sample, the PVS had a sensitivity of 80.6% (95% confidence interval [CI]: 70.9-87.8%) and a specificity of 95.1% (95% CI: 88.5-98.2%) for detecting any lifetime severe IPV, and a sensitivity of 70.3% (95% CI: 52.8-83.6%) and a specificity of 97.4% (95% CI: 92.1-99.3%) for detecting any past-year severe IPV. The PVS had sensitivity of 77.8-85.7% and a specificity of 93.5-96% when examining Hispanic, Native American, and White non-Hispanic women individually.

**Conclusion:** The PVS is a valid screening tool for measuring severe lifetime IPV in Hispanic, Native American, and White, non-Hispanic female trauma patients. The PVS had lower sensitivity for measuring severe IPV in the past year and thus may not be as valid for measuring recently experienced IPV. More research needs to be conducted with larger samples to determine appropriate screening tools to further prevent and help victims of IPV.

## **Introduction**

### **Intimate Partner Violence as a Medical Problem**

Intimate Partner Violence (IPV) is a major health problem in the United States that results in acute injuries, chronic health and mental health problems, and in some cases, death.<sup>1,2</sup> IPV has been defined as, “actual or threatened physical, sexual, psychological, or emotional abuse by a current or former spouse (including common-law spouse), dating partner, boyfriend or girlfriend.”<sup>1</sup> According to the National Violence Against Women Survey (NVAWS), 5.3 million intimate partner violence victimizations occur among U.S. women ages 18 and older each year.<sup>2</sup> Nearly 25% of women surveyed reported being raped and/or physically assaulted by an intimate partner at some point in their lives. More than 40% of the women who experienced partner rapes and/or physical assault sustained a physical injury. These assaults result in nearly 2 million injuries per year, 550,000 or more requiring medical attention, and in nearly 1300 deaths.<sup>2</sup>

Intimate partner violence not only accounts for physical and emotional injuries, chronic health problems, and death, it also has a major economic impact on our society. The costs of IPV exceed \$5.8 billion each year.<sup>3</sup> Nearly \$4.1 billion is for direct medical and mental health care services. IPV also accounts for 8 million days of lost paid work and 5.6 million days of lost household productivity.<sup>3</sup> Studies have also found that victims of IPV cost health plans 92% more than general female patients.<sup>4</sup> Frequent visits to the emergency department, hospital stays, and mental health services comprise most of these increased costs.

## **IPV Screening Instruments**

Many organizations, including the Centers for Disease Control and Prevention<sup>5</sup>, College of Obstetricians and Gynecologists<sup>6</sup>, and the American Medical Association<sup>7</sup> recommend screening women in clinical settings for IPV in order to identify and help victims. Despite these recommendations, recent studies have shown that only 7% of women reported that they were ever asked about IPV by a health care professional.<sup>8</sup> Proposed reasons as to why screening rates are low include healthcare providers fear of offending or angering the victim, lack of training, lack of time, and the belief that IPV is not a problem in their current patient population.<sup>9</sup> Siegel et al demonstrated that a majority of women in their sample population which consisted of women at one of two urban clinics actually favored routine inquiry by a health care provider about physical or sexual abuse.<sup>10</sup> Only 7.9-9.5% of women stated they would feel angry or offended if questioned about IPV by a health care professional.<sup>11, 12</sup> In a study conducted by Weinsheimer et al, 90.9% of women stated that talking to a trauma center health care provider about IPV issues would help them figure out what they needed to do to be safe from the person who harmed them.<sup>12</sup>

Various screening methods have been introduced to identify victims of IPV. The Conflict Tactics Scale (CTS) was introduced in 1979 by Straus as a way to measure violence within familial situations.<sup>13</sup> In 1996, the Conflict Tactics Scale was revised (CTS2) to include questions that measure sexual coercion and physical injury, items to enhance content validity and reliability, better differentiation between minor and severe levels of each scale, and revised wording to increase clarity and specificity of the questions. However, the complete CTS2 is comprised of 78 questions encompassing 5 scales: negotiation, psychological aggression, physical violence, sexual coercion and injury,<sup>14</sup> and thus can take a lot of time to administer.

