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Exploring Possible Connections Between Traumatic Brain Injury and Homelessness

Submitted by Stacy Zimmer
May, 2012

MSW Clinical Research Paper

The Clinical Research Project is a graduation requirement for MSW students at St. Catherine University/ University of St. Thomas School of Social Work in St. Paul, Minnesota and is conducted within a nine-month time frame to demonstrate facility with basic social research methods. Students must independently conceptualize a research problem, formulate a research design that is approved by a research committee and the university Institutional Review Board, implement the project, and publicly present their findings. This project is neither a Master's thesis nor a dissertation.

School of Social Work
St. Catherine University & University of St. Thomas
St. Paul, Minnesota

Committee Members:
David J. Roseborough, Ph.D. (Chair)
David Holewinski, LICSW, CBIS
Elizabeth Todd Cowan, MLS

Abstract

The incidence and awareness of Traumatic Brain Injury (TBI) in the general population has become more prevalent in recent times; however, limited public knowledge and research exists regarding the prevalence of TBI among the homeless population. Through an exploratory, qualitative pilot study, this research investigated possible connections that might exist between TBI and homelessness. Nine expert respondents from various disciplines, ranging from social work to neuropsychology, were interviewed to solicit their professional impressions, opinions and experiences about this subject. Findings indicate that there is a significant connection between TBI and homelessness. Specifically, TBI is believed to be both a causal factor contributing to the onset of homelessness as well as a consequence of homelessness. Findings also indicate that there are significant correlations among TBI, chemical dependency and mental illness. Potential implications for practice include that social workers and other health care professionals will properly screen for TBI by asking their clients specifically about histories of any head trauma. Thus, with proper screening, diagnosis and linkage to appropriate services, individuals with TBI have a much better chance of becoming stabilized so as to experience improved level of functioning and quality of life.

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Traumatic Brain Injury (TBI) is common in the general population and is the leading cause of death in people under the age of 45 (Waldmann, 2004). Classification of TBI can range from mild to severe, based on the amount of damage to the brain (Lafferty, 2010). There are two types of brain injury: TBI and acquired brain injury (ABI) (Brain Injury Association of Minnesota, 2011). TBI is defined as “a bump, blow, or jolt to the head or a penetrating head injury that disrupts the normal function of the brain” [Centers for Disease Control and Prevention (CDC), 2011]. ABI is defined as “an injury to the brain that has occurred after birth and is not hereditary, congenital or degenerative” (Brain Injury Association of Minnesota, 2011). An example of ABI would be an anoxic brain injury, which is an injury that can occur when there is an insufficient oxygen supply to the brain for a specific period of time (Brain Injury Association of America, 2011). Choking is an example of a cause of an anoxic brain injury. This study will focus specifically on TBI. Throughout this paper, the terms TBI, traumatic brain injury, head injury, and brain injury will be used interchangeably.

People with known TBIs are often those who have experienced falls, assaults, motor vehicle accidents, and “struck by/against” events- colliding with a moving or stationary object- and have received medical treatment (CDC, 2011). Unfortunately, there is a large number of people who are believed to have a “hidden” TBI, meaning they experienced a blow to the head but either didn’t seek medical care or did, but went on with their lives not realizing how the TBI has impacted them (Hux, Schneider, & Bennet, 2009; Gordon & Flanagan, 2006). “Millions of people have experienced a traumatic brain injury (TBI), but they are unaware that TBI is the underlying cause of problems they subsequently experience, such as poor memory, difficulties in learning and

behavioral changes” (Gordon & Flanagan, 2006, p.1). This hidden TBI population includes many victims of child abuse, battered women, incarcerated individuals, athletes, and the homeless population. To factor in this hidden population, “...Research suggests that, for every person hospitalized with a brain injury, 3-5 others who are injured do not receive any care at all” (Gordon & Flanagan, 2006, p.2). Thus, when multiplying this out, the total population of people with a TBI could be greater than 30 million.

Those with a hidden TBI are more likely to experience “social failure.” Social failure has been referenced in the literature as great difficulty in functioning as a result of significant, on-going cognitive, behavioral and social challenges experienced by a person with an unidentified TBI (Lafferty, 2010; Highley & Proffitt, 2008; Gordon & Flanagan, 2006). Because people with TBI frequently experience complex, overwhelming challenges that impact their ability to lead healthy, productive lives, they are at risk for becoming social failures. After sustaining a TBI, a person’s socioeconomic status is more likely to decline. The ability to keep a job, maintain healthy interpersonal relationships and function well in society is often negatively effected (Lafferty, 2010). TBI is common among incarcerated individuals, inpatient psychiatric populations, and those with substance abuse problems (Gordon & Flanagan, 2006). High levels of depression and anxiety are closely linked to TBI and people with TBI are four times more likely to attempt suicide than those with no brain injury. Thus, these are examples of people who have experienced social failure.

People who have experienced both TBI and homelessness are at high risk of becoming social failures. Although research pertaining to the prevalence of TBI among the homeless population has been limited, the existing literature does indicate that the

prevalence is significant (Lafferty, 2010; Hwang, Colantonio, Chiu, Tolomiczenko, Kiss, Cowan, Redelmeier, Levinson, 2008; Highley & Proffitt, 2008; Waldman, 2004). This appears to be a hidden phenomenon; however, there seems to be significantly more research about TBI among combat veterans and athletes. Specifically, significant attention seems to be focused on people in the public spotlight who have had a TBI, such as professional athletes and people in positions of power, who typically have more resources. Unfortunately, among low-income and homeless people who have limited resources, TBI often goes undetected and therefore untreated.

In a pilot interview with a worker at a supportive housing site, where 80% of the residents were previously homeless, the respondent revealed to this researcher that about 50% of the formerly homeless residents had reported that they had been diagnosed with TBI and another 20% she suspected to have a TBI. The respondent had also done street outreach to the homeless in two major metropolitan cities over a period of 10 years and indicated similar statistics: 50% of the population had reported that they had been diagnosed with TBI and another 20% she suspected of having a TBI. These data are supported by the literature. In a study of homeless people conducted in Toronto (Hwang et al., 2008), there was a 53% lifetime prevalence of TBI. The respondent had also indicated that TBI can be both a contributing factor to and a consequence of becoming homeless, which was also supported in the literature (Lafferty, 2010; Hwang et al., 2008).

In addition, the literature suggests that there is a significant problem with failing to detect TBI among the homeless population. As reported by Highley and Proffitt (2008), busy clinics and emergency departments are not conducive settings for the lengthy interviewing needed to obtain accurate histories of past head trauma. So, unless

the head trauma is the presenting problem in these settings, any history of TBI may get missed. Also, many professionals, including medical doctors and psychiatrists, do not routinely screen their patients for histories of head trauma. If a history of head trauma is elicited, many clinicians tend to order scans rather than neuropsychological testing. This is often not an effective method for detecting TBI because CT and MRI scans will often appear normal despite the fact that there could be significant injury (The Brain Injury Association of New York State, 2008).

This researcher has worked with numerous formerly homeless people with TBI, both diagnosed and undiagnosed. For those with a diagnosis, services such as case management and a representative payee are typically in place. For those without a diagnosis, there are typically no services in place to assist the person with issues of daily functioning. This can be true for many reasons, including that the person is not willing to be referred for neuropsychological testing to determine if there is a diagnosis of TBI, that they are not interested in receiving services of any kind, or that they are interested in getting help, but have difficulty following through with the necessary steps either to get tested, obtain services, or both.

It is evident in the literature that there is a significant problem with failure to detect TBI, especially among homeless persons. Because of this, TBI among this population is considered a hidden phenomenon. Thus, this exploratory study asked what possible relationships might exist between TBI and homelessness in order to determine how best to screen for TBI, provide services to those with TBI, and ultimately to prevent TBI and homelessness. Possible implications of this study are that there will be a better understanding of effective intervention and screening methods as well as services to

benefit this population. The topic of TBI is important to social work practice because social workers often work with people who either are homeless or were formerly homeless and who have had a TBI, oftentimes unbeknownst to both the client and the worker. If social workers either are not aware of the history of TBI or are not focusing on it with their clients, they are missing important opportunities to help their clients address the myriad of problems that are typically associated with TBI. Thus, it is imperative for social workers to be asking their clients questions about history of head trauma so they can make the appropriate referrals if necessary. The topic of TBI is also important to society as a whole because health-related expenses associated with TBI are around \$35 billion per year (Waldmann, 2004). With the increasing focus on containment of rising health care costs, it is in the public's best interest to support efforts that seek to address this public health issue. Utilizing a qualitative research method, this study provided a review of the relevant literature, a description of the methods used to conduct the research, findings from the research, a discussion about what the findings mean and implications for social work practice, policy and research.

