Domestic Violence & Traumatic Brain Injury

WE NEED TO STOP DV TODAY
STOP CUTTING YOUR LIFE SHORT

Domestic Violence can Affect the Brain
DV Affects Both Men and Women
DV Affects Children
DV Affects YOU!

Campus Police and Security Agencies:

De Anza Community College Campus
Safety and Security Department • (408) 864-5555
7 a.m. – 12 midnight

Evergreen Valley Community College
Police Department • (408) 270-6468
8 a.m. – 11 p.m. Monday-Friday
and 8 a.m. – 4 p.m. Business Line Only

Foothill Community College Police Department
7 a.m. – 11 p.m. Business Line • (650) 949-7313
7 a.m. – 11 p.m. Emergency Line • (650) 949-7911

Gavilan College Security Department • (408) 848-4703
8 a.m. – 11 p.m. Monday-Friday Business Line Only

Mission Community College Police Department
7 a.m. – 11 p.m. Business Line • (408) 748-2797
After Hours Dispatch Line • (408) 299-2311

San Jose City College Police Department
7 a.m. – 3 p.m. Dispatch Line Only; will Connect
to Evergreen Police Department after 3 p.m.
(408) 288-3735

San Jose State University Department of Public Safety
8 a.m. – 5 p.m. Business Line • (408) 924-2185
24 hour Dispatch Line • (408) 924-2222

Santa Clara University Department of Public Safety
24 Hour Business and Dispatch Line • (408) 554-4441

Stanford University Department of Public Safety
8 a.m. – 5 p.m. Monday-Friday Business Line
(650) 723-9633
24 Hour Non-emergency Dispatch Line
(650) 329-2413

West Valley Community College Police Department
7 a.m. – 11 p.m. Business Line • (408) 741-2092
After Hours Dispatch Line • (408) 299-2311
Investigations Bureau • (408) 741-2068

Created By:
Michelle A. Jorden, MD
Eve Valera, PhD
Jennifer Forrester, MS

Acknowledgments:
Brain sketch courtesy of Jennifer Forrester, MS
Domestic Violence Death Review Team,
Santa Clara County
Valerie Altham, Graphic Designer
Office of the County Executive
Every 60 seconds, 20 more people become victims of Domestic Violence (DV)

What is DV?

- Screaming/name calling
- Making you feel worthless
- Pushing/shoving
- Hitting/slapping
- Punching
- Kicking
- Tripping
- Grabbing/shaking
- Spitting
- Grabbing your neck to choke or strangle you
- Burning
- Forcing you into unwanted sexual activity
- Controlling what you do or who you see or talk to
- Controlling whether you leave the home

Experiencing Domestic Violence can affect all aspects of your life. It can make it more difficult for you to:

- Think clearly
- Plan
- Be physically healthy
- Be emotionally healthy

What can you do?

If you or someone else are in immediate danger CALL 911!!

If you think you may be in an abusive relationship, have a plan with someone you trust and who you can call with a special code word so your abuser does not know what’s going on.

When you are in a safe place, contact local advocacy agencies or law officials to learn about safety options. Below is a list of advocacy and police agencies to contact for additional help.

Victim Advocacy Agencies:

Asian Americans for Community Involvement (AACI)
Asian Women’s Home • (408) 975-2739 • dv.aaci.org

Community Solutions • (877) 363-7238
www.communitysolutions.org

MAITRI • (888) 862-4874 • www.maitri.org/contact.html

Victim Services Unit • (408) 295-2656 • www.svfaces.org

Women SV DVIC • (650) 996-2200 • www.womensv.org

YWCA Silicon Valley Support Network Program
(800) 572-2782 • www.YWCA-SV.org

Police Agencies:

California Highway Patrol • (408) 467-5400

Campbell Police Department
(408) 866-2121 • (408) 378-8161*

Gilroy Police Department • (408) 846-0300

Los Altos Police Department
(650) 947-2770 • (650) 947-2779*

Los Gatos-Monte Sereno Police Department
(408) 354-8600

Milpitas Police Department
(408) 586-2400 • (408) 263-1212*

Morgan Hill Police Department
(408) 776-7300 • (408) 799-2102*

Mountain View Police Department
(650) 903-6344 • (650) 903-6922*

Palo Alto Police Department • (650) 329-2406

Santa Clara County Sheriff’s Office • (408) 299-2311

San Jose Police Department
(408) 277-5300 • (408) 277-8911*

Santa Clara Police Department • (408) 615-4700

Sunnyvale Department of Public Safety
(408) 730-7100 • (408) 736-2644*

Santa Clara County Adult Probation Department
(408) 435-2100

* Some of the Law Enforcement Agencies in Santa Clara County have direct emergency telephone numbers that can be programmed into a person’s cellular telephone. These numbers are provided by the DVDRC for those individuals who may need these numbers as part of their safety planning. The DVDRC recommends that individuals call 911 for all emergencies.
BACKGROUND:

Up to 30–75% of women in physically abusive relationships have been shown to suffer at least one (1) traumatic brain injury resulting from abuse.*

GOAL:

Provide law enforcement and other stakeholders a concise questionnaire assessing traumatic brain injury in both male and female survivors of intimate-partner violence in Santa Clara County. These questions should be asked if the survivor appears to be having difficulty comprehending questions pertaining to the violent incident.

THESE QUESTIONS SHOULD BE ASKED OF EVERY DOMESTIC VIOLENCE SURVIVOR, MALE OR FEMALE.

These questions should be read rather than given as a questionnaire to help accommodate for potential post-traumatic cognitive confusion and/or misinterpretation of the question following the violent act. Additional details about what happened should be asked as needed to determine what happened.

After anything your partner did to you [TIME OF DAY HERE; e.g., tonight, today]:

Did you ever black out or lose consciousness?
[IF ‘YES’] What happened?
[IF PERSON LOST CONSCIOUSNESS]
How long were you out?
Do you have any trouble remembering anything surrounding the loss of consciousness?

After anything your partner did to you [TIME OF DAY AGAIN HERE], did you:

See stars or spots?
Feel dizzy?
Feel dazed or confused?
Feel stunned or disoriented?
Have memory loss about what happened?


Created by:
Michelle A. Jorden, MD
Eve Valera, PhD
Jennifer Forrester, MS
TRAUMATIC BRAIN INJURY AND DOMESTIC VIOLENCE

Women who are abused often suffer injury to their head, neck, and face. The high potential for women who are abused to have mild to severe Traumatic Brain Injury (TBI) is a growing concern, since the effects can cause irreversible psychological and physical harm. Women who are abused are more likely to have repeated injuries to the head. As injuries accumulate, likelihood of recovery dramatically decreases. In addition, sustaining another head trauma prior to the complete healing of the initial injury may be fatal.

Severe, obvious trauma does not have to occur for brain injury to exist. A woman can sustain a blow to the head without any loss of consciousness or apparent reason to seek medical assistance, yet display symptoms of TBI. (NOTE: While loss of consciousness can be significant in helping to determine the extent of the injury, people with minor TBI often do not lose consciousness, yet still have difficulties as a result of their injury). Many women suffer from a TBI unknowingly and misdiagnosis is common since symptoms may not be immediately apparent and may mirror those of mental health diagnoses. In addition, subtle injuries that are not identifiable through MRIs or CT scans may still lead to cognitive symptoms.

What is Traumatic Brain Injury?

Traumatic brain injury (TBI) is defined as an injury to the brain that is caused by external physical force and is not present at birth or degenerative.

TBI can be caused by:

- A blow to the head,
  - e.g., being hit on the head forcefully with object or fist, having one’s head smashed against object/wall, falling and hitting head, gunshot to head.
- Shaking of the brain,
  - e.g., forceful whip-lash motion, actions that force the brain to hit the wall of the skull.
- A loss of oxygen to the brain (anoxia),
  - e.g., airway obstruction caused by choking, strangulation, near drowning or drug reactions.

TBI’s fall into two categories:

- **Penetrating injuries** are caused when a foreign object (knife, bullet) enters through the skull and into the brain, damaging the specific parts of the brain that are localized along the route that the object traveled into the brain.
• **Closed Head Injuries** result when an external force impacts the head but does not fracture the skull. In these cases, two types of damage can occur to the brain:
  - **Primary Brain Damage**, in which the damage is complete at the time of injury.
  - **Secondary Brain Damage**, in which the damage continues to get worse for a period of hours to days after the incident.

TBI can result in mild, moderate, or severe impairments to cognition, behavior, and physical functioning. Symptoms of TBI include, but are not limited to:

**Cognitive Symptoms:**
- Decreased concentration, reduced attention span
- Difficulties with executive functioning (goal setting, self monitoring, initiating, modifying, and/or bringing to completion)
- Short-term and/or long-term memory loss
- Decreased ability to solve problems and think abstractly
- Difficulty thinking straight
- Difficulty displaying appropriate emotional/communication responses (laugh during serious conversation, shout when everyone whispers)
- Difficulty in learning new information
- Difficulty making plans, setting goals, and organizing tasks
- May appear disorganized and impulsive
- Difficulty spelling, writing, and reading
- Difficulty finding the right words and constructing sentences
- Difficulty understanding written or spoken communication
- Difficulty interpreting verbal and non-verbal language
- Decreased functioning of speech muscles (lips, tongue)
- Difficulty in feeling initiative, sustaining motivation
- Depression
- Memory distortions

**Behavioral Symptoms:**
- Changes in behavior, personality or temperament
- Increased aggression and/or anxiety
- Decreased or increased inhibitions
- Quickly agitated or saddened
- Changes in emotional expression (flat, non-emotional, inappropriate or overreactions)
- Avoidance of people, family, friends
- Difficulty sleeping
- Increased irritability or impatience

**Physical Symptoms:**
- Hearing loss
- Headaches, neck pain
- Nausea and vomiting
- Changes in vision (blurred, sensitive, seeing double, blindness)
- Ringing or buzzing in ears
- Dizziness, difficulty balancing

Reprinted with permission of the Empire Justice Center, Building Bridges: A Cross-Systems Training Manual for Domestic Violence Programs and Disability Service Providers in New York, 2006
- Decrease in, or loss of, smell or taste
- Decreased coordination in limbs
- Loss of bowel or bladder control
- Increased sensitivity to noise or bright lights
- Seizures
- Weakness or numbness

** The most common and persistent symptoms are headaches, fatigue, loss of memory, depression, and communication difficulty.

