



Brain Injury Screenings at Domestic Violence Shelters

Evaluation Results

October 2016



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INTRODUCTION AND METHODOLOGY

With support by a grant from the Nebraska Department of Health and Human Services, Division of Public Health, Health Promotion Unit, the Brain Injury Association of Nebraska (BIA) working with the University of Nebraska's Center for Brain, Biology, and Behavior provided training for staff at domestic violence shelters on aspects of brain injury and on how to conduct the CDC's HELP Brain Injury Screening Tool with women residing in the shelters.

This evaluation comprises two parts: (1) The HELP Brain Injury Screening Tool, and (2) Presentation Evaluation. These two parts are described below.

The HELP Brain Injury Screening Tool

The HELP Brain Injury Screening Tool is comprised of four sections, with a main question for each of the sections. These main questions create the HELP acronym and are listed here:

H – Have you ever had a hit to your head or been strangled?

E – Were you ever seen in the emergency room, hospital, or by a doctor because of a hit to your head or because of strangulation?

L – Did you ever lose consciousness or experience a period of being dazed and confused because of a hit to the head or due to strangulation?

P – Do you experience any of these problems in your daily life because of a hit to your head or due to strangulation?

A HELP screening is considered positive for a possible brain injury when the following three items are identified:

1. An event that could have caused a brain injury (yes to H or E), and
2. A period of loss of consciousness or altered consciousness after the injury or another indication that the injury was severe (yes to L or E), and
3. The presence of two or more chronic problems listed under P that were not present before the injury.

It was the intention of this project that screens would be collected on all women entering (or currently in) one of four participating domestic violence shelters. Based on information provided by the shelters, it appears that all women were screened for brain injury at three of the four shelters. One shelter may have been somewhat selective in how screenings were administered. However, the number of screenings from this shelter is small enough that little impact was made on the overall screening results. Across the four sites, the methodology of collecting HELP screenings was consistent enough to allow us to state that the results from this report can be reasonably assumed to be representative of women at the four participating shelters.

Presentation Evaluation

The presentation evaluation was a brief survey completed by training participants at the end of the presentation about brain injury and the HELP tool. The survey gave the participants an opportunity to evaluate the presenter and the key elements of the presentation, as well as provide some general feedback.

Participants from five domestic violence shelters received training about brain injury and completed a presentation evaluation at the end of the training.

PARTICIPATING DOMESTIC VIOLENCE SHELTERS

The participating domestic violence shelters are described in Tables 1 and 2 below. Friendship Home in Lincoln, The Bridge in Fremont, Center for Survivors in Columbus, and The Rape/Domestic Abuse Program in North Platte participated in both elements of the project (i.e., training on brain injury and collecting HELP Brain Injury Screening Tools). A fifth site, The Women’s Center for Advancement in Omaha just participated in the training on brain injury.

There were totals of 67 training participants and 93 HELP Brain Injury Screenings.

Table 1		
Domestic violence shelter staff receiving training on brain injury		
Date of Training	Location	Number of Participants
May 19, 2016	Friendship Home (Lincoln)	19
June 16, 2016	The Bridge (Fremont)	7
June 23, 2016	Center for Survivors (Columbus)	10
June 30, 2016	Rape/Domestic Abuse Program (North Platte)	16
September 1, 2016	Women’s Center for Advancement (Omaha)	15
May – June, 2016	Total training participants	67

Table 2	
HELP Brain Injury Screenings conducted by domestic violence shelter staff	
Location	Number of screenings
Friendship Home (Lincoln)	57
The Bridge (Fremont)	15
Center for Survivors (Columbus)	9
Rape/Domestic Abuse Program (North Platte)	12
Total screenings	93

HELP BRAIN INJURY SCREENING TOOL RESULTS

A total of 93 HELP Brain Injury Screenings were collected across the four sites. Of these, 56 (60.2%) were registered as positive for a potential TBI. Note: it is unclear why the rate of positive screenings is so much lower at The Bridge compared to the other three sites (Table 3).