In situations where there is not much time to administer a screen for various reasons, brief screening instruments have been developed to quickly identify victims of IPV. The Index of Spouse Abuse (ISA)<sup>15</sup>, Hurt, Insulted, Threatened, or Screamed at (HITS)<sup>16</sup>, the Abuse Assessment Screen (AAS)<sup>17</sup>, and the Partner Violence Screen (PVS)<sup>18</sup> are all screening tools that have been developed to screen for IPV. The PVS is frequently used in emergency departments and will be the focus of this study.

In 1997, Feldhaus et al introduced the PVS.<sup>18</sup> The PVS consists of three questions, including a single question that addresses physical violence, “Have you been hit, kicked, punched or otherwise hurt by someone within the past year?”. The last two questions address a woman’s perception of her safety, “Do you feel safe in your current relationship?” and “Is there a partner from a previous relationship who is making you feel unsafe now?”.<sup>18</sup> Feldhaus’ initial study found that the PVS had a sensitivity of 71.4% and a specificity of 84.4% when compared to the Conflict Tactics Scales.<sup>18</sup> The 322 women surveyed were patients in two urban emergency departments in Colorado. This screening tool has since been widely used in emergency departments as a quick and easy way to screen for IPV.

Only a few studies have tested the validity of the PVS in settings other than emergency departments. In 2001, Koziol-McLain et al<sup>19</sup> examined the validity of the PVS in predicting future IPV among women who had participated in a population-based, statewide telephone survey. The PVS in this study was measured against items from both the CTS and CTS2. This study showed that the PVS had a sensitivity of 80% and a specificity of 93% when compared to

the CTS for predicting future severe physical IPV.<sup>18</sup> In 2004, Houry et al<sup>20</sup> measured the ability of the PVS to predict future assaults and violence against women. The study participants were female emergency department patients who were screened for domestic violence. The study found that women who screened positive for IPV on the PVS were 11 times more likely to experience violence from a current or past partner over the next four months.<sup>21</sup>

A study measuring the validity of the PVS has not been conducted in the southwestern United States. Southwestern states have very diverse populations. For example, when compared to the rest of the United States, New Mexico's population has a much higher percent of persons of Hispanic or Latino origin (42.1% vs. 12.5% for U.S.) and of American Indian or Alaska Native descent (9.5% vs. 0.9% for U.S.).<sup>21</sup> Much of the state is made up of rural communities, most lacking adequate health care. A recent study conducted by Hazen et al investigated IPV among Latina women in California. They reported that 33.9% of Latina women studied experienced physical violence, 20.9% experienced sexual coercion and 82.5% experienced psychological aggression by an intimate partner at some time in the lifetime.<sup>22</sup> Malcoe et al found that 58.9% of Native American women surveyed in Oklahoma reported lifetime physical and/or sexual IPV, 39.1% experienced severe physical IPV, 12.2% reported partner-forced sexual activity, and 40.1% reported lifetime partner perpetrated injuries.<sup>23</sup> The rates reported by both Hispanics and Native American women in these studies are much higher than those reported in the National Violence Against Women Survey.<sup>2</sup>

Further, New Mexico has a very high IPV rate. The 1998 Pregnancy Risk Assessment Monitoring System (PRAMS) surveillance report provided by the Division of Reproductive

Health at the Centers for Disease Control found that 8.2% of women in New Mexico reported being physically abused by their husbands or partner during the 12 months before their pregnancy.<sup>24</sup> This rate was the highest reported out of all 15 states that were included in the survey; rates in the other 14 states ranged from 3.6% - 7.4%. According the New Mexico Coalition Against Domestic Violence, 25,644 cases of IPV were reported in 2003. A total of 75% of these victims were female, and 4450 cases resulted in injuries.<sup>25</sup>

In order to establish the PVS as a valid screening method, more studies need to be conducted in diverse patient populations across the country, particularly in areas with high rates of IPV.