Literature Review

Traumatic brain injury (TBI) is an issue that has received increasing attention in the public spotlight as well as in the literature in the recent years. Unfortunately, there has been very limited research conducted on the connections between TBI and homelessness. Despite this, in review of existing research available on this topic, some valuable information was obtained. Four specific themes seemed to consistently emerge from the literature: the prevalence of TBI in the general population; the prevalence of TBI in the homeless population; failure to detect TBI in the homeless population; and screening, diagnosis, and linkage to services. Although there are various types of brain injuries, this study specifically focused on traumatic brain injury, which refers to “a bump, blow, or jolt to the head or a penetrating head injury that disrupts the normal function of the brain” (CDC, 2011).

Prevalence of TBI in the general population

Traumatic Brain Injury (TBI) is the leading cause of death in persons under the age of 45 in the United States (Waldmann, 2004). According to the Centers for Disease Control and Prevention (CDC) (2011), about 1.7 million people experience a traumatic brain injury (TBI) each year and of those, 52,000 die, 275,000 are hospitalized, and about 1.4 million (nearly 80%) are treated and released from an emergency department. The CDC estimated that the total number of people in the United States who have enduring disabilities as a direct result of TBI was 5.3 million, about two percent of the population (CDC, 2011). These data refer to documented incidences of TBI as reported through hospital admissions and emergency room visits.

There are different severities of TBI, ranging from mild to severe, depending on the extent of damage to the brain. With mild traumatic brain injury (MTBI), often referred to as a concussion, a person may experience a brief change in mental status or consciousness or persistent debilitating problems such as difficulty concentrating, confusion, headache, poor memory, sleep irregularities, or sensory issues (CDC, 2011; Lafferty, 2010; Waldmann, 2004). Psychiatric co-morbidity can be present with MTBI as well, including anxiety, depression, irritability, and paranoia (Lafferty, 2010). Mild TBI accounts for 75% of the cases of TBI in the United States. With a severe TBI, the experience may be an extended period of unconsciousness or amnesia after the injury (CDC, 2011).

Under-representation of the actual frequency of incidences of TBI is common. Statistics regarding this issue mostly include reports of emergency room visits and hospital admissions that are associated primarily with moderate and severe brain injuries. Since there is a general lack of public awareness about the consequences of mild TBIs, most people who experience such injuries do not seek medical care. As a result, “researchers have estimated that as many as 85% of all TBIs remain undocumented and are never included in incidence and prevalence reports” (Hux et al., 2009, p.12).

People with a TBI often have difficulty with the following tasks: learning and remembering new information, keeping appointments, having to wait, planning, organizing, paying attention, understanding social cues, relating to others, regulating their emotions and behavior, controlling impulses, and staying away from drugs and alcohol (MacReady, 2009; Highly and Proffitt, 2008; Hwang et al., 2008). These various factors can cause many difficulties in the life of a person who has experienced a TBI. MacReady

(2009) cites Stephen Hwang, who refers to this problem as the “‘can’t do anything right syndrome’: the person can’t go to the welfare office, or if they do find it they get the wrong form, or forget to bring the form to their next appointment” (p.229). Also, the emotional outbursts that people with a history of TBI sometimes exhibit make it difficult for others to want to be around them or help them. Thus, emotional lability and difficulty completing simple tasks should be considered red flags that someone may have a TBI.

In addition to all of the problems listed above, Lafferty (2010) reports that neuropsychiatric disturbances have been proven to result from incidences of TBI. These may include mood swings, anxiety, aggression, irritability, and impaired judgment. Also, after a TBI, a person’s socioeconomic status is more likely to decline. This occurs because the person typically has difficulty holding a job, functioning in society and maintaining normal interpersonal relationships (Lafferty, 2010).

The leading causes of TBI in the general population include falls (35.2%), motor vehicle-traffic crashes (17.3%), “struck by/against” events, which include colliding with a moving or stationary object (16.5%), and assaults (10%). Those most at risk for TBI, who are most often treated in emergency departments, are children 0 to 4 years, adults 75 years and older, and men. In fact, men are 59% more likely to be diagnosed with a TBI than women (CDC, 2011).

Others who commonly sustain TBI are combat veterans, battered women, prison inmates, athletes, and victims of childhood abuse. Over the past several years, TBI has been thrust into the spotlight due to recent combat operations and corresponding recognition of this “hidden phenomenon.” Of the total number of veterans who presented to the Veteran’s Administration (VA) for health care following deployment in Operation

Enduring Freedom (OEF) or Operation Iraqi Freedom (OIF), 66, 023 were identified as possibly having a TBI through outpatient screening completed between April 2007 and fiscal year 2009 (Department of Veterans Affairs, 2010). Through the screening process, 24, 559 were confirmed to have sustained a TBI. “TBI has been called a ‘signature injury’ of Operation Enduring Freedom and Operation Iraqi Freedom (OEF/OIF)” (Department of Veterans Affairs, 2010, p.8). Of the patients seen at Walter Reed Medical Center, 33% with combat-related injuries and 60% with blast-related injuries have sustained a TBI. Fifteen percent of troops who were engaged in active combat in Afghanistan and Iraq self-reported that they may have sustained a mild TBI (Department of Veterans Affairs, 2010).

Battered women are another group who are considered victims of the “hidden phenomenon” of TBI. Women who seek refuge in domestic violence shelters often report multiple blows to the head, being unconscious for unknown lengths of time, and being in comas as a direct result of head trauma (Monahan & O’Leary, 1999). Although social workers have studied various health issues pertaining to battered women, the prevalence of head trauma has received little attention. In their study of 26 residents in a domestic violence shelter, Monahan and O’Leary (1999) identified a 35% prevalence rate of battered women who had received a head injury during a battering incident. Also, Valera and Berenbaum (2003) reported that 74% of women who were choked or physically assaulted by their partners had sustained some type of brain injury (as cited by Hux et al, 2009)). Monahan & O’Leary (1999) state, “Given that batterers will very often target the woman’s head, it seems likely that thousands of women in this population have endured subtle to severe head injuries during their lifetimes” (p.270). The authors

highlighted that one of the reasons why head injury goes unidentified among battered women is that emergency department, primary care and shelter staff may not be properly assessing these women for incidence of head injury. This illustrates the problem that the prevalence of head injury among battered women is significant and needs to be properly addressed by all professionals who provide care to them.

Another population who is part of the “hidden phenomenon” of TBI is prison inmates. The literature reveals that there is a high prevalence of TBI among inmates in various correctional settings. For instance, in a study of jail inmates, Slaughter, Fann, and Ehde (2003) identified that 87% of the study sample reported TBI some time in their lifetime. In another study, a survey conducted in a minimum to high-medium security prison found that 86% of 118 male prisoners reported at least one TBI incident over their lifetime, with 57% reporting more than one (Barnfield & Leathem, 1998). A study by Lewis & Pincus (1986) of 15 death row inmates revealed that 100% reported that they had sustained head injuries over their lifetimes (as cited by Gordon & Flanagan, 2006). Homeless individuals with a history of TBI often experience behavior problems, which can eventually lead to incarceration. According to Lafferty (2010), “homeless people are arrested more often, incarcerated longer, and re-arrested at higher rates than are people who are not homeless” (p.360). Slaughter et al. (2003) concluded that more research was needed to determine the role that the TBI symptoms of anger, aggression, impulsivity, and memory loss play in criminal behavior.

Athletes are another group who commonly experience traumatic brain injuries. Recent research indicating that deceased professional football players had suffered from depression and dementia because of head trauma has been raising concerns about the

long-term effects of concussions and blows to the head. As a result, efforts have been made on both local and national fronts to respond to this crisis. In Minnesota, Governor Mark Dayton signed the Concussion Bill into law in May 2011 (Nord, 2011). This law requires a medical professional to examine and approve a young athlete to return to a sport after sustaining a concussion. It also requires coaches of youth sports to take training annually to learn about the signs and symptoms of concussions.

Nationally, the NFL has responded to the crisis as well. After the deaths of three retired NFL players, two of whom had committed suicide, it was discovered that all had sustained three or more concussions during their career (Mecham & Guskiewicz, 2008). Research is indicating that there is a relationship between repeated concussions and cognitive disorders such as depression and dementia. This was the impetus for the NFL to begin to require that every player undergo a baseline neurological test starting in the 2007 league year.