**Recommendations for Working With Women With TBI:**

When a woman is experiencing *difficulty with attention and concentration*:

- Minimize distractions when having detailed conversations.
- Meet individually in quiet locations, with minimum bright lights, and keep meeting times limited.
- Incorporate short breaks.

When a woman is experiencing *difficulty with memory*:

- Write information down. Provide a notebook or calendar to help her remember important information such as police numbers, Order of Protection information, and court dates.
- Encourage the use of a journal or log.
- Discuss strategies for remembering important appointments and dates.
- Provide repetition of information.
- Develop checklists.

When a woman is experiencing *difficulty in executive functioning*:

- Assist in prioritizing goals and break them down into smaller, tangible steps.
- Reduce distractions and allow time when completing tasks.
- Write out steps to a planning or problem-solving task.

When a woman is experiencing *difficulty in processing information*:

- Focus on one task at a time. Break down messages or conversations into smaller pieces and allow for repetition to assist her to understand and process information.
- Talk slowly and on point, repeat information if needed.
- Encourage her to take breaks if needed and to ask for information to be repeated or rephrased.
• Provide information in factual formats, avoiding abstract concepts.
• Double-check with her to ensure that she has understood information.

Additional suggestions:

• Provide reassurance, education, and structure to minimize anxiety.
• Help her fill out forms and make important phone calls.
• Assist her in communicating with others.
• Avoid open-ended questions by using a yes-no format.
• Identify supports, both social and medical, and consistently encourage as much self-determination as possible.
• Always ensure that she is a participant in the process of developing plans and in discussions.
• Offer information in writing or on tape.
• Provide respectful feedback to potential or obvious problem areas.
• Be supportive and continuously identify strengths.

A woman with a TBI who enters the criminal justice system may face additional challenges. She may appear to be disorganized, aggressive, temperamental, or confused. If her behaviors are misunderstood or misdiagnosed as indicating a mental health disability, which often happens, she may have difficulty obtaining custody or being credited as a victim or reliable witness. An increase in awareness of TBI among advocates and program staff will result in increased sensitivity, screening, referrals, accommodations, and ultimately, better outcomes, for women who are abused.

When working with a woman who is abused, it is crucial that appropriate questions are asked and a screening is done for possible TBI. Proper referrals for further screening, evaluation, and services should be given in the case that a TBI is suspected. The following is a brief screening tool that domestic violence program staff and advocates can use.

Domestic violence advocates and program staff should consistently screen women entering shelters and programs for TBI-related symptoms. One way to do this is to use the HELPS, a brief screening tool for TBI. HELPS was specifically designed to be used by professionals whose expertise does not include TBI.

The following two pages were created for programs to include during intake or screening procedures. They may be copied for this use.
** HELPS Screening Tool for Traumatic Brain Injury**

Directions: Score 1 point for every question answered ‘Yes’. A score of 2 or more, particularly if the injury affects function (P), should be considered as a sign of a possible injury that needs to be further explored with a more extensive interview and medical or neuropsychological work-up.

<table>
<thead>
<tr>
<th>Question</th>
<th>No</th>
<th>Yes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H</strong> = Did you ever hit your head? Were you ever hit on your head?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>E</strong> = Were you ever seen in an emergency room by a doctor or hospitalized? If so, for what reason?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>L</strong> = Did you ever lose consciousness? For how long? For what reason?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **P** = Did you have any problems after you were hit on the head?  
- Headaches  
- Dizziness  
- Anxiety  
- Depression  
- Difficulty concentrating  
- Difficulty remembering  
- Difficulty reading, writing, calculating  
- Difficulty performing your old job or school work  
- Changes in behavior or attitude  
- Difficulty problem solving  
- Changes in relationships | | | |
| **S** = Did you have any significant sicknesses after having your head hit? | | | |

---

1 Adapted with permission from the International Center for the Disabled, HELPS Screening Tool, 1992.  
Using the HELPS Tool With Women Seeking Domestic Violence Services:

In the case of domestic violence, women should be asked about various forms of physical abuse that could lead to a brain injury. Advocates and program staff are encouraged to utilize the following checklist, which parallels the categories of the HELPS, to aid in determining if women entering into programs should be seen by a doctor for further evaluation.

____ Did your partner ever Hit you in the face or head? With what?
____ Did your partner ever slam your head into a wall or another object, or push you so that you fell and hit your head?
____ Did your partner ever shake you?
____ Did your partner ever try to strangle or choke you, or do anything else that made it hard for you to breathe?

____ Did you ever go to the Emergency room after an incident? Why?
____ Did they ask you whether you had been hit on the head or indicate that they suspected a head injury or concussion?
____ Was there ever a time when you thought you needed to go to the ER, but didn’t go because you couldn’t afford it or your partner prevented you?
____ If you did go to the ER, did you think you got all the treatment you needed?

____ Did you ever Lose consciousness or black out as a result of what your partner did to you?

____ Have you been having Problems concentrating or remembering things?
____ Are you having trouble finishing things you start to do?
____ Are people telling you that you don’t seem like yourself, or that your behavior has changed?
____ Does your partner say you have changed, and use that as an excuse to abuse you?
____ Have you been having difficulty performing your usual activities?
____ Are you experiencing mood swings that you don’t understand?
____ Has it gotten harder for you to function when you are under stress?

____ Have you been Sick or had any physical problems? What kind?
____ Do you experience any reoccurring headaches or fatigue?
____ Have you experienced any changes in your vision, hearing, or sense of smell or taste?
____ Do you find yourself dizzy or experiencing a lack of balance?
References:


Brain Injury Association of America Website: [www.biausa.org](http://www.biausa.org)


International Center for the Disabled, *HELPS Screening Tool*, 1992


Practice Update: What Professionals Who Are Not Brain Injury Specialists Need to Know About Intimate Partner Violence–Related Traumatic Brain Injury

Christine E. Murray¹, Kristine Lundgren¹, Loreen N. Olson¹, and Gwen Hunnicutt¹

Abstract

There is growing recognition of the risk for traumatic brain injury (TBI) among victims and survivors of intimate partner violence (IPV). A wide range of physically abusive behaviors may lead to injuries to the head or neck and place an individual at risk for a TBI. The purpose of this article is to consolidate current research and present practical guidelines for professionals, who are not brain injury specialists, but work with clients who may have sustained a TBI in the context of IPV. Recommendations are provided for TBI risk screening, making appropriate referrals, and providing services in light of a potential TBI.

Keywords
traumatic brain injury, intimate partner violence, domestic violence, battering, victimization

A small but growing body of literature suggests that intimate partner violence (IPV)—especially physical violence—places victims at a high risk for sustaining traumatic brain injuries (hereafter, TBIs). However, to date, there is minimal guidance to inform practice for nonbrain injury specialist working with victims of IPV (e.g., victim advocates, mental health professionals, shelter staff, and other relevant professional groups), yet professionals who are not brain injury specialists need to understand, screen, refer, and counsel clients who may have cognitive, physical, and/or emotional issues as a result of an IPV-related TBI. As such, the purpose of this article is to consolidate current research in order to present practical guidelines for those professionals outside of the brain injury field. We begin with an overview of the definition, symptoms, and consequences of TBI. Next, we review literature examining TBI risks among survivors of IPV. Finally, we conclude with a series of recommendations for a risk screening for TBI and follow-up interventions in the context of IPV. Throughout this article, the term victim refers to individuals with current experiences of IPV, and the term survivor refers to those who have past experiences of IPV but are no longer in an abusive relationship. This distinction is important because the implications for recovery from TBI and potential for worsening and repeat occurrence of TBI is impacted by whether or not an individual remains to an abusive partnership.

TBI is one of the most common and financially devastating health problems in our society. About 1.75 million people are diagnosed with TBI annually in the United States (Faul, Xu, & Wald, 2010) and recent estimates suggest as many as 320,000 soldiers who have sustained a TBI (Tanielian & Jaycox, 2008) as well as thousands who do not seek medical attention are not included in the overall statistic. Thus, this number is a gross underestimate of the actual occurrence of TBI in the United States (Delaney, Abuzeyad, Correa, & Foxford, 2005). Survivors of IPV are another group that are at high risk for brain injury, yet the statistics on the number of individuals who sustain a TBI from an IPV-related event is unclear because the injury may not be reported or may not be readily apparent. IPV-related TBI is unique from TBIs in other populations at high risk for brain injury because individuals who live with an abusive partner may be subject to frequent unreported and untreated hits to the head. Repeated injuries are especially worrisome because cumulative TBIs are thought to result in a longer recovery time and have more serious consequences (Valera & Berenbaum, 2003).