**Aims and Hypothesis:**

Because of the high rate of IPV and severe trauma seen in New Mexico, the setting of our study was the University of New Mexico UNMH Trauma Service. The purpose of this study was to assess the validity of a modified PVS for measuring severe IPV victimization among female trauma patients, using severe items of the CTS2<sup>2</sup> as the gold standard. In particular, we assessed the validity of the modified PVS for measuring a) lifetime severe IPV and b) past-year severe IPV. The corresponding hypothesis of this aim was that the sensitivity and specificity of the modified PVS would be greater than 80% for measuring both severe lifetime IPV and severe IPV occurring in the past 12 months.

A secondary aim of the study was to assess whether the modified PVS is equally valid in measuring severe lifetime IPV in Hispanic, Native American, and non-Hispanic White populations. The corresponding hypothesis for this aim was that the sensitivity and specificity of

the modified PVS would be greater than 80% in measuring severe lifetime IPV among Hispanic, Native American, and non-Hispanic White female trauma patients. Only lifetime severe IPV was examined for this aim because of limited sample size within racial/ethnic groups.

**Methods:**

All English-speaking women ages 18-80 years who were admitted to the University of New Mexico (UNMH) Trauma Service were considered for inclusion in the study. UNMH is the only level I trauma center in the state of New Mexico and serves as the trauma center for southern Colorado, eastern Arizona, and the Navajo Nation. Women were systematically identified from the daily inpatient trauma rosters. The patients were eligible if they spoke English and were able to read the introductory letter accompanying the survey. Women with head trauma and those suffering from psychiatric disorders were ineligible to participate. Of female trauma patients admitted between April 2003 and June 2005, 197 patients were interviewed as part of the study.

The interviews were conducted face-to-face, were administered by a female social worker, female medical student or a male (n=5) or female physician. The interviews lasted approximately 30 minutes and were completely anonymous. All interviews were administered without visitors, family members, or partners in the room. In order to obtain consent without identifying the participants, the women are asked read the introductory letter and to place the introductory letter in an envelope to consent to participate. Participants were informed that they could stop their participation at any point during the interview if any of the questions made them feel uncomfortable.

The survey instrument included a modified PVS and the severe items of the CTS2. The PVS questions were asked before the CTS2 items. The original PVS is comprised of three questions,<sup>10</sup> which were modified for this study to measure IPV in the past year as well as in the woman's lifetime. The severe items of the CTS2 consisted of 14 questions that assessed severe physical assault, sexual coercion, and injury. A question about receiving a bloody lip or black eye was added to the original CTS2 items.<sup>19</sup> The questions for the PVS and CTS2<sup>2</sup> used in this study are provided in Table 1.

Demographic and socioeconomic information were collected for all women participating in the study. To determine race/ethnicity, women were asked which racial or ethnic category best described them. They were given the choices of: 1) American Indian/Alaskan Native, 2) White-non Hispanic, 3) Asian/Pacific Islander, 4) Black or African American, 5) Hispanic/Latino (including Cuban, Puerto Rican, Mexican, New Mexican, and Spanish), or 6) Something else.

Data were collected by trained interviewers and entered into SPSS (version 10). Data entry validation was performed by re-entering a random sample of 10% of previously entered surveys. The responses from these surveys were compared with the original responses using SAS statistical software. Responses that differed between the two data entries were looked up and corrections were made to the original database. Of the 17 surveys that were randomly selected, 7 of those differed from the original dataset. When systematic key entry errors were identified, corrections were made to the dataset.