TBI in the homeless population

Minimal research exists regarding the connections between TBI and becoming homeless; however, the existing literature does indicate that among the homeless population, the incidence and prevalence of TBI is significant (Lafferty, 2010; Wilder Research, 2010; MacReady, 2009; Hwang, Colantonio, Chiu, Tolomiczenko, Kiss, Cowan, Redelmeier, Levinson, 2008; Highley & Proffitt, 2008; Waldmann, 2004). In a study by Hwang et al. (2008), a representative sample of 904 homeless men and women were surveyed in both homeless shelters and meal programs in Toronto, Ontario. Their objective was to determine the lifetime prevalence of TBI and its connection with current health conditions in the study sample. Part of the impetus for their study came from data

obtained from two previous studies that had reported the prevalence of TBI among homeless people, but were limited by three factors: small sample sizes, recruitment at a single shelter and a lack of data from women. The study concluded that there was 53% lifetime prevalence for any TBI and 12% for moderate or severe TBI. For 70% of these survey participants, the first TBI took place before they became homeless. For seven percent, the TBI happened in the same year they became homeless and for 22%, the TBI occurred after they became homeless. Hwang et al. (2008) states,

These rates are 5 or more times greater than the 8.5% lifetime prevalence rate of traumatic brain injury in the general population in the United States and are within the range reported in studies of traumatic brain injury among prison inmates (p.782).

Any possible differences between TBI rates in Canada versus the United States were not addressed in this study.

Among the study participants, the first TBI often occurred at a young age and usually before the initial onset of homelessness. According to Hwang et al. (2008), “This finding suggests that, in some cases, traumatic brain injury may be a causal factor that contributes to the onset of homelessness, possibly through cognitive or behavioural sequelae of traumatic brain injury” (p. 783). Also, history of TBI was strongly associated with a higher lifetime prevalence of seizures, alcohol and drug problems, and poorer physical and mental health. Of significance, this study also showed that TBI was higher among male participants (58%) than among female participants (42%). Similarly, Waldmann (2010) indicated that males are twice as likely as females to experience a TBI.

In another study, conducted by the Wilder Foundation's Wilder Research (2010) homeless people in Minnesota were surveyed. Findings showed that 35% of adults who were homeless for at least one year reported symptoms of traumatic brain injury, in comparison to 24% of those who were homeless for less than one month. Of the participants surveyed, 55% revealed that their head injury occurred before their first episode of homelessness. A history of child abuse was common among the homeless population in this study. Even though this study could not make a direct link between child abuse as a cause of homelessness, over 40% of participants had been physically or sexually abused as children. This suggests that as part of that abuse, there may have been incidences of TBI. For eight percent, the injury occurred during the same year as the onset of homelessness. And for 38%, the injury occurred after they became homeless.

A study conducted in London of 62 homeless males staying in a homeless hostel (Bremner, Duke, Nelson, Pantelis, & Barnes, 1996) revealed that 46% of the participants reported a history of head injury at some point in their lives that was severe enough to cause a loss of consciousness. For some of the participants, the head injury seemed to cause personality changes that subsequently led to homelessness.

Lafferty (2010) also highlights the prevalence of TBI among the homeless population and focuses on how nurse practitioners (NPs) can play a crucial role in helping this population by providing proper TBI screening. Lafferty (2010) asserts that NP's need to make stronger efforts to probe clients for TBI during the history taking portion of the examination. Once a TBI is identified, NP's can refer clients for treatment in the form of rehabilitation services. They can also assist them in obtaining Social Security disability benefits, which then qualifies them for health insurance. Many

homeless people with a TBI fall victim to a common cycle that can be very difficult to break away from. After sustaining a TBI, there is a need for medical care and rehabilitation; however, because many people cannot hold a job due to the difficulties in functioning caused by the injury, they are unable to obtain medical insurance. Without insurance, they cannot receive the appropriate services they need to recover. This makes it nearly impossible for these people to break out of homelessness.

Not only is TBI believed to be a causal factor contributing to the onset of homelessness, but also a consequence of homelessness (Lafferty, 2010; Hwang et al., 2008). Once a person becomes homeless, they are at an increased risk of sustaining a TBI, which can make it difficult to leave life on the streets (Lafferty, 2010). According to the CDC (2011), falls, motor vehicle accidents, struck by/against events, and assaults are the leading causes of TBI in the general population. Homeless people are more at risk of being exposed to these causes of TBI than the general public because of their generally unsafe living conditions (Lafferty, 2010). Due to life on the streets, they are frequently victims of assault, experience all types of injury-including being struck by a car while walking or biking- and are exposed to alcohol and substance abuse. MacReady (2009) cited Virginia Luchetti, former director of the Homeless Encampment Outreach Project in California for five years, who indicated that homeless people often sustained head injuries from accidents while riding bicycles at night and also from being assaulted. She stated, ‘when I interviewed homeless clients and asked about head injury, the majority reported having received at least one serious TBI- being hit on the head with baseball bats and other objects, as well as automobile accidents’ (MacReady, 2009, p.

228). This illustrates the significant risk of experiencing a TBI that people who become homeless face on a regular basis.

Mental health and substance abuse problems are also commonly linked to TBI and homelessness. While the incidence of TBI may increase the risk of subsequent mental health and drug problems, it is also possible that the presence of mental health, alcohol, and drug problems increases the risk of someone experiencing a TBI (Hwang et al., 2008). In the study of homeless men by Bremner et al. (1996), 52% of the participants had struggled with alcohol dependence throughout their lives, 44% had used street drugs at various times in their lives, and 14% were currently using such drugs. Also, findings from the study revealed that homeless men with schizophrenia or alcohol problems might be more at risk for long-term homelessness. According to MacReady (2009), “At least one study has shown schizophrenia to be 10 times more common in homeless people than in the general population, and rates of alcoholism and drug abuse in the homeless can be as high as 93%” (p.229).

Failure to detect

Although TBI is a prevalent issue that needs attention among the general population, it is even more concerning among the homeless population, where it is frequently unreported and undetected (Lafferty, 2010). According to Highley and Proffitt (2008), there are two ways to detect traumatic brain injury: 1) Through direct questioning that would reveal a history of any blows to the head, or 2) By neuropsychological testing, which can reveal and measure deficits in cognitive functioning as a result of traumatic brain injury or other attacks to the central nervous system.

The lack of detection of TBI is a result of various systemic problems. For instance, the literature indicated that no protocols were in place in the medical field that required routine screening of TBI history in the homeless population (Lafferty, 2010; Highley & Proffitt, 2008). Furthermore, many professionals who typically have contact with homeless people such as vocational rehabilitation counselors, mental health workers, social workers, probation officers, domestic abuse counselors, and even many physicians do not routinely ask questions about past incidents of documented or undocumented TBIs (Hux et al., 2009). As Highley and Proffitt (2008) point out, clinics and emergency rooms are not ideal places for time-intensive interviewing that is needed to elicit histories of head trauma. If a history of head trauma is elicited, many clinicians tend to order scans rather than neuropsychological testing. This is often not an effective method for detecting TBI (Lafferty, 2010). As Dr. Steve Flanagan states, "...if there is only microscopic injury to the brain, which can happen after traumatic brain injury (although not always), a standard CT or MRI will appear normal, even though there could be considerable injury" (The Brain Injury Association of New York State, 2008, p.8). He suggests that newer MRI technology, such as functional MRI, is more likely to show injury or damage than standard imaging techniques.

Psychiatric professionals sometimes miss histories of TBI as well. According to Highley and Proffitt (2008), "History-taking in the course of the clinical examination in psychiatry also does not generally include questions about abuse, trauma, or neglect" (p.6). Even when clinicians are skilled at eliciting histories of trauma and abuse, their ability to do so "is a function of the level of trust between clinician and patient, as well as the perceived emotional safety of the environment" (Highley & Proffitt, 2008, p.7).

Finally, health care disparities create barriers to detection of TBI among the homeless population. Highley and Proffitt (2008) indicate that there is a common belief among medical and psychiatric professionals who work with homeless people that their patients might be treated inadequately in emergency rooms because they look “homeless” or because of other prejudices. Because of this, if a person receives a TBI after becoming homeless, it may go undetected and untreated. A recent study of homeless persons who went to the emergency department in Denver for care revealed that they had a 50% less chance of being admitted to the hospital for medical and psychiatric symptoms as their non-homeless cohort of individuals who were admitted to the hospital for similar symptoms (Highley & Proffitt, 2008). “In addition, despite growing evidence that even so-called ‘mild’ TBI has further reaching implications than previously believed, many emergency departments have yet to implement screening and referral for these injuries” (Highley & Proffitt, 2008, p. 7). These examples illustrate the problem that there is a general lack of knowledge among medical and psychiatric professionals about traumatic brain injury.

Screening and linkage to services

Despite the systemic problem of failing to detect TBI in the homeless population mentioned above, there is potential to correct this problem. Through proper screening, diagnoses can be made, which can then lead to referrals to appropriate services and treatment. Ultimately, when the proper services are provided to people suffering from TBI, healing and rehabilitation can begin and future episodes of TBI and homelessness can be better prevented.