Table 3 Positive HELP Brain Injury Screenings		
Location	Number of screenings	Number (and percentage) of screenings positive for brain injury
Friendship Home (Lincoln)	57	38 (66.7%)
The Bridge (Fremont)	15	3 (20.0%)
Center for Survivors (Columbus)	9	7 (77.8%)
Rape/Domestic Abuse Program (North Platte)	12	8 (66.7%)
Overall	93	56 (60.2%)

[H] Hit to the Head or Strangulation

The vast majority (90.2%) of screened women reported that they had ever sustained a hit to the head or been strangled. Of those who had sustained a hit to the head or been strangled, 60.2% reported that it had happened within a year, and 94.0% reported that it had happened from an assault or fight. More than two-in-five (42.9%) of those who reported being hit or strangled reported that they had been hit or strangled more than six times in their life (Tables 4 through 7).

Table 4 [H] Have you ever had a hit to your head or been strangled?		
	Yes	No
Friendship Home (Lincoln) (n=56)	92.9%	7.1%
The Bridge (Fremont) (n=15)	66.7%	33.3%
Center for Survivors (Columbus) (n=9)	100%	0.0%
Rape/Domestic Abuse Program (North Platte) (n=12)	100%	0.0%
Overall (n=92)	90.2%	9.8%

Table 5	If yes, when was your head hit or when were you strangled? (multiple responses possible)				
	Within the year	1-2 years ago	3-4 years ago	Longer than 4 years	As a child
Friendship Home (Lincoln) (n=52)	59.6%	23.1%	11.5%	15.4%	7.7%
The Bridge (Fremont) (n=10)	50.0%	20.0%	30.0%	40.0%	10.0%
Center for Survivors (Columbus) (n=9)	77.8%	22.2%	11.1%	22.2%	33.3%
Rape/Domestic Abuse Program (North Platte) (n=12)	58.3%	16.7%	16.7%	25.0%	41.7%
Overall (n=83)	60.2%	21.7%	14.5%	20.5%	15.7%

Table 6	Please describe how it happened (multiple responses possible)						
	Playing sports	Riding a bike	From a fall	From an assault or fight	In a car accident	From almost drowning	Lack of oxygen
Friendship Home (Lincoln) (n=52)	0.0%	1.9%	5.8%	94.2%	11.5%	0.0%	3.8%
The Bridge (Fremont) (n=10)	10.0%	0.0%	10.0%	100.0%	10.0%	0.0%	30.0%
Center for Survivors (Columbus) (n=9)	0.0%	0.0%	22.2%	100.0%	11.1%	0.0%	33.3%
Rape/Domestic Abuse Program (North Platte) (n=12)	8.3%	8.3%	33.3%	83.3%	33.3%	0.0%	33.3%
Overall (n=83)	2.4%	2.4%	12.0%	94.0%	14.5%	0.0%	14.5%

Table 7	Given the questions above, how many times had your head been hit or you were strangled?		
	1-3	4-6	More than 6
Friendship Home (Lincoln) (n=53)	37.7%	17.0%	45.3%
The Bridge (Fremont) (n=10)	40.0%	10.0%	50.0%
Center for Survivors (Columbus) (n=9)	55.6%	11.1%	33.3%
Rape/Domestic Abuse Program (North Platte) (n=12)	41.7%	25.0%	33.3%
Overall (n=84)	40.5%	16.7%	42.9%

[E] Seen in the Emergency Room, Hospital, or by a Doctor

Slightly less than half (45.3%) of screened women reported that they were ever seen by a medical professional due to a hit to the head or because of strangulation. Of those who did receive medical treatment, most (90.0%) were seen by a doctor, and most (85.0%) were given follow up recommendations. Of those given recommendations, two-thirds (66.7%) reported following the recommendations (Tables 8 through 11).

Table 8	[E] Were you ever seen in the emergency room, hospital, or by a doctor because of a hit to your head or because of strangulation?	
	Yes	No
Friendship Home (Lincoln) (n=53)	47.2%	52.8%
The Bridge (Fremont) (n=13)	15.4%	84.6%
Center for Survivors (Columbus) (n=8)	62.5%	37.5%
Rape/Domestic Abuse Program (North Platte) (n=12)	58.3%	41.7%
Overall (n=86)	45.3%	54.7%

Table 9	If yes, were you seen by a...		
	Doctor	Nurse	Other medical professional
Friendship Home (Lincoln) (n=25)	88.0%	4.0%	8.0%
The Bridge (Fremont) (n=2)	100%	0.0%	0.0%
Center for Survivors (Columbus) (n=6)	83.3%	0.0%	16.7%
Rape/Domestic Abuse Program (North Platte) (n=7)	100%	0.0%	0.0%
Overall (n=40)	90.0%	2.5%	7.5%