According to the Brain Injury Association of America (BIAA), “TBI is defined as an alteration in brain function, or other evidence of brain pathology, caused by an external force.” This definition reflects the fact that there are two stages

¹ The University of North Carolina at Greensboro, Greensboro, NC, USA

Corresponding Author:
Christine E. Murray, The University of North Carolina at Greensboro, 224A Curry Building, Greensboro, NC 27412, USA.
Email: cemurray@uncg.edu
of events following a TBI: a primary event and a secondary event. The primary event entails the initial trauma caused by biomechanical forces directly associated with the injury (e.g., being hit on the head with an object), and the secondary event refers to the changes that occur gradually after the initial injury (minutes to weeks), involving an array of neurochemical and neurometabolic events. Typically, the primary force from trauma to the head subsequently leads to neuronal damage (Barkhoudarian, Hovda, & Giza, 2011) followed by a cascade of secondary events affecting the neurons and the neuronal systems. These secondary events have been reported to be more significant and more disruptive to the brain than the primary event. Secondary events may result in structural changes to the neurons, metabolic dysfunction, or cell death (Barkhoudarian et al., 2011; Giza & Hovda, 2001) and can occur hours to days after the primary event. As a result of these structural and functional changes, short- and/or long-term physical, cognitive, behavioral, and/or emotional symptoms emerge. These symptoms are identified through behavioral observation, standardized and nonstandardized assessment, and patient report. Based on the extent of the symptoms, immediately following the event, individuals are classified into a severity category: mild, moderate, or severe.

The Glasgow Coma Scale (GCS; Teasdale & Jennett, 1974) is the measurement tool most frequently used to measure the level of consciousness immediately following an injury. The GCS score is based on a 15-point behavioral observation scale, which grades behavioral responses into three categories (i.e., eye opening, motor response, and verbal response). A GCS score of 8 or less indicates a severe TBI, a score of 9–12 places an individual in the moderate severity group, and a score of 13–15 indicates a mild TBI (mTBI). The score is thought to reflect the structural and functional status of the central nervous system immediately following the injury.

Categorizing TBI into moderate and severe levels of deficit is fairly straightforward due to the severity of symptoms (e.g., length of unconsciousness), but mTBI is more problematic to diagnose because it is difficult to define and measure the symptoms with current technology and mTBI can be present with little or no loss of consciousness. In an attempt to better define the mTBI group, an interdisciplinary Special Interest Group of the American Congress of Rehabilitation Medicine (mTBI committee) published a definition of mTBI in 1993 that is still widely cited in the literature today (Ruff et al., 2009). According to this definition, mTBI is any period of loss of consciousness; any loss of memory for events immediately before or after the accident; any alteration in mental state at the time of the accident (e.g., feeling dazed, disoriented or confused); and focal neurological deficit(s) that may or may not be transient; but where the severity of the injury does not exceed the following: posttraumatic amnesia not greater than 24 hours; after 30 minutes, an initial Glasgow Coma Scale (GCS) of 13–15; and loss of consciousness of approximately 30 minutes or less. (Mild Traumatic Brain Injury Committee, 1993, p. 86)

Most definitions of mTBI do not include a description of neuroradiological findings (e.g., computed tomography [CT] and magnetic resonance imaging [MRI] scans). Conventional neuroradiological scans, which are frequently used in health care settings, are not sensitive enough to detect the subtle changes in brain structure and function indicative of mTBI. In fact, structural changes are observed in neuroimaging in only a small number of individuals who sustained an mTBI using standard CTs or MRIs. Borg et al. (2004) report that only 5% of individuals with a GCS of 15 and approximately 30% of individuals with a GCS of 13 showed abnormal CT scans. This is problematic, as 85% of all TBIs are classified into the mTBI category (Bazarian et al., 2009). Thus, a medical report indicating no brain damage noted on the CT scan does not necessarily mean that an individual has not sustained a brain injury, only that it was not detected with this technology.

In cases of mTBI, changes to the brain occur at the cellular and vascular level due to dysfunction of the neurons and neuronal systems not destruction (Iversen, Lange, Gaetz, & Zasler, 2007). Animal studies and postmortem examination of injured brains have been most useful in substantiating the existence of these brain changes and providing descriptive information about both the primary and the secondary effects of mTBI. These studies suggest that the pathophysiology of an mTBI is quite complex (Blumbergs et al., 1994) and is still not fully understood. In addition, many individuals with mTBI may be misdiagnosed due to the limitations of neuroimaging scans in detecting these subtle structural changes. Without an objective means to measure the extent of the physiological changes in the brain, individuals who have sustained injury to the head and/or neck are often given a clean bill of health.

Functional recovery from TBIs is difficult to predict, yet health care professionals typically rely on the severity of injury to predict recovery (Jennett, Snoek, Bond, & Brooks, 1981). It is thought that the most severely impaired patients will show the least recovery, but this method of prediction is not without flaws (Novack, Alderson, Bush, Meythale, & Canupp, 2000). For those with the mildest form of TBI, which encompasses many survivors of IPV, the literature suggests that they will have good functional outcomes within days or weeks post-injury (Gronwall & Wrightson, 1975; Ponsford et al., 2000), yet this is not true for all individuals who have sustained an mTBI. For a small number of individuals with mTBI, there may be lasting physical, emotional, and/or cognitive deficits (Ruff & Jurica, 1999; Vanderploeg, Belanger, & Curtiss, 2009). Close to 25% of individuals who have sustained an mTBI show chronic side effects (e.g., slowed information processing speed and attention deficits), even when they are apparently symptom free as measured by standardized tests (Stuss et al., 1985; Warden et al., 2001). The reason for persistent symptoms in a small group of individuals with mTBI is still unclear. Numerous factors have been cited as influencing this outcome, including history of previous TBIs (McKee et al., 2009), genetic factors (Diaz-Arrastia & Baxter, 2006), age (Dikmen, Ross, Machamer, & Temkin, 1995; Katz & Alexander, 1994), gender (Ponsford et al., 2000), and preexisting psychiatric disorders.
There are many unanswered diagnostic and prognostic questions in the field of TBI that current clinical tools cannot address, yet there is a critical need given the sheer number of TBIs each year.

The media is aware of the numbers and have given more attention to the disorder in recent years. Attention typically focuses on two specific populations: military veterans returning from war who sustained TBIs during warfare and athletes, particularly professional football players in the National Football League (e.g., Wenner, 2012). Because of the media attention, professionals working with athletes and military personnel continue to learn about TBI and its impact. However, noticeably absent from this public dialogue surrounding TBI has been survivors of IPV, which is problematic for a number of reasons. First, the resources available to support this population of victims and survivors are remarkably few as compared to the other groups, and therefore, the lack of media attention keeps IPV survivors hidden from the public’s view. Second, with less attention to IPV, professionals who work with victims and survivors may be less apt to recognize TBI symptoms within this population, as the condition may not be viewed as common or relevant to them. Finally, victims and survivors themselves may be less likely to identify their own risks or indicators of TBI if they view this as an issue that impacts only those who have been in war or injured through athletic pursuits. Nonetheless, as the research reviewed in the next section demonstrates, there is growing recognition of the importance of identifying and responding to the potential risks for TBI associated with IPV.

Current Research on IPV-Related TBI

As an umbrella term that describes a range of behaviors, IPV describes “any form of physical, sexual, emotional, psychological, and/or verbal abuse between partners in a [current or former] intimate relationship” (Murray & Graves, 2012, p. 14). Battering is a more severe form of IPV that involves a “patterned and repeated use of coercive controlling behavior to limit, direct, and shape a partner’s thoughts, feelings, and actions” (Almeida & Durkin, 1999, p. 313). Although physical violence may occur in all forms of IPV, the physically abusive dynamics within battering can be especially severe and may involve several forms of violence that may place a victim at risk for a TBI. Any form of force, violence, or trauma to the head or neck can have implications for the healthy functioning of the brain. The Physical Assault subscale of the Revised Conflict Tactic Scale (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996)—a widely used assessment tool used to measure IPV—provides examples of types of physical force that may occur in physically abusive relationships, although the CTS2 does not ask participants to describe where on their bodies the experienced each form of violence. Examples of physical violence on the CTS2 include being kicked, punched, slapped, beat up, choked, slammed against the wall, having something thrown at oneself, having a knife or gun used on oneself, being pushed, shoved, and burned. Any one of these could be directed to a victim’s head or neck.

TBIs are often unreported and thus untreated among IPV victims. However, based on a comprehensive literature review, Kwako et al. (2011) estimated that TBI is present in anywhere between 30% and 74% of all victims of IPV who seek services in battered women’s shelters or emergency departments. Furthermore, rates of physical IPV that involves head and/or neck injuries may be as high as 88–94% (Arosarena, Fritsch, Hsueh, Aynechi, & Haug, 2009). Kwako et al. (2011) concluded that “current research suggests that TBIs are sustained often by women experiencing IPV, likely to occur over multiple incidents, and are unlikely to be reported or treated in medical settings” (p. 3).

Other research suggests the high rates of TBI-related symptoms and/or the types of injuries that could lead to TBIs among community samples of IPV victims (e.g., Jackson, Philip, Nuttall, & Diller, 2002; Mechanic, Weaver, & Resick, 2008; Valera & Berenbaum, 2003). Even when TBI risk factors and/or symptoms are present, victims may not seek medical care that would help them access assessment and treatment (Roberts & Kim, 2005). Given the patterned nature of abuse within many violent relationships, researchers (e.g., Valera & Berenbaum, 2003) have noted the increased risk posed for individuals with multiple IPV-related TBIs. Existing in a violent partnership exacerbates the risk of cumulative and progressively serious consequences of repeated hits to the head. In addition to the potential for TBI to be a consequence of IPV, the presence of TBI symptoms may increase a victims’ risk for further violence, particularly because their symptoms may increase their vulnerability to their abusive partners (Jackson et al., 2002).

Given that abusive incidents within IPV often involve repeated incidents of violence within a single incident, it is possible that a victim may experience multiple injuries to the head and neck within a violent episode. Furthermore, because of the cycle of violence often involved in IPV, repeated episodes of violence may place a victim at risk of repeated injuries to the head and/or neck over a period of time, and the risks of negative consequences from TBI increases significantly in the context of multiple injuries. Although the risk for violence to the head and neck is high among victims of IPV, there is limited recognition and attention to TBI within the current research and practice related to IPV. Therefore, IPV-related TBI, especially when it is mild, may go unrecognized and untreated.