The importance of screening homeless people for a history of TBI is well documented in the literature (Lafferty, 2010; Hux et al., 2009; Highley & Proffitt, 2008; Hwang et al., 2008; Waldmann, 2004). In most settings, it is simply a matter of asking questions about incidents of blows to the head, losses of consciousness, or any medical treatment received for issues involving the brain (Hux et al., 2009). Providing examples of possible events in lay rather than medical terminology can often help people recall undocumented injuries. Difficulty in obtaining accurate histories may arise when individuals cannot recall an event because it occurred at such an early age or when there may be potential personal repercussions for sharing details of incidents, such as in the case of domestic violence or child abuse.

There are many advantages to properly identifying individuals with TBI. The most important is the possibility for intervening in a timely way so as to help the individual get the services needed and to provide support to understand the various challenges that may be faced throughout his or her life. With early intervention, individuals with TBI are most likely to benefit from such services and support. For screening to be most effective, it needs to be conducted in settings that are most likely to provide services to people with TBI-related challenges such as homeless shelters, vocational rehabilitation and employment agencies, mental health facilities, prison systems, and domestic abuse shelters (Hux et al., 2009).

Many researchers assert that the most effective means of determining the incidence and prevalence of TBI is to directly interview individuals to obtain self-reports about past head injuries (Lafferty, 2010; Hux et al., 2009; Hwang et al., 2008; Waldmann, 2004). Hwang et al., (2008) urges that clinicians should assess the severity

of brain injury based on self-reported information such as length of unconsciousness, any admission to a hospital after an injury, collateral history, and any medical records available. Lafferty (2010) highlights the importance of nurse practitioners taking an extra five minutes or so to do a cognitive assessment when evaluating a patient who is homeless. Possible examples of tools to utilize that were mentioned include the Montreal Cognitive Assessment (MoCA), the Mini-Mental State Examination (MMSE), and the Folstein Mini-Mental Status Examination.

In order to provide improved documentation of the incidences of TBI among survivors, Hux et al. (2009) conducted a study in which screening protocols were implemented in four settings where services were provided to people with TBI. Results showed that “injuries to the head occurred with alarming regularity” and that around two-thirds of those screened reported such injuries (Hux et al., 2009, p.12). The instrument that was selected as a method for screening individuals was the *HELPS Screening Tool (HELPS)*, obtained from the Michigan Department of Community Health. This tool consists of five general questions about specific TBI events and any possible residual effects a respondent may have experienced in relation to those events. Each question correlates with a letter in the HELPS acronym. Positive screening results occur based on specific affirmative responses to the questions; however, this is not considered sufficient information to diagnose TBI. Instead, this information serves as the catalyst to help explore further the possibility that the individual sustained a TBI.

Once it is determined that an individual has a history of TBI, many researchers recommend that a referral be made for a neuropsychological evaluation, which can provide valuable information on cognitive function (Hwang et al., 2008; Highley &

Proffitt, 2008; Waldmann, 2004). Because the cost of neuropsychological evaluations can be prohibitive, people without insurance or with inadequate coverage are typically unable to access this type of testing. Because the problems in functioning associated with TBI are diverse, care and treatment need to be individualized based on the specific needs of the person. If an individual is seen soon after sustaining a head injury, a referral should be made as soon as possible to a physician so that baseline neurological, emotional, and cognitive data can be properly documented. Often, homeless people experience cognitive or emotional symptoms that seem to disrupt normal relationships and functioning. This should prompt a referral to a neurologist and/or a psychiatrist (Waldmann, 2004).

Individuals who have been diagnosed with TBI need to be educated about their condition and provided information about their treatment plan and prognosis. Many patients and their support systems are relieved to learn about the possible relationship between a head injury and the subsequent changes in functional level, personality, emotions, memory and concentration (Waldmann, 2004). These individuals can be referred to cognitive rehabilitation and support services, often through the local chapter of the Brain Injury Association. Homeless patients in particular will most likely need assistance accessing such services. According to Hwang et al. (2008), “recent studies have shown that rehabilitation interventions improve community integration and other outcomes among people with traumatic brain injury” (p.784). In addition, individuals may be eligible for SSI/SSD disability benefits, which may enable them to access needed services and housing. Once eligibility for disability benefits is determined, then either Medicaid or Medicare is accessible as well. This access to health insurance will help to

alleviate inappropriate emergency room visits (Lafferty, 2010; Highley & Proffitt, 2008; Waldmann, 2004). Hwang et al. (2008) recommend that treatment of concurrent alcohol and substance abuse be considered as well.

Research suggests that homeless individuals with TBI should be helped to ensure that secondary injury doesn't occur (Highley & Proffitt, 2008; Waldmann, 2004).

According to Waldmann (2004), mild traumatic brain injury causes decreased reaction time so those with recent concussions are at high risk for a secondary injury. Thus, individuals need to be educated about this risk and assisted in getting into a safe environment for recovery. Given that many homeless people are at an elevated risk for TBI due to the high prevalence of accidents, substance abuse, and violence, they are constantly at risk for secondary injury. Also, the literature reveals that alcohol use and abuse diminishes the brain's ability to heal and increases the risk of neuropsychiatric and physical symptoms (Highley & Proffitt, 2008; Waldmann, 2004). Highley and Proffitt (2008) state,

Thus, a homeless person with evidence of traumatic brain injury who has been abstinent from drugs and alcohol for a number of years and is able to avoid violent situations will likely remain at his or her current level of functioning, or even improve, if enrolled in a program of cognitive rehabilitation. On the other hand, persons with histories of traumatic brain injury who continue to drink and use substances may continue to experience declining cognitive functioning as long as the substance abuse continues (p.5).

With the incidence and prevalence of TBI in the general population becoming more widespread in the public awareness, there is more attention directed to

understanding the seriousness of the impact the injury has on an individual's life, the importance of screening for TBI and the value of connecting individuals with TBI to appropriate services. Among the homeless population, where there is a high prevalence of TBI, there is an even greater need to assist individuals identified with TBI to obtain necessary screening, diagnosis, and referrals to appropriate services because of the multiple challenges and barriers that homeless individuals face. With the appropriate support and services, homeless individuals with TBI have a better chance at healing, rehabilitating, and reintegrating into society so as to lead more productive, fulfilling lives. Ultimately, the goal is to prevent future episodes of TBI and homelessness.

Methodology

Research Design

The purpose of this research study was to determine what possible relationships might exist between traumatic brain injury (TBI) and homelessness. Specifically, this study identified how TBI is mostly considered to be one causal factor contributing to the onset of homelessness, while it is also considered to be a consequence of homelessness. A qualitative, exploratory pilot study was utilized to elicit data.

Population and Sample

The sample consisted of nine professionals who either have worked or are currently working with clients who (1) have TBI and/or (2) have been homeless at some point in their lives. There were six women and three men who were interviewed. Two of the respondents were interviewed together at their request. The variety of professional positions held by respondents in their collective experiences included neuropsychologist, clinical social worker, case manager, homeless outreach worker, nurse, homeless shelter staff, director of programs serving the long-term homeless, regional manager of an agency working with the long-term homeless, Certified Brain Injury Specialist (CBIS) and TBI screener. All respondents had specific knowledge about TBI and homelessness. Years of experience ranged from nine to 20 years. This researcher started by interviewing a neuropsychologist and a clinical outreach social worker, both of whom were recommended to this researcher by colleagues. Non-probability snowball sampling was utilized, in which respondents identified and provided information about additional potential respondents who met the criteria stated above. Potential respondents were

screened during the initial contact to determine if they met the criteria for participating. Individuals who did not meet the criteria were excluded from the study. This type of sampling allowed for a wide range of professional participation. This researcher thought it would be interesting and informative to take a multi-disciplinary approach by interviewing a variety of professionals working with this particular population to obtain different perspectives, draw from a broad knowledge base about professional experiences, and thus to be able to compare sources of data.

Protection of Human Participants

Protection of study respondents was maintained before and after the data were collected, analyzed, and publicly disseminated. A proposal was submitted to the Institutional Review Board (IRB) through the University of St. Thomas to obtain approval to conduct the research. Upon approval, the first potential participants were contacted and invited to participate in the interviews. Respondents were given a consent form to sign, which was reviewed with them in person, and were offered a copy of the consent form. The consent form explained the purpose of the research study and how data would be used and stored (see Appendix A). Confidentiality was insured by keeping all data in secured locations. For instance, transcriptions and research notes were saved in a file on this researcher's home computer which was password-protected. Also, audio recordings and printed transcriptions were kept in a locked file cabinet at this researcher's home. No one else had access to this information and no one else assisted with the transcription of the data. This researcher reduced the potential for coercion by stipulating on the consent form that the respondent could choose not to answer any of the interview questions and could stop the interview at any time as well as by stating that their decision

whether or not to participate would not affect their relationship with either the University of St. Thomas or St. Catherine University. There was very little risk in relation to this research study given that no clients or vulnerable populations were interviewed and that the interview questions were not of a sensitive or personal nature. There were no direct benefits to the study participants (i.e. financial incentives).