Statistical analyses were performed to assess the sensitivity and specificity of the modified PVS, using the 14 severe CTS2 items as the gold standard (Table 1). Statistical analysis was performed for the first aim as follows: Items in the CTS2 were counted separately from the PVS and severe lifetime IPV and severe past-year IPV were assessed separately for each scale. For items in the CTS2, never responses were counted as a 0 and constituted a *negative* response. If an answer was > 0, it was considered a *positive* IPV response. For example, if a woman answered > 0 to any CTS2 item (1-14) for the past 12 months, she was considered *positive* for past-year severe IPV and for lifetime severe IPV (because if it happened in the past year, then it happened in her lifetime). If she answered 0 to all 14 CTS2 items for the past year then she was considered *negative* for past-year severe IPV. Likewise, if she answered 0 to all 14 CTS2 items in her lifetime, then she was counted as *negative* for severe lifetime IPV. For items in the PVS, a “no” was also a 0 or *negative* response. A “yes but not in the last year” response was considered a *positive* response for lifetime severe IPV and a “yes in the past year” response was a *positive* for past-year IPV.

Each calculation was entered separately into a table to calculate the sensitivity and specificity of the modified PVS for measuring severe IPV. Separate tables were constructed for lifetime severe IPV and for past-year severe IPV. For the second aim, the statistical analysis was performed by calculating the sensitivity and specificity for lifetime IPV separately among women who were Native American, Hispanic, and non-Hispanic Whites. Positive and negative responses were entered into the following table to calculate sensitivity and specificity.

		CTS2	
		+	-
PVS	+	TP (a)	FP (b)
	-	FN (c)	TN (d)

\*TP= True positive, FP= False positive, FN= False negative, TN+ True Negative

Sensitivity =  $a / (a+c)$

Specificity =  $d / (b+d)$

**A Priori Power Calculation:**

As part of the design for this study’s hypothesis, we used information from the first 95 enrolled patients<sup>16</sup> to determine the level of statistical confidence we would have in our results based on a final sample size of 150 patients. For a somewhat conservative estimate, we assumed that we would have a final sensitivity of 80% and 85%.

Past-year severe IPV:

We determined that if the sensitivity were 80%, then the estimated 95% confidence interval (CI) would be 61.9% - 91.9%.

If sensitivity was 85%, then the estimated 95% CI would be 69.2% - 95.8%.

Lifetime IPV:

If the sensitivity was 80%, then the 95% CI would be 68.9% - 88.0%.

If the sensitivity was 85% then the 95% CI would be 74.8% - 92.1%.

The confidence intervals were estimated to be wider for aim 2, which was determined to limit the power to measure differences among the racial/ethnic groups. However, we concluded that it would still be valuable to examine the sensitivity and specificity for the different groups, along with the confidence intervals, since this had not been studied previously.

**Results:**

We compared the validity of the PVS versus the CTS2 for measuring severe IPV in four population groups. The first analysis examined all women in the study, regardless of race. The second, third, and fourth analyses examined Native American, Hispanic, and White, non-Hispanic populations individually.

Within each of these four categories, IPV was divided into severe physical IPV, and any severe IPV. In the total sample, we assessed both lifetime and past-year IPV. For the Native American, Hispanic, and White, non-Hispanic populations, we only assessed lifetime IPV because of limited sample sizes to adequately assess past-year IPV.

*All Races:*

For the entire sample, the sensitivity of the PVS for detecting any lifetime severe IPV was 80.6% (95% CI of 70.8-87.8%) and the specificity was 95.1% (95% CI of 88.5-98.2%). The sensitivity of the PVS for detecting severe lifetime physical IPV, was 83.0% (95% CI: of 73.1% - 89.8%) and the specificity was 93.4% (95% CI: of 86.4-97.1%).

For the entire sample, the sensitivity of the PVS for detecting *any* past-year severe IPV was 70.3% (95% CI: 52.8-83.6%) and the specificity was 97.4% (95% CI: 92.1 - 99.3%).

The sensitivity of the PVS for detecting severe past-year *physical* IPV was 83.9% (95% CI: of 65.5-93.9%) and the specificity was 97.6% (95% CI: of 92.5-99.4%).