Screening and Practice Considerations

The following screening and practice recommendations are intended to help ensure that survivors’ care is delivered in a way that accounts for the unique potential impacts of TBI. Diagnosing TBI is likely outside the purview of most readers of this article, and the recommendations presented are primarily for professionals who are not brain injury specialists and therefore are not directly involved in the treatment of TBI but who work with victims and survivors in other ways (e.g., victim...
advocates, mental health professionals, attorneys, and law enforcement officials). Although these recommendations are intended to be comprehensive, there is no single profile of an individual with a TBI, just as there is no single profile of someone who has experienced IPV. As such, it is important to customize assessment and intervention methods to match each client’s unique needs, goals, resources, and characteristics.

**Screening Considerations**

Identifying TBI is critical for ensuring that survivors receive proper assessment and treatment. Based on current research, the following six screening practices are recommended:

1. Learn the symptoms of mTBI and screen clients for them. The Centers for Disease Control and Prevention (CDC, 2014) suggests that TBI symptoms fall into the following four categories: (a) cognitive disruptions: attending, thinking, and remembering; (b) physical symptoms: nausea, dizziness, and sensitivity to light; (c) emotional and mood-related changes: anger, depression; and (d) sleep disruptions. Some or all of these symptoms may occur immediately following the injury or, as described previously, they may be secondary events apparent in the hours or days following the injury. These symptoms may persist for days or months. Clients may initially describe TBI-like symptoms (e.g., lightheadedness and headache) but not connect them to their experiences with injury to the head or neck. However, if any of the symptoms that could signify a TBI are present in the immediate or long-term aftermath of an IPV-related injury to the head or neck, service providers should encourage survivors to report these symptoms to their primary care physician. Symptoms that are particularly critical to address in the minutes to days following the injury, as they may indicate a highly lethal situation, include a chronic and/or worsening headache; weakness or numbing; frequent vomiting and/or nausea; slurred speech; extreme drowsiness; differences in the dilation of the pupils in the eye; an inability to remember facts or people; increasing confusion or agitation; any unexplained, unusual behavior; and a loss of consciousness (CDC, 2014). Thus, careful gathering of case history information is essential for determining whether a TBI occurred. Screening devices such as the HELPS Brain Injury Screening Tool (Picard, Scarisbrick, & Paluck, 1991) and the Brief TBI Screening (1998) have been shown to be reliable tools for quickly identifying those individual who may be at risk for brain injury. Service providers should encourage at-risk survivors to share the results of the screening with their primary care physician who may then refer them to a brain injury specialist. Readers interested in additional information about how brain functioning may be impacted by IPV, beyond the risk of TBI, are referred to Wong, Fong, Lai, and Tiwari (2014) for a comprehensive review.

2. Be alert for potential IPV-related violence and injuries that could lead to a TBI. First responders, in particular, should be alert to indicators of a possible TBI (Kwako et al., 2011), but even professionals who work with survivors long after abuse has ended should screen clients for potential TBI, as TBI, even mTBI, can have long-lasting impacts on physical, emotional, and cognitive functioning. One of the first indicators for an IPV-related TBI is the presence of a form of violence that targeted the victim’s head or neck. For example, a victim may have a black eye or gash to the head, describe a blow to the head, show evidence of an attempted strangulation or choking, or indicate that they were pushed against a floor, wall, or object resulting in a direct hit to the head. Professionals should go beyond asking merely what types of violence (e.g., punching, hitting, and pushing) victims and survivors experienced and ask about where on their bodies these forms of violence were experienced. Professionals should also ask about loss of consciousness, blacking out, or seeing stars. One approach for asking these questions is to show the victim a silhouette of a human body and ask them to describe the forms of injury or violence they experienced at different parts of their bodies.

3. Consider how to differentiate possible TBI symptoms from other-related symptom patterns. Readers may have noted the similarities between the TBI symptoms described earlier and other conditions that are common for victims of battering, such as posttraumatic stress disorder (PTSD), anxiety, and depression. Indeed, Kwako et al. (2011) noted that, many of the sequelae evident in survivors of IPV, which have been traditionally linked to abuse severity or PTSD, may be understood as occurring as a result of a physiological disruption to the brain and/or the chronic stress associated with IPV. (p. 7)

In fact, differentiating between PTSD and TBI symptoms can be very challenging, and it is possible for a person to meet the diagnostic criteria for both conditions (Bryant, 2011). Because of the potentially overlapping symptoms, an interdisciplinary approach to diagnosis may be warranted. Thus, professionals can refer victims of IPV who may be exhibiting TBI, PTSD, and any other mental health symptoms to both a medical professional and a mental health professional for thorough assessment. Professionals with long-term involvement with victims and survivors can help clients ensure that these professionals are collaborating and communicating to ensure that treatment recommendations and approaches are appropriate, cohesive, and not overwhelming to the victim or survivor.

4. Consider how TBI symptoms may impact the accuracy of assessment findings. Victims and survivors who have experienced a TBI may have resulting cognitive and emotional sequelae that could impair their ability to provide accurate assessment information and/or sustain their focus during an assessment processes that may have a lengthy
duration. For example, cognitive symptoms that could impact a victim’s ability to participate in the assessment process include confusion (Lezak, 2004), distractibility (Baddeley, Della Sala, Papagano, & Spinnler, 1997), memory deficits, and information processing difficulties (Tinius, 2003). Therefore, when such symptoms are present, professionals can consider ways to modify the assessment or screening process, if possible, to meet the victims’ or survivors’ unique needs. Modifications may include a slow presentation of information, repeating and rephrasing information, and frequent breaks, for example.

5. Use screening information to help clients access beneficial services. One of the main reasons to ensure that a possible IPV-related TBI is properly screened is to inform future treatment and intervention plans (Coelho, Ylvisaker, & Turkstra, 2005). When professionals refer victims and survivors for additional assessment, they should discuss with their clients whether they would grant the professionals permission to access the assessment findings and/or communicate with the specialists who completed the in-depth TBI assessment. Professionals with limited knowledge about TBI symptoms and how these symptoms impact day-to-day functioning should consult with other TBI specialists on how to address clients’ unique needs and symptoms in the delivery of services and interventions.

Practice Considerations

The suitability and appropriateness of intervention practices may be impacted by the presence of an IPV-related TBI. As such, the following nine recommended practices relate to services and/or legal interventions that professionals may offer to victims and survivors of IPV:

1. Understand TBI treatment and rehabilitation options that are available in your community, so you can support clients who are receiving them. There are seven main purposes for cognitive rehabilitation for individuals who have experienced a TBI: (a) restoring prior functioning, (b) developing compensatory strategies for new skill and functioning deficits, (c) increasing the patient’s awareness of these new deficits, (d) enhancing the patient’s mood and emotional regulation, (e) helping the individual return to work, (f) integrating the patient into the community, (g) preventing harmful behaviors to oneself or others, and (h) emphasizing the imperative for rest following a TBI and the urgency of preventing subsequent injuries (Dams-O’Connor & Gordon, 2010). Treatment options may include the following: patient monitoring for worsening symptoms, pain relievers, other medications, surgery, and post-injury rehabilitation (e.g., occupational, physical, and/or speech-language therapy; medication) (BIAA, 2014; Mayo Clinic, 2014). It is important for professionals to identify treatment options and other resources in their communities, in order to effectively link clients to services they need.

2. Encourage victims and survivors with TBI to seek early treatment from a TBI specialist. Not only is appropriate treatment important for recovery from a TBI, but whenever possible, people at risk for TBI should receive services immediately following the injury (Kwako et al., 2011). The consequences of a TBI can be long term and severe. Early intervention is critical to ensuring proper care and for improving the prognosis for recovery (CDC, 2014). Victims of IPV may be hesitant to seek help for a variety of reasons, including safety concerns, shame, fear that they will lose custody of their children, or fear of getting their partners in trouble, especially, if they are economically dependent on them. Therefore, they may be hesitant to seek help for any reason, including addressing a possible TBI. However, professionals can talk with clients about how important early intervention is to the successful recovery from a TBI and help clients identify ways that they may be able to seek help in a manner that addresses the reasons they are hesitant to do so.

3. Account for TBI symptoms in the safety planning process. Safety planning is a widely used intervention to help IPV victims identify strategies to enhance their safety in potentially harmful IPV-related situations (Murray et al., 2015). Both TBI-related symptoms and treatment considerations may need to be considered when developing a safety plan for an affected client. For example, the memory loss associated with a TBI may make it difficult for a client to remember strategies outlined on a safety plan. Because clients may not be able to safely bring a paper version of their safety plan into their home (e.g., if the abuser lives in the home), professionals can help clients find a safe way to write down safety planning information (BIAA, 2014; CDC, 2014), such as electronically or by leaving the information with a friend.

Other relevant issues that safety plans can address include finding safe places where the client can rest during recovery from a TBI, identifying locations in their home where they may be less at risk of injury to the head (e.g., where there are fewer hard surfaces), and identifying ways for the client to access treatment more quickly if there is a reinjury.

4. Maintain contact (as appropriate) with other involved professionals (e.g., doctors and rehabilitation professionals) and other supportive people in the clients’ lives to identify new needs as they arise. Professionals working with victims and survivors of IPV can enlist the support of other relevant professionals, as well as members of clients’ social support networks, to help promote optimal recovery from a TBI. Appropriate documentation of clients’ permission to release confidential information may be needed to facilitate interprofessional collaborations. Professionals also can help clients reach out for credible patient information resources, such as through their state-level affiliates of...
the BIAA (see http://www.biausa.org/state-affiliates.htm). To enhance the support available in clients’ support networks, professionals can help trusted people in their lives understand the nature of the IPV and TBI and develop strategies for providing additional help, as appropriate.