Data Collection

This researcher invited each study respondent to participate in interviews through either phone or email contacts. Starting in January 2012, interviews took place at locations that were convenient to the respondents. Interviews were audio-taped and lasted 40 to 60 minutes. The data-gathering procedure consisted of semi-structured interviews in which 12 open and closed-ended questions were asked of each respondent. Each interview was audio-taped and transcribed by this researcher. Each respondent signed a consent form at the time of the interview and was offered a copy of the signed form.

Interview questions were developed by this researcher and were based on the thematic content obtained from a review of the literature (see Appendix B). Four central themes emerged from the literature: 1) the prevalence of TBI among the general population; 2) the prevalence of TBI among the homeless population; 3) failure to detect TBI in the homeless population; and 4) screening, diagnosis, and linkage to services. In the development of the questions, this researcher focused on asking for specific information that would help answer the research question. For example, one imperative question was to ask the respondent if they have in the past or were currently serving any individual who has been homeless and/or has sustained a TBI. Another key question was

to ask the main research question, which is if the respondent believes there is a causal or correlational relationship between TBI and homelessness and if so, why. Because the literature indicates that TBI is considered to be both a causal factor contributing to and also a consequence of homelessness, a follow up question asked the respondent if they believe this is true based on their professional experience and why. In regard to screening for TBI, this researcher asked the respondents what method, if any, was used to screen their clients for TBI and what services, if any, were in place to help these individuals.

Data Analysis

After the qualitative data were collected, it was transcribed by this researcher. Content analysis was utilized to analyze the data. This process entailed reading through the transcriptions multiple times to carefully identify patterns, themes, and meanings. Codes of common words and phrases were counted and categorized. The process allowed this researcher to develop the themes and organize the data. The themes from the research were compared and contrasted with the themes found in the literature.

Strengths and Limitations

This research had some strengths to its development and design. First, there was a large sample size. Second, this study obtained data from a diverse pool of professionals who have experience with TBI and/or homelessness. This approach provided a unique knowledge base for the current area of research. Third, all of the respondents are current practitioners in the field, which provided for relevant, useful information. Fourth, this was an exploratory, pilot study, which allows for future researchers to expand on the current study.

Some limitations of the study were evident as well. First, not interviewing individuals with histories of TBI and/or homelessness about their experiences and opinions limited the type of information that could be obtained about this research topic. Second, due to this being a pilot study and therefore allowing for only a limited number of interviews to be conducted, there were a few disciplines that were not represented in the research which could have been valuable. Examples of professionals who would have potentially added value to the study include: 1) a professional from the Veterans Administration who works with homeless veterans with TBI; 2) a probation officer; 3) an advocate at a domestic violence shelter; 4) a medical doctor; and 5) a TBI case manager.

Findings

Four central themes emerged from the data analysis process, which corresponded with the four broad questions that this researcher asked about in the interviews: prevalence of TBI in the homeless population, screening for TBI in the homeless population, linkage to services, and prevention of TBI and homelessness. Several sub-themes emerged throughout this process as well.

Prevalence of TBI in homeless population

There was an overwhelming consensus among the respondents that TBI was prevalent in the homeless population. Some respondents reported that they formally tracked data about TBI in the homeless population as part of their work. A neuropsychologist who screened homeless individuals for Social Security Disability eligibility, indicated that 70-80% of the people tested had some form of cognitive dysfunction. Another respondent reported that she screened 100 homeless women for histories of head injury and 85 of them reported the incidence of a TBI at a young age.

Some respondents stated that they did not formally track data about the prevalence of TBI in the homeless population. One respondent with over 20 years of experience in the field said that he relies on his sense about attributes that the client presents with to try to assess if there may be a history of TBI. Based on his expertise, he states, *Well, I think there are a lot of our folks that have TBI and are homeless. Um, we, I would say 50%; I think it's huge in the homeless population.*

Four of the respondents referenced the Wilder Foundation's "Homelessness in Minnesota" survey that studied the percentage of adults who are homeless for one year and report symptoms of traumatic brain injury. One respondent, who is a Certified Brain

Injury Specialist and screener for TBI, stated that the Wilder Foundation started including a question that asked about history of brain injury on the survey in 2003. *They were quite surprised that it turned out to be 29.4%. We were not surprised at all.* Another respondent, who is a street outreach worker, shared that after this question was added to the Wilder survey, he started giving the survey to homeless people he worked with to elicit background information about TBI. Results had a significant impact on him and helped to raise awareness about the prevalence of TBI among the homeless population.

...And then we got the results back and like 40% of people said they had a brain injury or had been knocked out until they saw stars. And, I was blown away and I think everybody was just amazed that that was such a prevalent thing and it was really enlightening to think about like how does TBI contribute to what we perceive as mental health issues and chemical health issues, like... or exacerbate those things and we didn't know. Nobody knew how that could work and like it was suddenly like this big light came on and now I think about it all the time and I know so many of my clients have had head injuries and I ask them about it now. And I'm like, I am surprised- still surprised- by how many.

Two of these respondents remarked that the results of the TBI question on the Wilder survey seemed low. One respondent stated he thought Wilder's results were low. He thought that the actual numbers of TBI in the homeless might be over 40% instead of the 33% reported by the Wilder Foundation.

Two of the respondents differentiated between percentages of those diagnosed with TBI and those who did not carry a TBI diagnosis, but were suspected to have a TBI. One of these respondents, with over 12 years of experience working with the homeless

population, identified that out of the people she had worked with, at least 20% had been diagnosed with a TBI and about two-thirds of the population had experienced a TBI but did not carry a diagnosis. Another respondent, with over 20 years of experience providing services to the homeless, indicated that 60-70% of their clients have been affected by TBI, including about 20% of people diagnosed and about 40-50% suspected to have sustained a TBI.

Multiple TBIs

One sub-theme that emerged under this main theme of the prevalence of TBIs in the homeless population is the prevalence of multiple TBIs that are experienced. Most of the respondents indicated that of their clients who had sustained TBIs, many had experienced multiple injuries. The homeless lifestyle was referenced as a significant factor in this due to issues such as chemical abuse, getting beaten up, and falling. One respondent indicated that there was a significant percentage of her clients that had experienced multiple TBIs. The typical pattern to clients' histories was that there had often been some mild concussions early in life, sometimes from abuse, and then often chronic chemical abuse that led to frequent black-outs and fighting. Her impression was that there were most likely many TBIs that the client was not even aware of. Another respondent commented on how those clients who sustain TBIs from abuse situations *may be prone to repeating that same kind of relationship*, which leads to multiple TBIs.

The likelihood of experiencing multiple TBIs was addressed. One respondent, who is a Certified Brain Injury Specialist stated, *The thing is with TBI, once you have had*

one, you are three times more likely to have a second one and eight times more likely to have a third. She went on to say that all of the people she had screened for TBI had experienced multiple TBIs.

Relationship

A second sub-theme that emerged is whether respondents believed there was a relationship that existed between TBI and homelessness. Most of the respondents stated that they believed there was a significant relationship between TBI and homelessness. One respondent addressed risk. *Yeah, I think if somebody has had a head injury- a pretty significant head injury- where they have had cognitive impairment as a result, they are at a huge... a much greater risk for homelessness.* Another respondent referenced a more direct relationship by saying, *I believe it is one of the underlying causes of homelessness that we have never been able to get a grip on...* She also described the complexity of the relationship:

...I do believe that for some of these folks, if there was that initial brain injury that compromised some of their executive functioning, that part of what we are expecting folks to do when they land in the street is to somehow put things together for themselves and get off. And they can't and they don't know why they can't. Um, and then they use and that compounds the problem and then they get more and more stuck.

One respondent alluded to some of the areas of dysfunction that cause a person with a TBI to spiral downwards and become homeless:

Well, I think it's huge because they can't hold jobs or they forget to pay their rent, um, you know, their budgeting skills and, um, and they get easily overwhelmed and it's the lack of motivation and kind of a fear and just shutting down.

One respondent differentiated that the severity of the TBI matters; for those who experience a MTBI (mild traumatic brain injury), there is no relationship, but for those who experience a TBI that is moderate to severe, there is a relationship.