*Native Americans:*

Among Native American women, the sensitivity of the PVS for detecting any lifetime severe IPV was 77.8% (95% CI: of 57.26- 90.62%) and specificity was 96% (95% CI: of 57.26- 90.62%). The sensitivity and specificity of the PVS for detecting women who experienced lifetime severe physical IPV was 77.8% (95% CI: of 57.3-90.6%) and 96% (95% CI: of 77.7- 99.8%), respectively.

*White, Non- Hispanic:*

The sensitivity and specificity of the PVS for detecting those who experienced any lifetime severe IPV was 85.7% (95% CI: of 66.4- 95.3%) and 95.2% (95% CI: 82.6-99.2%), respectively. The sensitivity of the PVS for detecting lifetime physical IPV was 88.0% (95% CI: of 67.6- 96.8%) and a specificity of 91.1% (95% CI: of 77.9-97.1%).

*Hispanics:*

The sensitivity of the PVS for detecting women who experienced any lifetime severe IPV was 77.8% (95% CI: of 60.4- 89.3%); specificity was 93.5% (95% CI: of 77.2-98.9%). Sensitivity (82.4% [95% CI: 64.8-92.6%]) and specificity (94.0% [95% CI: of 78.4-98.9%]) of the PVS were similar for detecting severe lifetime *physical* IPV.

*Positive Predictive Value:*

The positive predictive value (PPV) is important for clinicians as it reflects the probability that a positive test actually reflects IPV experienced in the patient population. In our sample of female trauma patients, the PPV was 90-93.8% for any severe IPV or physical severe IPV regardless of time period assessed (lifetime or past year). Within racial/ethnic groups, PPV was similarly high (92.3-95.5%) for lifetime severe IPV

**Discussion:**

The data obtained from this study support our hypothesis that the PVS is a valid screening tool for measuring severe IPV in female trauma patients. Similar to findings of prior studies, we found that the PVS had a sensitivity of 80% and specificity of 95.1% in our total sample population for detecting any lifetime severe physical IPV and a sensitivity of 83% and specificity of 93.4% for detecting physical lifetime severe IPV. Feldhaus et al<sup>17</sup> determined that the PVS had a sensitivity of 71.4% and specificity of 84.4% when compared to the CTS for detecting past year IPV. Koziol-McLain et al<sup>18</sup> showed that the PVS had a sensitivity of 80% and a specificity of 93% when compared to the CTS2 for predicting future severe IPV based on a survey questioning past year IPV. Houry et al further demonstrated the validity of the PVS and its ability to predict future violence by reporting women who screened positive for IPV were 11.3 times more likely to experience physical IPV and 7.3 times more likely to experience verbal aggression compared to women who screened negative on the PVS.<sup>20</sup>

Our study not only examined the validity of the PVS in the general female trauma population, but also in specific racial/ethnic groups. Although the sensitivity for detecting any lifetime severe IPV in Native Americans and Hispanics was lower than the sensitivity of Non-Hispanic whites, the 95% CI were wide indicating true sensitivity may not be the same for these groups. These findings suggest that the PVS is good screening tool for detecting lifetime IPV in Native American and Hispanic populations.

When examining the population as a whole, the sensitivity of the PVS for detecting women who experienced any past-year severe IPV was substantially lower (70.3%) than the sensitivity of the

PVS for detecting past-year severe physical IPV (83.9%). In order to account for this disparity, we examined the wording of the questions in both the PVS and the CTS2. The PVS asks “Have you ever been hit, kicked, punched, or otherwise hurt by someone?” The PVS does not specifically ask about severe sexual violence or severe injury as does the CTS2. After further examining the responses from our participants, the specific wording seemed to be the major contributing factor to this difference in the data. Another possible explanation for the disparity could be cultural differences between Native Americans and Hispanics versus Whites. In these cultures, especially Native American cultures, it can be taboo to talk about IPV.