Table 10	Were you given follow-up recommendations?	
	Yes	No
Friendship Home (Lincoln) (n=25)	92.0%	8.0%
The Bridge (Fremont) (n=2)	100%	0.0%
Center for Survivors (Columbus) (n=6)	83.3%	16.7%
Rape/Domestic Abuse Program (North Platte) (n=7)	57.1%	42.9%
Overall (n=40)	85.0%	15.0%

Table 11	Did you follow the recommendations?	
	Yes	No
Friendship Home (Lincoln) (n=23)	60.9%	39.1%
The Bridge (Fremont) (n=2)	100%	0.0%
Center for Survivors (Columbus) (n=1)	100%	0.0%
Rape/Domestic Abuse Program (North Platte) (n=4)	50.0%	50.0%
Overall (n=36)	66.7%	33.3%

[L] Loss of Consciousness or Experience of Dazed and Confused

Two-thirds (66.3%) of screened women reported losing consciousness or experiencing a period of being dazed and confused because of a hit to the head or due to strangulation. Of those who reported such, the majority (67.9%) reported feeling dazed or confused for hours (as opposed to days or months), and most (57.7%) reported feeling this way 1-3 times (Tables 12 through 14).

Table 12	[L] Did you ever lose consciousness or experience a period of being dazed and confused because of a hit to the head or due to strangulation?	
	Yes	No
Friendship Home (Lincoln) (n=53)	69.8%	30.2%
The Bridge (Fremont) (n=13)	38.5%	61.5%
Center for Survivors (Columbus) (n=9)	66.7%	33.3%
Rape/Domestic Abuse Program (North Platte) (n=11)	81.8%	18.2%
Overall (n=86)	66.3%	33.7%

Table 13	For how long did you feel dazed or confused?		
	Hours	Days	Months
Friendship Home (Lincoln) (n=36)	69.4%	25.0%	5.6%
The Bridge (Fremont) (n=6)	83.3%	16.7%	0.0%
Center for Survivors (Columbus) (n=5)	40.0%	20.0%	40.0%
Rape/Domestic Abuse Program (North Platte) (n=9)	66.7%	33.3%	0.0%
Overall (n=56)	67.9%	25.0%	7.1%

Table 14	How many times have you felt this way?		
	1-3	4-6	More than 6
Friendship Home (Lincoln) (n=34)	58.8%	5.9%	35.3%
The Bridge (Fremont) (n=3)	33.3%	0.0%	66.7%
Center for Survivors (Columbus) (n=6)	66.7%	0.0%	33.3%
Rape/Domestic Abuse Program (North Platte) (n=9)	55.6%	11.1%	33.3%
Overall (n=52)	57.7%	5.8%	36.5%

[P] Problems in Daily Life

A substantial majority (81.2%) of screened women reported experiencing problems because of a hit to their head or due to strangulation. Common problems include headaches, anxiety/depression, difficulty concentrating or focusing, and insomnia, among numerous others. Over half (55.1%) of those reporting that they experience problems reported believing that the problems are due to a hit to the head or strangulation (Tables 15 through 17).

Table 15	[P] Do you experience any of these problems (see list in the next table) because of a hit to your head or due to strangulation?	
	Yes	No
Friendship Home (Lincoln) (n=51)	94.1%	5.9%
The Bridge (Fremont) (n=13)	38.5%	61.5%
Center for Survivors (Columbus) (n=9)	88.9%	11.1%
Rape/Domestic Abuse Program (North Platte) (n=12)	66.7%	33.3%
Overall (n=85)	81.2%	18.8%