TBI: causal factor or consequence of homelessness

A third sub-theme of prevalence of TBI that emerged was whether respondents believed that individuals sustained their first TBI before becoming homeless or afterwards. There were some differences in the responses. Five of the respondents indicated that they believed the incidence(s) of TBI happened before individuals became homeless.

I suspect that a lot of times there was an original TBI that happened first...But I think what happens is that people don't remember it and then you have another one and then you probably have another one and then, um, and then the chemical dependency stuff kicks in and then you do more damage.

Several respondents referenced the prevalence of TBIs that occurred in childhood, sometimes from abuse. *There is a lot of life that happens before homelessness.*

Three of the respondents stated that in their experience individuals mostly sustained TBIs first before becoming homeless, but also stated that it was true or possible for some individuals to experience their first TBI after they became homeless. One respondent stated that the incidence of a person experiencing a TBI for the first time after

becoming homeless happens a lot. Another respondent commented on the impact the current economy has on people becoming homeless for the first time:

It does happen, yes. Right now, in... with the recession, of course. You have people losing their jobs, then they lose their homes and so it could be on the rise; however, the majority of the people I have seen had their brain injury prior to becoming homeless.

There was a negative case in the responses. One respondent stated that from her experience, people first became homeless and then experienced their first TBI. She described, *but I meet people once they are already homeless, so... but I have limited, you know, past information.* She explained further that, *If they had one before, it's certainly...that they will get another one, oftentimes, so...* This indicates that there is the possibility that the individuals she had worked with had sustained TBIs in the past, but their complete histories were not obtained.

Why some with TBI become homeless and others do not

A fourth sub-theme that emerged is possible reasons why some individuals with TBI experience homelessness and others do not. There was strong consensus among the respondents that lack of a support system- mainly family support- is a common factor in people with TBI eventually becoming homeless. One respondent referenced that because of the housing crisis, some family members and friends cannot take in their loved ones who may be in crisis due to having a TBI and experiencing loss of stability. Also, the issue of whether or not the family can tolerate helping the individual was mentioned as a factor.

...if somebody has had a TBI, it can be difficult to put up with sometimes what can appear to be rages out of the blue, and, you know, erratic behavior, and everything else. And the person doesn't always know why they are doing it, um, and so I think if they lack those supports that then they are eventually going to end up homeless.

One respondent referenced the distinction between why some people with TBI can maintain some stability with their level of functioning and others with TBI end up homeless:

...If you are not one who has the level of executive functioning to be able to live a structured life and do things in the order- fortunately or unfortunately- we are all required to do- some more than others-depending on who and what you are involved with... you cannot succeed.... Without some kind of intervention, you are not going to be able to have those skills and even with an intervention, they are going to be limited. So, you have to figure out ways to accommodate for that... And I think because of chemical dependency masking it or people just not really paying attention, they think, 'oh, that person is kind of dense'... and oftentimes, they are embarrassed and don't want to ask for help. And then it just spirals further.

Other factors mentioned include the impact of poverty, pre-morbid functioning, recognition of the problem and that there are going to be changes, and the impact of TBI coupled with chemical abuse and/or mental illness. One respondent mentioned that education can be a factor, but clarified this by remarking, *that's not always a guarantee against homelessness if you have had a head injury.*

Interrelationship of TBI, chemical dependency, and mental illness

A fifth sub-theme was the interplay of TBI with chemical dependency and mental illness. Many of the respondents commented that often, TBI goes hand-in-hand with chemical dependency and/or mental illness. *And usually, if they have a TBI, there's mental illness, there's, you know, so it's actually kind of a dual diagnosis.* There were many comments about how it is difficult sometimes to determine what problems a client is really experiencing because symptoms of TBI, mental illness and chemical dependency can all look so similar. Also, it can be hard to determine if one problem led to another. For instance, a person's mental illness may have led them to start drinking as a coping mechanism, which then resulted in a TBI.

But we find that most people that come to us with long histories of homelessness have something else going on, either chemical dependency and a TBI or chemical dependency and mental health... undiagnosed mental health issues. And so part of when we get somebody, the first thing we do is try to figure it out, what's going on. Because most people, if they are able, don't decide to stay homeless.

Some respondents commented on how chemical dependency and mental illness can compound the symptoms of TBI. ... *You can have brain injury too just from drinking too much- the brain is altered and you can get dementia.*

Screening of TBI in the homeless population

A second major theme that emerged from the respondents was that of the importance of screening for TBIs among the homeless population. A majority of the respondents indicated that they formally asked their clients about history of head injury

as part of their program assessments. *I mean, we always ask people, 'have you ever lost consciousness when someone has hit you?' and things like that.* One respondent, who has experience working as a nurse with the homeless population, said, *"Or a classic one that you ask as a nurse is, 'have you ever been to the ER or hospital or had surgeries?'"* *And that can often reveal...* Some of the respondents made the distinction that asking specific versus generic questions made a significant difference in client responses. One respondent, who screens homeless individuals for TBI in a shelter, says that shelter staff use the HELPS screening tool. If two or more of the answers are positive, the staff refer the individual to her so she can try to get an in-depth history by asking around 100 questions. *...Very specific questions and then I get a response...often, the questions are generic and so people don't... 'head injury?' "no." 'Did you fall out of a tree?' "yes." 'Did you lose consciousness?' "yes." "Did you almost drown?" "yes."* Another respondent stated that she also asks very specific questions of her homeless clients.

Well, I just ask, 'have you ever been in a car accident?' or 'were you beat up?' 'During any of your episodes, do you remember falling down?' You know, 'hurting yourself?' and 'have you ever been in the hospital for a blow to the head?'

Three of the respondents described that they typically ask their clients informally about histories of head injury. *I don't do a really thorough screening for that. I mean, when I ask people about it, most of the time, they haven't...* These respondents commented that they rely on their instincts and years of experience working with the homeless population to try to detect if someone may have had a TBI. *...So I guess we count on our suspicions... count on our 'how do things look?'* One respondent identified

that her awareness of TBI was increased through various trainings that she attended, which prompted her to be more conscious of looking for signs of TBI in her clients.

...When people can't connect things in a way that seems so basic, and it's not an issue of IQ or anything like that, it really begs the question...

The issue of building trust was raised as an important component of the screening process. *...you just really get to know a person before they are going to share stuff...*

One respondent spoke of her experience doing neuropsychological evaluations with individuals who had experienced significant trauma in their lives.

...there was just high level of anxiety that would occur when someone would sit down and start testing and they were kind of flooded and shutting down. And so we would have to just, you know, shut down the testing and come back for another day. And just try to build a little more of the relationship first.

Causes

One sub-theme of screening that was evident from the responses were the wide variety of causes of TBI that were identified in the homeless population. One respondent, a neuropsychologist, said that for veterans, concussions from blasts were the primary cause of TBI and for civilians, some of the main causes are fall-related injuries, motor vehicle accidents, and bullet wounds to the head. He distinguished between “open” injuries, which refer to injuries that penetrate the skull and “closed” injuries, which do not penetrate the skull. A majority of the respondents identified that pediatric injuries were very prevalent in the histories of their clients. Causes ranged from congenital issues, injuries caused at birth, playing childhood sports, to injuries from child abuse.

Even those acceleration, deceleration, whiplash kind of, you know, getting thrown around, you know, really young. One respondent remarked about the problem of people minimizing the physical impact that blows to the head has on children:

...And I think that when you sustain that as a kid, do you call that traumatic brain injury? No, you are just unfortunately a kid that has been through abuse. But it is traumatic brain injury. People just don't call it that. It's like, oh, that poor kid, they get hit. Well, yes, but...