5. Support the client in health-promoting behaviors that aid in recovery from TBI. Medical assessment and rehabilitation are critical for recovery from a TBI. Therefore, professionals can help clients report any potential IPV-related TBI to their primary care physicians, who can then make a referral to a brain injury specialist to provide individualized suggestions to enhance recovery. In addition, the BIAA (2014) and CDC (2014) recommend the following behaviors and strategies to suggest to clients to support their recovery from a TBI. First, following an injury to the head or neck, encourage the client to rest and be still with minimal stimulation (e.g., minimal technology/screen time) for at least a few days. Second, clients should be mindful of their physical and mental health in the days and weeks following an injury in order to identify if any symptoms get worse, or if new symptoms emerge, and if so, they should seek medical attention immediately. Third, clients should take time before getting back to normal daily routines, and they should gradually ease into resuming activities, with proper clearance from a medical professional. Fourth, as reaction times may be slowed, it may be unsafe to do such activities as driving or using heavy machinery. Clients should ensure that these activities are permissible before engaging in them. In general, clients should avoid engaging in physically or emotionally intense activities until symptoms are resolved or until they receive clearance from their medical care team. Fifth, clients should avoid using alcohol or nonprescribed drugs without having clearance from a medical professional. Sixth, it is very important for clients to take all steps possible to avoid further injuries to their head or neck, as the risk of severe consequences is magnified with repeat injuries. Finally, clients should make all efforts possible to take overall good care of themselves emotionally and physically to promote optimal wellness following a TBI. Clearly, many of these suggestions may be very difficult to follow in the context of an ongoing abusive relationship, especially, if the client continues to live with the abusive partner. Therefore, professionals can help support victims and survivors of IPV in developing and implementing a plan to take care of their health to the extent possible in the context of their current life and relationship circumstances.

6. Educate other professionals in your community about the importance of identifying TBI early in the context of IPV. Given the lack of media and professional attention that has been given to IPV-related TBI, it is likely that many community-based professionals are not aware of the significant risks and symptoms associated with TBI, especially mTBI. Therefore, professionals with the knowledge about IPV-related TBI can provide educational opportunities (e.g., professional development workshops) to educate involved personnel on the symptoms and types of injuries that may signify the presence of a TBI. Likewise, medical and rehabilitation professionals who work with clients impacted by TBI may need additional training on the dynamics of IPV and safety when working with victims and survivors.

7. Help clients develop problem-solving abilities. The empowerment approach that underlies many services for IPV victims maintains the importance of helping clients make the best decisions for their own lives. Although this focus typically means that clients should be empowered to make decisions for themselves, TBI symptoms (e.g., confusion, impulsivity, poor organization abilities, and attentional deficits) may hinder a client’s ability to solve problems and make complex decisions for himself or herself. Therefore, clients with TBIs may benefit from learning formal problem-solving strategies to help increase their capacity to solve problems on their own with the help of a rehabilitation specialist (Cicerone et al., 2005). In particular, professionals can help remind clients that they can take time to make decisions, consider all the options, and determine the best outcome to meet their needs.

8. Help victims and survivors adjust to work and/or educational functioning with consideration of TBI symptoms. Unemployment rates are high among people with a history of TBI (Fraser & Wehman, 1999), and TBI symptoms can impact one’s ability to function in work and school environments (Hoofien, Gilboa, & Vakil, 2001). However, being able to return to one’s career pursuits can offer many benefits for victims and survivors of IPV, including economic self-sufficiency, social connections, and enhanced self-worth (Green et al., 2008). In planning for reentry to work or educational settings in the aftermath of an IPV-related TBI, victims, and survivors may need to redevelop some of their preexisting skills (BIAA, 2014; CDC, 2014). Thus, referrals for vocational rehabilitation or educational training programs may be warranted.

9. Avoid revictimizing and contributing to the stigma that victims and survivors of IPV already face. There is a significant stigma surrounding IPV, and this stigma may prevent victims and survivors from seeking help (Crowe & Murray, 2015; Overstreet & Quinn, 2013). The symptoms associated with TBIs, combined with their potentially long-term impacts, could be perceived as extremely upsetting and demoralizing for IPV victims and survivors. Therefore, care must be given to ensure that clients receive information about a potential or diagnosed TBI in such a way that does not imply that there is something “wrong with them.” Likewise, information about the TBI must be protected from abuse perpetrators, who could potentially use that information to further emotionally and verbally denigrate a victim, as well as use the diagnosis against them during legal proceedings. To the extent possible, information about IPV-related TBI should be discussed with clients using a positive tone and through a conversation that highlights clients’ strengths and resources and opportunities.
for healing and recovery. Finally, all interactions with the client should be foregrounded in dignity and respect.

Conclusion

There is growing recognition of the potential for TBI among victims and survivors of IPV. However, to date, there has been little attention paid to how to address TBI in the multidisciplinary, community-based interventions, and treatments for this population. Existing research can inform practices that are responsive, supportive, and ethically sound for survivors who have experienced TBI. However, there remains a critical need for further research and practice developments in this area. The five assessment recommendations and nine practice recommendations described in this article offer a starting point for professionals who work with clients who have a potential or diagnosed IPV-related TBI. However, as new information continues to emerge regarding the dynamics, prevention, and treatment of IPV-related TBI, these recommendations will need to be revised in order to promote the best possible care for victims and survivors.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References


**Author Biographies**

Christine E. Murray, PhD, LPC, LMFT, is an associate professor in the Department of Counseling and Educational Development at the University of North Carolina at Greensboro. Her research focuses on how survivors overcome past abuse and the stigma surrounding it.

Kristine Lundgren, ScD, CCC-SLP, is an associate professor in the Department of Communication Sciences and Disorders at the University of North Carolina at Greensboro (UNC-G) and an assistant professor in the Department of Neurology at the Boston University School of Medicine.

Loreen N. Olson (PhD—University of Nebraska) is an associate professor in the Department of Communication Studies at the University of North Carolina at Greensboro. She teaches courses in and conducts research on interpersonal, gender, and family communication.

Gwen Hunnicutt is an associate professor of Sociology and Women’s and Gender Studies at The University of North Carolina at Greensboro. She received her PhD in Sociology from the University of Mexico. She studies various dimensions of gender violence.
Women who are physically abused by their intimate partners (e.g., spouse, boyfriend) suffer from a myriad of physical, psychological, neurological, and cognitive problems (e.g., Campbell & Lewandowski, 1997; Diaz-Olavarrieta, Campbell, Garcia, Par, & Villa, 1999; Council on Scientific Affairs, 1992; Koss et al., 1994; Warshaw, 2001). For example, women in battering relationships have been shown to have high rates of depression, anxiety, and posttraumatic stress disorder (PTSD; Harway & Hansen, 1994; Koss et al., 1994; McGrath, Keita, Strickland, & Russo, 1990; Vitanza, Vogel, & Marshall, 1995) and to report many cognitive problems such as difficulty remembering, concentrating, and paying attention (Dutton, 1992; Harway & Hansen, 1994; Walker, 1994). Many of these problems are presumed to result from or to be in some way related to the abuse these women are sustaining (Dutton, 1992; Goodman, Koss, & Russo, 1993; Harway & Hansen, 1994). Several prominent researchers in the domestic violence field have suggested that brain injuries sustained from abuse may be contributing to the problems battered women suffer (e.g., Dutton, 1992; McGrath et al., 1990; Walker, 1994). However, to our knowledge, assessment of the associations between brain injuries, specific neuropsychological functions, and psychopathology among battered women has yet to be conducted.

We hypothesized that battered women are sustaining: (a) brain injuries from blows to the head or from being violently shaken and/or (b) anoxic or hypoxic brain injuries from being choked. There are several reasons we believe this may be the case. First, the forms of abuse to which battered women are subjected (e.g., being hit in the head; e.g., Campbell & Lewandowski, 1997) have the potential to produce brain injuries (Alexander, 1995). These acts can cause contusions (bruises on the brain) at either the point of impact or the part of the brain opposite the point of impact (contre coup injury). They could also cause diffuse axonal injury (tearing of the neuronal fibers connecting various parts of the brain) in incidents in which there are rapid acceleration and deceleration forces. Additionally, battered women who are choked could sustain brain injuries through the effects of anoxia or hypoxia (complete or partial lack of oxygen to the brain; e.g., Hawley, McClane, & Strack, 2001; Smith, Mills, & Taliaferro, 2001). There does not need to be a loss of consciousness for any of these types of brain injuries to occur (e.g., Gennarelli, Adams, & Graham, 1981; Leininger, Gramling, Farrell, Kreutzer, & Peck, 1990). We believe that the types of abuse sustained on a regular basis by battered women would most likely lead to mild (rather than moderate to severe) traumatic brain injuries. Another reason to expect that battered women are sustaining brain injuries is that they report a number of the same symptoms that individuals who have sustained brain injuries report, such as problems with memory, concentration, sleep, headaches, depression, and anxiety (e.g., Alexander, 1995; Bohnen & Jolles, 1992; Cicerone & Kalmar, 1995; Harway & Hansen, 1994; Kay, Newman, Cavallo, Ezrachi, & Resnick, 1992; Koss et al., 1994; McGrath et al., 1990; Rimel, Giordani, Barth, Boll, & Jane, 1981).

We hypothesized that brain injuries sustained from their partners contribute to the cognitive and emotional difficulties that occur in battered women. There are several reasons to believe this. First, individuals who have sustained brain injuries, of all severities, perform more poorly on tests of neuropsychological functioning (e.g., Bohnen, Jolles, Twijnstra, Mellink, & Wijnen, 1995; Dikmen, McLean, Temkin, & Wyler, 1986; Levin et al., 1987).