Table 16	If yes, when was your head hit or when were you strangled? (multiple responses possible)				
	Friendship Home (n=48)	The Bridge (n=5)	Rape/Domestic Abuse Program (n=8)	Center for Survivors (n=8)	Overall (n=69)
Headaches	87.5%	80.0%	87.5%	75.0%	85.8%
Dizziness	64.6%	60.0%	62.5%	37.5%	60.9%
Nausea	52.1%	60.0%	37.5%	37.5%	49.3%
Sensitivity to light	56.3%	40.0%	25.0%	25.0%	47.8%
Blurred or double vision	45.8%	20.0%	37.5%	37.5%	42.0%
Numbness or weakness in any of your limbs	41.7%	40.0%	12.5%	37.5%	37.7%
Insomnia, difficulty sleeping, or changes in your sleeping patterns	70.8%	60.0%	75.0%	62.5%	69.6%
Feeling irritable or impatient	68.8%	40.0%	25.0%	37.5%	58.0%
Feeling anxiety or depression	91.7%	100%	87.5%	75.0%	89.9%
Confusion	50.0%	20.0%	62.5%	50.0%	49.3%
Difficulty remembering	60.4%	0.0%	50.0%	75.0%	56.5%
Difficulty concentrating or focusing	77.1%	60.0%	75.0%	37.5%	71.0%
Challenges with going back to school or work and performing tasks you used to	58.3%	40.0%	50.0%	25.0%	52.2%

Table 17	Do you think any of the problems are related to a head injury?		
	Yes	No	Uncertain
Friendship Home (Lincoln) (n=48)	54.2%	27.1%	18.8%
The Bridge (Fremont) (n=5)	60.0%	0.0%	40.0%
Center for Survivors (Columbus) (n=8)	62.5%	37.5%	0.0%
Rape/Domestic Abuse Program (North Platte) (n=8)	50.0%	12.5%	37.5%
Overall (n=69)	55.1%	24.6%	20.3%

PRESENTATION EVALUATION RESULTS

Responses to the training presentation evaluation survey were overwhelmingly positive, with the vast majority of respondents agreeing or strongly agreeing with each of the five scale items (Table 18). Open-ended comments were also highly positive (Table 19).

Table 18	Percentage agreeing or strongly agreeing with the following statements*					
	Friendship Home (n=19)	The Bridge (n=7)	Rape/ Domestic Abuse Program (n=10)	Center for Survivors (n=16)	Women's Center for Advance- ment (Omaha) (n=15)	Overall (n=67)
1. The speaker's presentation style was effective in communicating information to me.	100%	100%	100%	100%	100%	100%
2. I have a greater understanding of brain injury due to this presentation.	100%	100%	100%	100%	93.3%	98.5%
3. My knowledge of the challenges facing individuals with brain injury increased as a result of this presentation.	100%	100%	100%	100%	100%	100%
4. I have a good understanding of the HELP screening tool and how to use it.	100%	100%	100%	87.5%	93.3%	95.4%
5. The information provided in this presentation will be useful to me either professional or personally.	100%	100%	100%	100%	86.7%	97.0%

*Response options: strongly disagree, disagree, neutral, agree, strongly agree

Table 19	What parts of the presentation were most valuable for you?
	<p>*DV – Domestic Violence, TBI – Traumatic Brain Injury, BI – Brain Injury*</p> <ul style="list-style-type: none"> • Specific examples of injuries and how they affect people and examples that we may see in working with DV victims. • I hadn't thought a lot about the connection between DV and BI this was very valuable. • Symptoms of Mild TBI, length of recovery time. • I think it was great, very excited to be involved. • Information on meditation. • Meditation • Understanding signs/symptoms. Identifying need for attention. • Symptoms and possible effects. • The knowledge and willingness of facilitator to answer questions.

- The screening tool was helpful. The brain visuals.
- The different type of brain injuries.
- Understanding symptoms, knowing there is a tool to assess.
- Very interesting! We've only worked with a few people and diagnosed TBI but now understand how many of our clients are probably being affected.
- Just the overall understanding of the symptoms of brain injuries.
- Discussing what happens to the individual at different times after they've had a TBI
- All of it.
- I liked it all, but what stuck out was the signs/symptoms someone with a brain injury will exhibit.
- Verbalizing/explaining the definitions. Thank you for the HELPS screening tool- easy to use! Will analyze and study more to use more effectively.
- Information on the effects of TBI
- While I've read about TBI's the information broke down the mild to moderate to severe injuries. Also the HELP screening tool was great.
- Difference between mild and severe injuries.
- All the information was very valuable.
- I have an uncle who had a TBI years ago and is now struggling with depression and anxiety.
- Excellent presenters - helped make topic understandable. Thank you!
- Understanding what can "worsen" a TBI (stress, outside influence, anxiety) recovery time (make me think about accommodations for women who have a 6-week stay.)
- The information was presented in a sufficient professional manner. I found it very helpful and am excited to bring the survey to the shelter.
- Explaining the anatomy of the brain and how each piece of the brain works in tandem. The 3 levels of brain injury.
- All of it.
- Screening tool
- Children and brain development. Impact of environment on brain development.
- Recognizing symptoms of a TBI. The effects of TBI's
- All of the information was helpful.
- Possible impact of TBI - how it may manifest.
- The children information and how many years the brain develops. I also found the info on different injuries and how the recovery time is different.
- Learning the signs and symptoms of TBI - mild, moderate, severe and suggestions / tips of how to help.
- Red flags for a TBI, terminology, how it applies to DV and assault.
- Losing memory due to a trauma.
- PowerPoint, examples, application to domestic violence.
- Handouts about what an injury looks like / how to manage it.
- How the brain is made up and how certain injuries effect different parts of the brain that provides different functions.
- Pictures.
- Symptoms and signs
- Impact/effects of TBI and strangulation