We also found that there is an advantage to using the PVS versus the CTS2. The PVS not only asks about violence inflicted by an intimate partner, but also violence from non-partners. Since our study did not look at violence from non-partners, these data were not included in our results.

Based on our results and the overwhelming rates of IPV in the population, we recommend that the PVS be used as a screening tool for measuring intimate partner violence in female trauma patients. The PVS is short and concise, which makes it useful in trauma situations. Because the PVS does not ask about severe sexual violence or severe injury, it might be recommended to re-word the initial question on the PVS include these types of violence. A possibility could be “Have you ever been threatened, hit, kicked, punched, forced to have sex or other wise hurt by someone?” An additional question could be included for positive responses asking about visits to the doctor or hospitalization occurring from these actions. It may also be helpful to prompt the patient to think about all relationships including intimate partners such as a boyfriend, fiancé, men or boys they have dated as well as a current partner before administering the PVS. By

doing this, we may be able to help the patient to remember a situation that occurred a long time ago, or a situation that may have only occurred once.

The results from this study further support the evidence that routine screening needs to increase in health care settings. The high rates of IPV in the Hispanic and Native American populations indicate that more needs to be done in terms of education, prevention and treatment for this major public health issue. More training needs to be implemented for physicians as well as medical students. In a study examining medical student's attitudes about experiences and practices regarding IPV, although 91% reported receiving at least some training, only one fifth of the population studied felt they had extensive training.<sup>26</sup> Only about 30% of medical students reported that they felt highly confident about talking to their patients about IPV.<sup>26</sup> A report issued by the Association of American Medical Colleges in 2004 stated that 20% of graduating physicians felt that curriculum addressing the issue of IPV was inadequate.

***Strengths and Limitations:***

Our study has many strengths. Because of New Mexico's highly diverse population, we were able to sample a greater number of Hispanic and Native American women as compared to other studies about IPV. The data that were collected has the potential to influence prevention, screening and treatment of IPV. This study can also promote further research in IPV especially in New Mexico and other areas with high populations of Native Americans and Hispanics. New Mexico also has a high rate of IPV, making it an ideal place to conduct research on IPV in order to help decrease the rates and provide services for victims.

There are a few limitations to consider in this study. We were only able to collect 197 surveys by the close of the study. Our final sample size was primarily limited by the number of women who were admitted to the UNMH trauma service during the study period. Because our sample size was limited, we were not able to assess the validity of the PVS for assessing past-year IPV among Native Americans or Hispanics.

Survey administration could have also played in role in the lower sensitivities that were seen in the Native American and Hispanic populations. Thackery et al demonstrated that White and African American women surveyed were more comfortable with a female screener than a male screener.<sup>11</sup> It was also shown that both White and African American women are more comfortable being screened by women of their own race.<sup>11</sup> The Hispanic and Native American sample was too small in their study to adequately analyze preferences in these populations. These preferences could have played a role in our study. Out of the 5 screeners who administered the survey, one screener was male and only one woman was of Hispanic/Latino descent.

Recall and reporting bias also need to be considered as the PVS and CTS2 are based on self report.

#### Conclusion:

Although the PVS seems to be a good screening tool overall, improvements could be made in order to increase sensitivity, particularly for assessment of past-year non-physical IPV. Further studies need to be conducted in Hispanic and Native American populations to further investigate prevalence rates, screening methods, and prevention and screening programs. In order to

increase screening, implementation of prevention programs and to better understand how to help victims of IPV, more extensive training needs to be provided to physicians starting at the medical school level and beyond. By creating a better screening tool, we could not only help to identify those women in the general population who have experienced IPV, but also those in minority populations who have very high rates. Quick, easy to administer screening tools are necessary to ensure that we provide adequate care for our patients in all fields of medicine.

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**Table 1-** The Revised Conflict Tactics Scales (14 questions, severe items) and the Partner Violence Screen. Questions were modified to measure IPV in the past 12 months and lifetime.