Brain Injury in Battered Women

Eve M. Valera and Howard Berenbaum

University of Illinois at Urbana–Champaign

The goals of the present study were to examine (a) whether battered women in a sample of both shelter and nonshelter women are sustaining brain injuries from their partners and (b) if so, whether such brain injuries are associated with partner abuse severity, cognitive functioning, or psychopathology. Ninety-nine battered women were assessed using neuropsychological, psychopathological, and abuse history measures. Almost three quarters of the sample sustained at least 1 partner-related brain injury and half sustained multiple partner-related brain injuries. Further, in a subset of women (n = 57), brain injury severity was negatively associated with measures of memory, learning, and cognitive flexibility and was positively associated with partner abuse severity, general distress, anhedonic depression, worry, anxious arousal, and posttraumatic stress disorder symptomatology.

This research was funded by National Research Service Award 1 F31 MH11763–01A2, from the National Institutes of Health, and by three grants from the University of Illinois, the Graduate College On-Campus Dissertation Research Grant, Women's Studies Funding for Feminist Scholarship, and the Graduate College Thesis Project Grant. This work was based on Eve M. Valera’s doctoral dissertation, which was submitted to the University of Illinois at Urbana-Champaign. Preliminary reports of portions of this article were presented at the April–May 1998 annual meeting of the Midwestern Psychological Association, Chicago, at the November 2000 annual meeting of the International Society for Traumatic Stress Studies, San Antonio, Texas, and at the December 2001 annual meeting of the International Society for Traumatic Stress Studies, New Orleans, Louisiana.

Correspondence concerning this article should be addressed to Eve M. Valera, who is now at the Department of Psychiatry, Massachusetts General Hospital and Harvard Medical School, Building 149, 9th Floor East, 13th Street, Charlestown, Massachusetts 02129. E-mail: eve_valera@hms.harvard.edu
Second, brain injuries often lead to changes in emotional functioning. For example, injuries to the frontal lobes and/or their connections (e.g., frontal–subcortical circuits) are associated with depression (for a review, see Mayberg, 2001). Additionally, as previously stated, battered women exhibit cognitive and emotional complaints that are similar to those of individuals who have sustained brain injuries.

The goals of the present study were to examine (a) whether battered women in a sample of both shelter and nonshelter women are sustaining brain injuries from their partners and (b) if so, whether such brain injuries are associated with partner abuse severity, cognitive functioning, or psychopathology. We also tested whether associations between brain injuries and cognitive functioning and psychopathology would be at least partially independent of other factors such as partner abuse severity.

**Method**

**Participants**

Participants were recruited from two battered women’s shelters (n = 67), a program to teach couples about healthier interactions and ways of communicating (n = 19), a program assisting women who were seeking orders of protection (n = 2), and a support program for women with a history of substance abuse (n = 6). An additional 5 participants heard about the study from a friend. Ninety-nine women were included in analyses examining rates of brain injury. After exclusion criteria (see details below), 57 women remained for all other analyses (i.e., analyses examining relations among brain injury, cognitive functioning, psychopathology, and partner abuse severity). Demographic characteristics for the 99 women were as follow: age range from 18 to 54 years (M = 32.0; SD = 9.3); 59% Caucasian, 34% African American, 3% Latina, 3% Native American, and 1% classified as other. Mean years of education was 12.3 (SD = 2.1). At the time of the interview, 51% of the full sample were employed, and 69% were residing in a shelter. Demographic characteristics for the sub-sample of 57 women were as follow: age range from 18 to 52 (M = 31.2; SD = 9.0); 58% Caucasian, 35% African American, 3.5% Latina, and 3.5% Native American. Mean years of education was 12.4 (SD = 1.8). At the time of the interview, 58% of the sub-sample were employed, and 67% were residing in a shelter.

**Procedure**

Women were invited to participate in a study examining the effects of physical violence on various aspects of women’s lives. Any woman who sustained any type of physical abuse by a current or past intimate partner was eligible to participate in the study. Thus, all women in this sample sustained at least one incident of physical battering from an intimate partner.

The study was conducted in two sessions, which were completed in succession or on different days, depending on the woman’s preference. Testing was completed within a week for all but 3 participants; 7 women did not complete the second session. The brain injury interview was always administered before the cognitive testing, and both were always administered on the first day. Assessors were the principal investigator (Eve M. Valera) and two female research assistants. Proficiency of neuropsychological test administration was achieved by having two experienced test administrators evaluate the research assistants’ performance on mock neuropsychological evaluations.

**Measures**

**Partner abuse severity.** Partner abuse severity was assessed using the verbal and physical aggression items (e.g., “pushed, grabbed, or shoved you”) from the Conflict Tactics Scale (CTS; Straus, 1979) as well as an additional 9 items from the Severity of Violence Against Women Scale (Marshall, 1992; e.g., “burned you with something hot”), which were used to provide a more extensive assessment of severe violence and to assess sexual abuse. Women were asked to indicate how often each of these incidents occurred within the past year. Using guidelines provided by Straus and Gelles (1990), we weighted item responses for potential to cause injury and summed them to produce an abuse severity score (see Appendix).

**Brain injury.** We defined brain injuries using the official definition of the Mild Traumatic Brain Injury Committee of the American Congress of Rehabilitation Medicine (Committee on Mild Traumatic Brain Injury, 1993). History of brain injury was assessed using a semistructured interview in which participants were asked questions in accord with the Committee on Mild Traumatic Brain Injury’s (1993) definition of mild traumatic brain injuries (i.e., participants were asked about alterations in consciousness [AIC] immediately following potential traumas to the brain; a standard approach used in clinical practice). More specifically, participants were asked whether they had ever experienced a period of dizziness, felt stunned or disoriented, seen stars or spots, had a loss of consciousness (LOC) or blacked out, or had memory loss surrounding a particular incident (posttraumatic amnesia, PTA). If a woman reported that she had experienced any of these conditions, follow-up questions were asked to determine whether these AICs occurred as a result of something her partner did to her and under what conditions the AIC occurred (e.g., head hitting an object, being violently shaken, being choked). If there was an LOC or PTA, follow-up questions regarding the duration of the LOC or PTA were used to determine whether the brain injury was “mild” or “moderate to severe.” A brain injury was considered mild if the LOC was 30 min or less and the PTA was 24 hr or less. Any LOC or PTA greater than that was considered to be moderate to severe. Questions were asked to determine when the first and last AIC occurred and the total number of times an AIC had occurred. Questions to ascertain whether anoxia or hypoxia occurred from choking were also asked. A woman was considered to have sustained a hypoxic or anoxic insult to the brain if she reported an AIC (as defined above) following an incident in which she was choked by her partner.

**Cognitive functioning.** Cognitive functioning was assessed using a brief battery of standard, commonly used neuropsychological tests that have been demonstrated to have reasonable reliability and validity (e.g., Delis, Cullum, Butters, & Cains, 1988; Lezak, 1982; Matarazzo & Herman, 1984; Ruff, Light, & Evans, 1987; Youngjohn, Larrabee & Crook, 1992). Tests were chosen to allow us to examine a subset of cognitive functions, namely, attention, memory, learning, and some “executive functions” (e.g., cognitive flexibility, planning), which we thought might be associated with brain injuries in battered women. We also chose tests that we believed would not be too time consuming or too taxing for the women being tested.

Trail Making Test Part A (Army Individual Test Battery, 1944) is a test of visuomotor speed and tracking. Trail Making Test Part B is a test sensitive to problems in cognitive flexibility. Participants were asked to draw a line to connect a series of numbered circles in order (Trails A) or numbered and lettered circles (Trails B) in alternating sequence as quickly as possible.

Digit Span, a subtest of the Wechsler Adult Intelligence Scale—Revised (Wechsler, 1981), is a test of attentional capacity, or very short-term memory. Participants were asked to repeat orally administered strings of numbers either in the same (digits forward) or reverse (digits backward) order.

The California Verbal Learning Test (CVLT; Delis, Kramer, Kaplan, & Ober, 1987) is a test of verbal learning and memory. It involves learning a list of orally presented words that fall into logical semantic clusters (e.g., tools, spices). Participants were first given five learning trials in which they were asked to recall the words immediately and were then asked to recall the words following a 20-min delay. The score of the total number of words
recalled in the first five trials (sum of CVLT Trials 1–5) and number of words recalled after the 20-min delay (long delay recall) were the two scores used in the analyses.

The Ruff Figural Fluency Test (RFFT; Ruff et al., 1987) is a task of design fluency. Participants were presented with squares containing dots of different patterns and asked to make as many designs as possible for five 1-min trials, without repeating any designs. A total design score was generated by summing the total number of RFFT unique designs.

Psychopathology. The Clinician-Administered PTSD Scale for DSM–IV—One-Week Symptom Status Version (CAPS-2; Blake et al., 1995) was administered. The CAPS-2 is a semistructured interview used to assess the frequency and intensity of PTSD symptoms. A single-dimensional PTSD symptom severity score was computed for each woman. In the present study, interrater reliability (based on a second judge’s CAPS-2 ratings for a subset of 18 women), measured with an intraclass correlation (Shrout & Fleiss, 1979), that treated raters as random effects and the individual rater as the unit of reliability, was .99.

The Mood and Anxiety Symptom Questionnaire—Short Form (Clark & Watson, 1991) is a 62-item questionnaire designed to assess specific and nonspecific symptoms of depression and anxiety. The four subscales are General Distress Anxious Symptoms (e.g., felt afraid), Anxious Arousal (e.g., startled easily), General Distress Depressive Symptoms (e.g., felt sad), and Anhedonic Depression (e.g., felt withdrawn from other people). Participants were asked to indicate how much they “felt or experienced things this way during the past week.” The two general distress subscales were combined because they were theoretically similar and highly correlated at .82.

On The Penn State Worry Questionnaire (Meyer, Miller, & Borkovec, 1990), participants indicated how typical of themselves were each of 16 items measuring the trait of worry (e.g., “many situations make me worry”).