- All of it - I found it very interesting!
- All of it! Thanks!
- The research, statistics, symptoms, anatomy of how brain functions with TBI. Really appreciated the resources handed out towards end of presentation.
- Red flags to whether a brain injury is more severe. Knowing that symptoms can occur hours, days after initial injury is valuable to know.
- The symptoms and after effects.
- I liked it all!
- Screening tool
- Difference in severity of brain injuries and effects.
- Better knowledge of how brain injuries affect people, screening.
- Signs of brain injury. Difference between brains (the biological parts of the brain), the screening questions, statistical information, to know that women's brains are "more difficult" to recover from a brain injury.
- Information on resources.
- To be honest all the information was valuable for me because it was all new to me. I enjoyed the whole presentation. Based on my career field the symptoms and red flags would be a good tool to know when dealing with my clients.

Table 20	Is there anything you wish we would have covered in this presentation?
	<ul style="list-style-type: none"> • Any additional DV specific info would have been great but understandable that the presentation was more general. • Midline shift syndrome. • Just the child development like you recommended. • More on impact of trauma to pregnant women and the fetus. • Drug use/abuse/sexual abuse comparison to brain injury/function • Would have liked to have copy of PowerPoint in front of me to take more extensive notes, so instead of hurrying to write stuff down. Could take notes aside from things listed. Research shows this makes a difference with remembering information from trainings so brain can retain more info. • What other illnesses / disorders are similar to TBI • Maybe a video about breathing or anything else, but the presentation was really good. • I think the whole presentation was pretty informative and interesting. I think more examples related to our career field would be a great addition. DV is very common and could help others to identify the red flags. DV victims don't talk until somebody realizes what is going on.

CONCLUSION

If the results from the brain injury screening process of this project are indicative of all women who are survivors of domestic violence and receiving shelter and services at domestic violence shelters (and there is no reason to assume that they are not), then there is a clear need for services related to brain injury for survivors of domestic violence and for domestic violence shelter staff to have an understanding of the impacts of brain injury and the needs of those who have sustained a brain injury. Three-in-five women screened for this project registered as positive for a potential brain injury. Given the heartbreaking context of this project, it is not surprising that the vast majority of women (90%) reported sustaining a hit to the head or being strangled. While not every hit to the head or strangulation leads to a brain injury, among those who did report suffering a hit to the head or being strangled, approximately two-thirds also registered as positive for a potential brain injury on the HELP Screening Tool.

This brain injury screening project was not only successful on ascertaining that there is a clear connection between domestic violence and brain injury, but is also began the important process of informing domestic violence shelter staff about brain injury. Training participants were overwhelmingly positive about the impact of the training on their understanding of brain injury and their knowledge of the challenges facing individuals with brain injury.

Many training participants indicated that the understanding of symptoms of brain injury was very useful to them. Many others noted that the information they received about brain injury was eye opening. One participant noted, "I hadn't thought a lot about the connection between domestic violence and brain injury. This was very valuable." Another stated, "We've only worked with a few people and diagnosed TBI but now understand how many of our clients are probably being affected." Another training participant was prompted to think about what accommodations should be made for clients with a brain injury, in particular how to help them avoid things that can worsen a TBI, such as stress and anxiety. Clearly, the training opened up many new areas of understanding that will allow domestic violence shelter staff to better serve their clients.