One respondent said that in one day, every single homeless person that she screened at a shelter had experienced a childhood head injury, including a brain tumor, meningitis, car accident, falling off a bike, getting struck by lightning, getting hypoxia from almost drowning, all of which had affected their functioning. *And all of them were sleeping on a mat on the floor.*

In terms of causes of TBI as adults, most of the respondents provided the same or similar answers: falling down, getting in fights or beat up, *thumped on... conked with a bottle*, car accidents (either while in a car or a car hitting them while they were walking or riding a bike), and motorcycle accidents. One respondent mentioned working dangerous jobs where people get *cranked in the head* as a cause among some homeless people. Most of the respondents stated that a majority of these TBIs occurred while the individuals were intoxicated because chemical use is so prevalent in this population. Many attributed these causes to the street culture that exists when a person is homeless. *...Well the lifestyle and they get into it and they get beat up, or, like I said, they go down to drinking circles. Those get pretty violent at times.* Sports-related TBIs were mentioned by a few respondents. One respondent indicated that he knows two homeless men who

had played football, one at the college level, whose *heads got rattled*. Two respondents also mentioned clients who had sustained TBIs from boxing. *You know, there's an age group- about in the 50s, mid-50s- where a lot of them boxed growing up.*

A majority of the respondents identified that domestic violence is a very common cause of TBI, predominantly in women. In fact, most of the respondents who had experience working with homeless women indicated that a majority of their clients had sustained TBIs from domestic violence. *...It wasn't too often that I saw a woman who didn't have that in her history. I can't recall any.* Another respondent stated that *It's been primarily through choking that women have sustained a traumatic brain injury... Oxygen is cut off to the brain and they lose consciousness.* Blows to the head were commonly mentioned. *... thrown down the stairs, um, stomped on, kicked in the head...*

Neuropsychological evaluation

A second sub-theme of screening that emerged from the respondents was the importance of the neuropsychological evaluation in assessing for TBI. All of the respondents stated that this is the primary method by which TBI gets diagnosed. The issue was raised, however, about how difficult it is to get a neuropsychological evaluation completed for a homeless individual. This was for a couple reasons. First, a few respondents said that there is a shortage of neuropsychologists who have experience working with the homeless population and understanding some of the common characteristics and barriers involved. For example, two of the common barriers for this population are difficulty tracking time and keeping appointments. One respondent, a neuropsychologist who had screened homeless individuals, stated that she went into

shelters and drop-in centers to conduct her testing. A second reason that was mentioned by respondents as to why it is difficult to get their clients neuropsychological evaluations is that many neuropsychologists won't screen individuals unless they are sober for a specific period of time. Many respondents expressed frustration with this stating that most of the homeless population deals with chemical dependency issues so sobriety is not a realistic expectation.

Our folks never sober up so if we have to wait, it's never going to happen...

Some neuropsychologists will say it takes...that they have to be sober for six months. Well, never going to happen...the psychiatrist here... he said you can't wait. You have to find people. And he has worked with homeless people for a long time and he said this might be as stable as they get.

One of the neuropsychologists interviewed supported this strategy of doing the best you can in terms of testing with what the client presents with. She described how she had tested a man who had come in sober, but he performed worse because *he was getting into DTs*. He shook so bad that he had difficulty doing the motor tests.

So, we actually found that he was doing, you know, better when he had a couple of beers in the morning and then came in and then we just had to really qualify that in the results and say, you know, 'he did not appear to be under the influence, but this is kind of where we had to test him so that he... this was his optimal functioning on this day.'

This respondent explained the difficulty sometimes of trying to determine if an individual's brain impairment is caused by traumatic brain injuries or chemical use issues.

...more often than not, what I saw was this diffuse cerebral dysfunction, um, so that, you know, ok, so is that a result of, you know, someone using alcohol for the last 30 years, you know, to a severe kind of level on a daily basis, or is that the result of all these other head injuries that they have had.

Both neuropsychologists who were interviewed explained what the neuropsychological evaluation consisted of, including that it can take anywhere from four to 10 hours to complete. One works in private practice and does not have direct experience working with the homeless population, but asks about history of homelessness during the psychosocial assessment. Both talked about the process of using standardized tests to determine level of impairment in addition to asking the individual to provide information about the incident(s). The other respondent had worked directly with the homeless population screening for eligibility for Social Security Disability income. She talked about the difficulty that this population had in sitting for long periods of time and the need to therefore shorten the screening to just a couple hours. *So, you know, kind of widdled it down to the essential screening methods that we would need to determine, ok, yes, there's impairment here and this could qualify someone.* One main area of focus for testing was executive functioning since this is a major area of impairment for many people who have sustained head injuries.

Failure to detect TBI

A third sub-theme of screening that emerged from the respondents was failure to detect TBI among the homeless population by various systems. Some respondents

commented that there is a significant problem with the various health care systems failing to detect traumatic brain injury.

I think that people that aren't as aware or trained in it, sadly, when they see someone like the gentleman that I was speaking about, they see chemical dependency first. When really it's... maybe he's chemically dependent, of course, but traumatic brain injury is really his primary, but it's so clouded by... so they get passed over for things.

Another respondent specifically faulted medical providers for not detecting traumatic brain injury in people.

When our medical community, if they had kept up with them, should have prevented that, because it was obvious what was going on. If we still had our family doctors... but when you are bounced around from HMO to HMO, and histories- they forget they are not good historians- and don't always think to tell you.

This respondent provided some explanations as to why doctors are failing to detect TBI. First, she states that they don't ask about histories of head injuries in their general practice. She described working with one client who had at least three TBIs and had been seeing his primary care physician for 10 years. *The doctor actually called me a little bit upset. 'I've known him for 10 years, why didn't I know this?' 'Because you didn't have the opportunity to ask'.* Another explanation provided is that many doctors don't get specific training on TBI. *I've met one doctor who had it in medical school...he had a course on brain injury during medical school, but if you consider how recent the imaging has been, it's understandable.* A third explanation she provided is that only

certain imagining tests can detect a TBI. *When you consider that it's soft tissue that is destroyed- neurons, neuronal pathways are destructed. An MRI does not show that.*

One respondent raised the issue of failing to detect TBIs among veterans. He stated that there is a lot of information about TBIs from concussive blasts among the veterans who are coming back from Iraq and Afghanistan, but not so much about TBIs among veterans of previous wars.

How many of those guys suffered TBI before there was even the words TBI? We never ask and we attribute it all to their alcoholism or the fact that they have schizophrenia or whatever. Think how much more there probably is to the story for those guys.

Two of the respondents commented that mental health professionals often fail to detect TBI. *...For a long time, mental health screening had, 'have you ever had a head injury?' and everyone answered 'no.'* One perception was that the mental illness is usually what is addressed first; people are diagnosed and then get treated with medications, but there is often TBI there as well that gets missed.

Symptoms and level of functioning

A fourth sub-theme that emerged from the respondents was the common symptoms and level of functioning that they observed in their clients. Most of the respondents made similar observations. Many reported that their clients had problems in the area of executive functioning: poor memory and difficulty concentrating, understanding, planning, following through on tasks, making decisions, organizing and keeping track of time. Common memory problems included forgetting appointments and

forgetting to take medications or losing them. Difficulty filtering out stimulation is another common symptom of TBI. *I know people who can't stay in shelters because of the distractions... You go into a shelter, you are going to blow a fuse.* One respondent, who had worked in a homeless shelter, remarked about the difficulty of navigating the shelter system.

It's funny because there is a complete lack of structure, but total structure. If you want to eat, you have to eat at this time. It has to be here. If you stay here, you have to be out by this time. If you do this, you have to walk in this line. You have to keep your bag here. And for people that have that level of executive functioning, it's just devastating.

Several respondents mentioned that changes in personality and extreme emotionality were observed in their clients, including depression, anger, agitation, impatience, and frequent mood swings. Sometimes, these traits masqueraded as something else. *...and I would have just thought it was the alcohol.* Often, these problems would lead to impaired relationships with family members and others. *His family has completely walked away from him because he... they just can't stand him. His wife is gone. His kids don't...he's obnoxious.* Many described that families are often significantly impacted and burdened by all of the challenges that the person with TBI presents with. *...the family may not be able to have the resiliency or the capacity to keep cutting Johnny the break...*

Problems with daily functioning were mentioned as a common issue with clients who had TBI. One respondent talked about a man who had sustained a TBI, was a hoarder, was not able to manage living independently, and ended up being committed.

She articulated that executive functioning is a critical factor in whether or not people can manage functions of daily living and some people have a hard time understanding that. She explained that one of the problems with understanding TBI is that the effects of it can present so differently in people.

...So we have some folks who need a PCA to help them house clean and have those kinds of difficulties. I have other folks who are perfectly able to do that, but then have all kinds of anxiety or rages...

A common theme among respondents was the role of emotional lability, anger management issues and impulsivity in their clients with TBI. Respondents spoke to the frustration and devastation that people with TBI experience. *...People don't know why they are so impulsive, don't know why they are so emotional, you don't know why you can't navigate the way other people seem to...*

The impact of TBI on employability was an issue that was raised by three respondents. Because of impairments in the brain, people with TBI have a difficult time managing a job successfully. Two respondents commented about assumptions that are made about appearance and employability. *They are told to pick themselves up by their bootstraps and do it. Go get a job. They can't.* The issue is that people with TBI do not have a physical disability, they have impairments that are invisible. So, people make assumptions that these people should be able to at least work low-wage jobs, such as fast food or warehouse-type settings.