Psychoactive substance abuse and dependence was assessed using a modified version of the Psychoactive Substance Use module from the Structured Clinical Interview for DSM–IV Disorders (First, Spitzer, Gibbon, & Williams, 1995). This module was modified to make the substance abuse/dependence assessment briefer but still allow for women to be classified into the following categories according to the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM–IV; American Psychiatric Association, 1994) criteria: (a) never dependent on drugs or alcohol, (b) currently drug and/or alcohol dependent, (c) in early remission, (d) sustained remission.

Data Analyses

To effectively examine the relationship between cognitive functioning and partner-related brain injuries, we found it necessary to exclude women who had other conditions or experiences that could influence cognitive functioning. Otherwise, it would be impossible for the effects of the brain injuries to be masked or confounded by other factors. Forty-two women needed to be excluded on the basis of these criteria (see Table 1). Thus, analyses for the rates of brain injuries included all 99 women, but all other analyses were conducted with the remaining 57 women. As shown earlier, there were no sociodemographic differences between the full sample of 99 women and the subsample of 57 women.

Brain injury score. Research has shown that the sequelae of brain injuries (including repetitive mild brain injuries) tend to resolve over time and that having more than one brain injury results in both a longer time to recover and more severe deficits than having only one brain injury (e.g., Gronwall, 1991; Gronwall & Wrightson, 1975; McLean, Temkin, Dikmen, & Wyler, 1983). Also, a moderate to severe brain injury is more likely to have negative sequelae than would a mild brain injury (e.g., Dikmen, McLean, Temkin, & Wyler, 1986). Therefore, using the definition provided by the Committee on Mild Traumatic Brain Injury (1993), we computed a brain injury severity score based on the recency and number of inferred brain injuries and on whether a moderate to severe brain injury had ever occurred. Only partner-related brain injuries were included in the brain injury score. (All women with moderate to severe or recent mild accident-related traumatic brain injuries were excluded from analyses; see Table 1). The frequency score was the number of brain injuries based on the woman’s report of AICs. The recency score was defined as the number of weeks since the most recent brain injury. Whether a brain injury was mild versus moderate to severe was defined as noted above. Each woman was assigned a score for each of these criteria as follows: frequency, 1–5 brain injuries (BI) = 1, 6–10 BI = 2, 11–15 BI = 3, 16 or more BI = 4; recency, more than 52 weeks ago = 0, 27–52 weeks ago = 1, 14–26 weeks ago = 2, 0–13 weeks ago = 3; severity, never sustained a moderate to severe brain injury = 0, sustained a moderate to severe brain injury = 1. The three scores were added to create the brain injury score. (A similar pattern of results was found when we examined number or recency of brain injuries separately and whether or not we also included the severity score.) This brain injury score was strongly correlated with both the number of brain injuries ($r = .87$, $p < .01$) and the recency of brain injuries among those who had brain injuries ($r = .70$, $p < .01$). The range for the time interval between when a woman last sustained a brain injury and the date of testing was from 1 day to approximately 3 years.

Cognitive variables. The six neuropsychological scores were converted to age-, gender-, and/or education-corrected $z$ scores with the norming procedures recommended in the manuals for each measure.

Results

Occurrence of Brain Injury in This Sample of Battered Women (Full Sample)

As can be seen in Table 2, 74% of the women sustained some type of brain injury from their partner, whereas only 27% sustained accident-related brain injuries. Additionally, a substantial percent-
Table 2
Occurrence of Brain Injury in This Sample of Battered Women: Percentage of Women Sustaining Partner-Related and Accident-Related Brain Injuries (N = 99)

<table>
<thead>
<tr>
<th>Type of brain injury</th>
<th>Partner-related brain injuries</th>
<th>Accident-related brain injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% women sustaining at least 1 brain injury</td>
<td>% women sustaining multiple brain injuries</td>
</tr>
<tr>
<td>Mild</td>
<td>68</td>
<td>44</td>
</tr>
<tr>
<td>Moderate to severe</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Choke-induced anoxia or hypoxia</td>
<td>27</td>
<td>12</td>
</tr>
<tr>
<td>Any</td>
<td>74</td>
<td>51</td>
</tr>
</tbody>
</table>

*a* All periods of losing consciousness or posttraumatic amnesia were consistent with mild, rather than moderate to severe, criteria for brain injury. *b* Row does not equal the sum of the three brain injury groups because the groups are not mutually exclusive. Many women sustained more than one type of brain injury.

We also explored the possibility that high rates of brain injuries are more representative of shelter population women than of women who are not in shelters. We found that the percentages of women sustaining at least one or multiple mild traumatic brain injuries were almost identical for the two groups (67% and 45% among shelter women, and 69% and 44% among nonshelter women). However, the percentages of chokes and partner-related severe brain injuries were greater in the shelter group than in the nonshelter group (33% and 12% vs. 16% and 6%, respectively).

Relationships Between Cognitive Functioning and Brain Injury and Partner Abuse Severity (Subsample)

The correlations among the six cognitive variables ranged from .09 to .68, (M = .36). The mean partner abuse severity score total was 244.2 (SD = 261.5). The CTS Verbal Aggression scale mean was 74.0 (SD = 46.2), and the CTS Physical Aggression scale mean was 97.6 (SD = 134.3). The zero-order correlations presented in Table 3 indicate that higher brain injury scores are associated with lower CVLT and Trails B scores. Lower CVLT scores are also associated with higher partner abuse severity scores. Of the five psychopathology variables that we examined, anxious arousal was the only one significantly correlated (r = −.23 to −.26, ps < .05) with any of the cognitive scores. Therefore, also presented in Table 3 are the partial correlations for the relationship between the cognitive scores and the brain injury score removing variance shared with partner abuse severity and anxious arousal. Also, as stress and stress-related psychopathology are often associated with cognitive functioning (e.g., Bremner, 1999), we also examined the relationship between the brain injury score and the cognitive scores removing shared variance with PTSD symptom severity. Most of the partial correlations between the brain injury score and the cognitive scores are somewhat smaller than the zero-order correlations. However, as can be seen in Table 3, the associations between the two CVLT scores and the brain injury score are still significant after taking into account the contribution of either partner abuse severity, anxious arousal, or PTSD symptom severity. The association between Trails B and the brain injury severity score was significant after taking into account the contribution of either partner abuse severity or anxious arousal, but the association fell just short of reaching conventional levels of significance.

Table 3
Zero-Order and Partial Correlations Between Cognitive Functioning and Both the Brain Injury Score and Partner Abuse Severity (n = 57)

<table>
<thead>
<tr>
<th>Variable</th>
<th>CVLT trials: Sum of 1–5</th>
<th>CVLT long delay recall</th>
<th>Digit span</th>
<th>Trails A</th>
<th>Trails B</th>
<th>RFFT unique designs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brain injury score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zero order</td>
<td>−.33***</td>
<td>−.39**</td>
<td>−.18</td>
<td>−.04</td>
<td>−.30*</td>
<td>−.08</td>
</tr>
<tr>
<td>Partial</td>
<td>−.25*</td>
<td>−.24*</td>
<td>−.13</td>
<td>.01</td>
<td>−.25*</td>
<td>−.03</td>
</tr>
<tr>
<td>Partial</td>
<td>−.30*</td>
<td>−.38**</td>
<td>−.16</td>
<td>−.01</td>
<td>−.24*</td>
<td>−.08</td>
</tr>
<tr>
<td>Partial</td>
<td>−.25*</td>
<td>−.34**</td>
<td>−.14</td>
<td>−.01</td>
<td>−.20</td>
<td>−.14</td>
</tr>
<tr>
<td>Partner abuse severity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zero order</td>
<td>−.23*</td>
<td>−.38**</td>
<td>−.13</td>
<td>−.10</td>
<td>−.16</td>
<td>−.11</td>
</tr>
<tr>
<td>Partial</td>
<td>−.08</td>
<td>−.23*</td>
<td>−.05</td>
<td>−.09</td>
<td>.01</td>
<td>−.08</td>
</tr>
</tbody>
</table>

Note. Means (and standard deviations) of the six cognitive variables are as follow: California Verbal Learning Test (CVLT) trials 1–5: 52.1 (14.8); CVLT long delay recall: 11.4 (3.4); Digit span: 15.1 (4.3); Trails A: 23.7 (6.9); Trails B: 68.8 (40.9); and Ruff Figural Fluency Test (RFFT) unique designs: 77.2 (20.0). This sub-sample of 57 women provided us with reasonable (74%) power to find statistically significant correlations (using a significance level of .05) given a population correlation of .30 (Cohen, 1987).

*a* Shared variance between the brain injury score and partner abuse severity is removed. *b* Shared variance between the brain injury score and anxious arousal is removed. *c* Shared variance between the brain injury score and posttraumatic stress disorder symptom severity is removed.

*p ≤ .05. **p ≤ .01.
significance ($p = .08$) after taking into account the contribution of PTSD symptom severity.

Previous theorizing and research has suggested that it is partner abuse severity itself that might account for problems with cognitive and psychological functioning reported by battered women (e.g., Houskamp & Foy, 1991). As can be seen in Table 3, higher levels of partner abuse severity were associated with poorer memory function as indicated by the CVLT measures. However, the partial correlations show that these associations are significantly reduced and only the CVLT delayed memory score was significant over and above the contribution of brain injury severity. Further, we examined the relationship between time elapsed since the most recent partner abusive incident (i.e., either an emotionally, verbally, or physically abusive incident) and performance on the cognitive tasks. We found no relationship, $r_s$ ranged from $-.07$ to $.07$, between any of the cognitive scores and the amount of time since the most recent partner abusive incident. Not surprisingly, however, higher levels of both anhedonic depression, $r = -.26$, $p < .05$, and PTSD symptom severity, $r_s = -.38$, $p < .01$, were associated with less time since the most recent abusive incident.