<b>Revised Conflict Tactics Scale- Severe Items</b>	<b>Partner Violence Screen</b> (An introduction is not provided before the PVS).
<p>For past-year questions: <i>Now I would like to ask you about things that may have happened with your (main partner) in the past 12 months, even if it only happened recently or may have stopped altogether.</i> ( Card E)</p> <p>For ever questions: For people answering no to past year for each item or for women without current partner: <i>Now I would like to ask you about <b>all</b> of the intimate or romantic relationships you've had with men <b>in your lifetime</b>, including when you were a teenager. This includes past husbands, boyfriends or men or boys you have dated as well as you current partner.</i></p>	
<p>1. My partner used force (like holding me down or using a weapon) to make me have sex</p> <p><b>Past 12 months*</b></p> <p>Never.....0            1 time.....1            2 times.....2            3-5 times.....3            6-10 times.....4            11-20 times.....5            &gt;20 times.....6</p> <p><b>Lifetime</b></p> <p>Ever Yes.....1            Ever No.....0</p>	<p>1. Have you ever been hit, kicked, punched, or otherwise hurt by someone?            No (skip to 2).....0            Yes but not in the last year.....1            Yes in the last year.....2</p> <p>1a. Was it by a current or former intimate partner or spouse?            No.....0            Yes former partner.....1            Yes current partner.....2</p>
2. My partner <b>threatened</b> me with a knife or gun	2. Do you feel unsafe in your current relationship? (SKIP IF NO CURRENT PARTNER) Yes.....1 No.....0
3. My partner <b>used</b> a knife or gun on me	3. Is there a partner from a previous relationship who is making you feel unsafe or afraid now? Yes.....1 No.....0
4. My partner kicked me, bit me, or hit me with a fist	
5. My partner burned or scalded me on purpose	
6. I went to a doctor because of a fight with my partner	
7. I needed to see a doctor because of injuries caused by my partner <b>but didn't go</b>	
8. My partner used threats to make me have sex	
9. My partner gave me a bloody lip or black eye	
10. My partner choked me	
11. My partner slammed me against a wall	
12. My partner beat me up	
13. I passed out from being hit in the head by my partner	
14. I had a broken bone because of a fight with my partner	
* These response categories were included with every question in the CTS2 in order to assess IPV in the past 12 months and lifetime IPV.	

**Table 2. Sensitivity, specificity, and positive predictive value of the Partner Violence Screen (PVS) versus CTS2 for measuring severe IPV, by time period assessed**

Population	IPV Type	Sensitivity	95% CI	Specificity	95% CI	Positive Predictive Value	Negative Predictive Value
All races	Any lifetime severe –IPV	80.6%	70.9-87.8%	95.1%	88.5-98.2%	93.8%	84.5%
	Physical lifetime severe IPV	83.0%	73.1-89.8%	93.4%	86.4-97.1%	91.3%	86.8%
	Any past-year severe IPV	70.3%	52.8-83.6%	97.4%	92.1-99.3%	90.0%	91.2%
	Physical past-year severe IPV	83.9%	65.5-93.9%	97.6%	92.5-99.4%	90.0%	96.0%
Native American	Any lifetime severe	77.8%	57.3-90.6%	96.0%	77.7-99.8%	95.5%	80.0%
	Physical lifetime severe IPV	77.8%	57.3-90.6%	96.0%	77.7-99.8%	95.5%	80.0%
Hispanic	Any lifetime severe	77.8%	60.4-89.3%	93.5%	77.2-98.9%	93.3%	78.4%
	Physical lifetime severe	82.4%	64.8-92.6%	94.0%	78.4-98.9%	93.3%	83.8%
White, non-Hispanic	Any lifetime severe	85.7%	66.4-95.3%	95.2%	82.6-99.2%	92.3%	91.0%
	Physical lifetime severe	88%	67.7-96.8%	91.1%	77.9-97.1%	84.6%	93.2%

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