**Relationships Between Psychopathology and the Brain Injury Score and Partner Abuse Severity (Subsample)**

The correlations among the five psychopathology variables ranged from .38 to .78 ($M = .54$). The zero-order correlations presented in Table 4 indicate that higher brain injury scores were associated with higher levels of all of the psychopathology variables. After removing shared variance with partner abuse severity, small to moderate, statistically significant associations remained between the brain injury score and general distress, anhedonic depression, anxious arousal, and PTSD symptom severity.

The relationship between partner abuse severity and psychopathology was also examined (see Table 4). As one might expect, greater levels of partner abuse severity are highly associated with higher levels of several of the psychopathology variables: anhedonic depression, worry, and PTSD symptom severity. However, these associations are attenuated and no longer statistically significant after removing shared variance with brain injury severity.

Consistent with our prediction, higher brain injury severity scores were associated with higher partner abuse severity scores, $r = .51$, $p < .01$.

**Discussion**

We found that brain injuries in our sample were relatively common. It should be noted, however, that our sample was somewhat small and one of relative convenience and is, therefore, not necessarily generalizable to the whole population of battered women. Though the rates of chokes and severe brain injuries were higher in the shelter population than among nonshelter women, the rates of at least one and of multiple mild traumatic brain injuries were almost identical in the two groups. Thus, although we cannot necessarily generalize our results to all battered women, these data suggest that brain injuries are not restricted to shelter populations.

We found that brain injuries were associated with diminished cognitive abilities. These findings could help explain the apparent memory, attention, and concentration problems reported by many battered women. These types of impairments are also consistent with what has been reported previously regarding the neuropsychological effects of brain injuries, anoxia, and hypoxia (e.g., Dikmen, McLean, & Temkin, 1986; Kay et al., 1992; Rimel et al., 1981; Rourke & Adams, 1996). We also found that brain injuries were associated with several facets of psychopathology, namely general distress, anhedonic depression, worry, anxious arousal, and PTSD symptom severity. These results are consistent with the findings of numerous studies that have found high rates of depression and PTSD following brain injuries (e.g., Bryant & Harvey, 1998; Busch & Alpern, 1998).

Most models of cognitive and psychological functioning in battered women (e.g., Cascard & O’Leary, 1992; Houskamp & Foy, 1991) suggest that the psychological trauma of being in an abusive relationship is what causes the problems in cognitive and psychological functioning. In support of these models, the results of this study showed that partner abuse severity was associated with memory and learning scores and several facets of psychopathology. However, as already noted, the results of this study also suggest that brain injuries contribute to diminished cognitive abilities and to psychopathology. Analyses attempting to tease apart the potential effects of brain injuries and the severity of partner abuse revealed that both contributed at least partially independently to at least some cognitive and psychopathology outcomes. These results suggest that there are complex relationships between number and recency of brain injuries, severity of partner abuse, cognitive functioning, and psychopathology. It will be important to...
for future research to use more complicated designs that will be capable of elucidating these relationships. Research that follows individuals over time and can thereby address temporal issues will be particularly valuable.

The present study had several methodological shortcomings. First, the present study relied on retrospective self-reports of brain injury, which may have resulted in some inaccurate reporting. One reason self-reports might be questioned is that one may suspect that the women in this study were “faking bad” to receive compensation or for some other incentive. However, participants were informed that their names would not be attached to any of the data after the interview was completed, not a single participant has requested that the information in her interview be released, and participants were not told that the study was about brain injuries nor were they asked about brain injuries directly. Another reason self-reports might be questioned is that individuals with brain injuries are at risk for having memory deficits. However, there is no reason to suspect that there would be a systematic misremembering of instances of AICs such that they would tend to remember more AICs with increases in relative cognitive impairment.

Ideally, it would be possible to obtain reliable information concerning past brain injuries that did not rely on self-report. Medical records or neurological examination results could be useful in this regard. In our sample, only 25% of women with a brain injury based on the above definition reported going to the hospital to have a suspected head/brain related trauma evaluated. Thus, 75% of the women sustaining brain injuries would have no such documentation. Furthermore, as pointed out by the Committee on Mild Traumatic Brain Injury (1993), mild traumatic brain injuries can be present without any abnormal signs revealed by imaging or neurological examination. Thus, having additional evidence of brain injury would be ideal, but it would be risky to rely on such information alone, as it would lead to a very high false negative rate, and when available, would probably represent a small and most likely a nonrepresentative subset of the battered women population. Nonetheless, obtaining records with these facts in mind would be a very useful way to corroborate aspects of a woman’s history and should be done in future studies.

Another shortcoming of this study was that for each woman, all of the data were collected by the same assessor. Given the sensitive and potentially stressful nature of the material, we felt this was necessary to facilitate a sense of trust and comfort for the women being interviewed and, consequently, to increase the likelihood of honest responding. However, such a method of data collection raises the possibility of experimenter bias. To reduce the possibility that results would be biased, we always administered more subjective measures (e.g., the brain injury interview) prior to less subjective measures (e.g., neuropsychological testing). Nonetheless, it will be important for future research to address this problem by using multiple assessors, each of whom has developed a sense of trust with the women being assessed. Finally, the inclusion of a control group would have been ideal to be certain that women in abusive relationships suffer more brain injuries than do women who are not in abusive relationships.

On the basis of findings in this particular sample of battered women, we feel that more work is clearly needed to further evaluate the rates of brain injuries in battered women as well as the impact of brain injuries on battered women’s functioning. Nonetheless, we hope that this study will help the welfare of battered women by (a) encouraging research examining the prevalence and effects of brain injuries in other and more extensive samples of battered women; (b) alerting battered women, professionals, and the general public to the potential dangers that battered women face in physically abusive relationships; and (c) encouraging professionals working with battered women to learn more about, and better understand, the potential effects of brain injuries and choking.

References
BRAIN INJURY IN BATTERED WOMEN


Appendix

Partner Abuse Severity Score Calculation

The partner abuse severity score was created following procedures recommended by Straus and Gelles (1990, p. 542). We first took the midpoints (i.e., $0 = 0$, $1 = 1$, $2 = 2$, $3 = 3$, $4 = 4$, $6 = 6$, $10 = 10$, $11$ to $20 = 15$, and more than $20 = 25$) of the frequency score (i.e., how many times did your partner do this to you) for the verbal and physical aggression items (listed below). We then multiplied the midpoint frequency score by weights chosen on the basis of the “injury producing potential of each act” (Straus & Gelles, 1990, p. 542), and summed the
scores of all abuse items. (Note. The Conflict Tactics Scale [CTS] Reasoning items were in our scale but are not listed here, as they are never included in the CTS abuse score.)

The weights for each of the items are as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulted, yelled, or swore at you</td>
<td>\times 1</td>
</tr>
<tr>
<td>Sulked and/or refused to talk about it</td>
<td>\times 1</td>
</tr>
<tr>
<td>Stomped out of the room or house (or yard)</td>
<td>\times 1</td>
</tr>
<tr>
<td>Did or said something to spite you</td>
<td>\times 1</td>
</tr>
<tr>
<td>Threatened to hit or throw something at you</td>
<td>\times 1</td>
</tr>
<tr>
<td>Threw or smashed or hit or kicked something</td>
<td>\times 1</td>
</tr>
<tr>
<td>Threw something at you</td>
<td>\times 1</td>
</tr>
<tr>
<td>Pushed, grabbed, or shoved you</td>
<td>\times 1</td>
</tr>
<tr>
<td>Slapped you</td>
<td>\times 1</td>
</tr>
<tr>
<td>Kicked, bit, or hit you with a fist</td>
<td>\times 2</td>
</tr>
<tr>
<td>Threatened you with a club-like object</td>
<td>\times 2</td>
</tr>
<tr>
<td>Hit or tried to hit you with something</td>
<td>\times 3</td>
</tr>
<tr>
<td>Used a club-like object on you</td>
<td>\times 3</td>
</tr>
<tr>
<td>Beat you up</td>
<td>\times 5</td>
</tr>
<tr>
<td>Choked you</td>
<td>\times 5</td>
</tr>
<tr>
<td>Burned you with something</td>
<td>\times 5</td>
</tr>
<tr>
<td>Stomped on you</td>
<td>\times 5</td>
</tr>
<tr>
<td>Threatened to kill you</td>
<td>\times 6</td>
</tr>
<tr>
<td>Threatened you with a knife or gun</td>
<td>\times 6</td>
</tr>
<tr>
<td>Used a knife or a gun on you</td>
<td>\times 8</td>
</tr>
<tr>
<td>Made you have oral sex against your will</td>
<td>\times 5</td>
</tr>
<tr>
<td>Made you have sexual intercourse against your will</td>
<td>\times 5</td>
</tr>
<tr>
<td>Made you have anal sex against your will</td>
<td>\times 5</td>
</tr>
<tr>
<td>Used an object on you in a sexual way</td>
<td>\times 5</td>
</tr>
</tbody>
</table>

New Editor Appointed for *Contemporary Psychology: APA Review of Books, 2005–2010*

The Publications and Communications Board of the American Psychological Association announces the appointment of Danny Wedding (Missouri Institute of Mental Health) as editor of *Contemporary Psychology: APA Review of Books*, for a 6-year term beginning in 2005. The current editor, Robert J. Sternberg (Yale University), will continue as editor through 2004.

All reviews are written by invitation only, and neither the current editor nor the incoming editor receives books directly from publishers for consideration. Publishers should continue to send three copies of books for review consideration, along with any notices of publication, to PsycINFO Services Department, APA, Attn: *Contemporary Psychology: APA Review of Books* Processing, P.O. Box 91600, Washington, DC 20090-1600 or (for UPS shipments) 750 First Street, NE, Washington, DC 20002-4242.