... but all of those jobs require the ability to, um, engage in a kind of, um, that really quick processing speed, so attention and motor functioning, which the... those are the hallmarks of the area...you know, the areas in decline for someone

with even a mild head injury... So, the jobs that people could maybe be eligible for with their education and their maybe kind of experience, um, are the jobs that are the hardest in many respects, for people who have had these kind of head injuries. So, then, you know, impossible for people to get themselves out of the situation.

Linkage to services

A third major theme that emerged from the respondents was the importance of linking their clients to appropriate services for TBI. Respondents articulated a variety of types of services that they typically try to link their clients to. A majority of the respondents mentioned that having a neuropsychological evaluation was the most effective screening tool to diagnose TBI, and was therefore the main goal in terms of linkage to services. For clients who had reported a history of TBI or who were suspected to have a TBI, but had not yet been diagnosed, a referral for a neuropsychological evaluation was typically the first step. Several respondents indicated that once a diagnosis of TBI was made, then clients became eligible for a variety of benefits and services, including Social Security Disability benefits. Once someone is eligible for Social Security, they then have income to get into some sort of housing, ideally subsidized housing. Also, they are then qualified for health insurance, which makes them eligible for a variety of mental health programs like case management, Adult Rehabilitative Mental Health Services (ARMHS), or an Assertive Community Treatment (ACT) team.

Several respondents mentioned that once their clients had Medical Assistance (MA), they would try to get them on either a TBI or a Community Alternatives for Disabled Individuals (CADI) waiver through county human services because it would

allow them to get specific services such as an Independent Living Skills (ILS) worker, a Personal Care Attendant (PCA), and a payee. Most respondents stated that it was very difficult to qualify for a waiver, that there were not enough waivers available, and very few were actually successful in getting their clients on one. Three respondents stated that they were able to only get one client on a waiver. There was one negative case example. One respondent stated that as a result of getting clients diagnosed with TBI through neuropsychological evaluations, *there were certainly a handful of people who got CADI waivers.*

Another common service that respondents tried to get clients connected to is case management. One respondent, who provides clinical outreach to individuals who are being discharged from psychiatric settings to the streets, says that the goal is to try to get clients connected to services immediately. So, for clients who are hospitalized, the ideal situation is for hospital staff to make a referral for mental health case management. This way, an individual can get on-going support to help get connected to TBI services and other needed resources. Regardless of eligibility for case management, he mentioned that if a client identifies that there is a history of head injury, referrals are made to try to get the client proper screening. Five of the respondents were currently involved with case management services- either providing that service themselves or overseeing staff who do- or, had done this type of work in the past.

There were a variety of other services that respondents mentioned that they connected their clients to, but they were not as common. Cognitive rehabilitation was mentioned as a service that is most often used for clients who are in an acute stage of a head injury, not as much for those whose TBIs happened long ago. Many respondents

stated that because most of their clients had sustained TBIs long ago, they rarely made referrals for this. *Um, so, we haven't had anyone brought to Courage Center. I think the team would see that as a Herculean feat to get some of our folks there...* Other services that were referred to on a less frequent basis included nursing care, psychiatry, therapy, and vocational programs. Although three of the respondents indicated that they connect their clients to a primary care physician, one, a neuropsychologist, stated that this is the first recommendation that he makes to his clients. A few respondents mentioned that in addition to linking clients to services, they also incorporated methods for assisting clients with their daily functioning with such things as calendars, post-it notes, medication machines, picture books, and frequent phone calls. *There's so many things that address the needs of people with brain injury, that diagnosis is just the beginning.* One respondent articulated that sometimes people who work with clients who have a TBI want a quick fix, but because the issue of TBI is so complex, there is no one solution and everyone's care has to be so individualized.

When family members are involved with a client who had a TBI, one respondent commented that she will typically refer them to the Brain Injury Association for information, education, and resource facilitation. *It's very hard for them to understand why their loved ones are acting the way they are acting and why their personality has changed. So, knowledge is the most important factor for that.*

Hierarchy of needs

One sub-theme that emerged from the respondents was the hierarchy of needs that is evident in the process of helping clients with TBI. A majority of the respondents

indicated that getting their homeless clients into housing is a crucial piece of the process of connecting them to services. ...*The first thing we have to do is get them stabilized in housing and then try and see what we can do from there.* One respondent who is a homeless outreach worker talked about housing as a moral imperative:

And our approach is to simply take people and move them in directly to an apartment. We support them in whatever way they are willing to be supported. And it's using the Housing First philosophy. We believe that people should have a right to housing, independent of their ability or willingness to engage in any other kind of support services or make any other life changes. Um, housing is a right and it's our job to let them have a place to live.

Two respondents indicated that there are many other acute needs that tend to come first when working with the homeless population especially. In reference to a client with TBI, a respondent talked about the reality of how hard it is to try to prioritize the competing needs and complex issues that clients present with. *As a nurse, I was more focused on the immediate, like, helping him heal with his fractures, and getting into housing, and addressing some other issues...* Another respondent mentioned that untreated mental, chemical, and/or physical health issues tend to be the more acute conditions that need addressing first in the homeless population, so the TBI gets de-prioritized. He had a pragmatic approach about this type of situation: *even if you know somebody has it, it's kind of like, 'alright, it's a done deal, you know, I can't change that one. I can't do anything about that.'*

Barriers in the system

A second sub-theme that came from the respondents was that of barriers in the system. A few respondents talked about the problem of gaps in the system that they had to work around to try to help their clients get the services they needed. One respondent provided an example of a gap that exists with the method one particular agency uses to try to connect people with TBI to services. ...*The Brain Injury Association has resource facilitation by telephone. I'm sorry, you might... a homeless person might have community voice mail, but that doesn't mean they are going to remember to get to the doctor. They usually don't.*

Two respondents mentioned the problem of not having insurance or not having the right insurance to be able to get a neuropsychological evaluation as a barrier in the system. One example that was provided was a client who was finally able to get a neuropsychological evaluation because the new health care reform law made him eligible for Medical Assistance. ...*We would never have been able to do that until health care reform. In fact I didn't- I couldn't- do that. This guy sat for years without SSI that he deserved because he had no way to pay...*

Another barrier mentioned is the lack of understanding that some medical providers have about how TBI impacts peoples' level of functioning. One respondent expressed frustration recalling the difficulty she had with a doctor regarding a client's care. Her client kept losing her medications and so she had to help this client obtain new prescriptions. The doctor's response was, 'Well, you're drug seeking.' 'No, she has a traumatic brain injury. She lost them.' The respondent said she eventually was able to

get her client connected with a doctor who understood TBI, which made a significant difference in her level of care.

Client's level of insight into problem and stage of change

A third sub-theme that emerged from the respondents is the client's level of insight into their problem and their stage of change. Some respondents indicated that their clients might not even be capable of understanding what their problems are or that life could be experienced differently, which makes it difficult to try to get them help.

...We talk about it as resistance, but really I don't think it's resistance if the client doesn't know that they are resisting or what they are resisting. It's just a client who doesn't get what you are offering. They don't understand why you are bothering them.

A few respondents mentioned the importance of paying attention to the client's stage of change. There was a common issue of some clients just not being ready to get help. *...And so he has all the classic symptoms [of TBI] and yet, couldn't get him to agree to any kind of ... to get officially screened.* In the case of referring for a neuropsychological evaluation, one respondent commented that the issue was sometimes about a fear of doctors or a lack of trust. *So, I would say, most are willing, but it takes a while to get there for some.* Regardless of a client's stage of change, one respondent commented on the importance of the worker's approach. *We are often social worker number 407, so you kind of got to come from a different place that is, um, you know, uh, accepting, uh, really letting them know you work for them.*

Some respondents indicated that just having the TBI identified and diagnosed can often provide a sense of relief for their clients, who then can finally understand why they are having so many difficulties in life. From this point, some acceptance can settle in, which can then lead to some readiness for change in their lives. From here, many individuals seem ready to move into pre-contemplative, contemplative or even action stages of change.

Prevention of TBI and homelessness

A final major theme that emerged from the respondents was how to prevent TBI and homelessness. Most respondents commented that these were overwhelming topics to reply to because the problems were so huge, especially how to prevent homelessness. Respondents generally seemed to have more ideas about preventing TBI than they did about preventing homelessness.

In regard to prevention of TBI, some of the responses were very practical, including use of seat belts, helmets, and reducing the incidence of people drinking and driving. *Well, I think TBI, you'd almost have to go around with a helmet on all the time.* One respondent identified that families need to be provided with sufficient resources to be able to meet their basic needs and taught coping skills so that their home lives may be more peaceful and the likelihood of abuse is decreased. These efforts would ideally help lessen the chances that children will start using chemicals later during adolescence, which could lead to TBIs.

Most respondents mentioned the importance of raising awareness of TBI through education on all levels: individual, community, state and national as a prevention strategy. Many respondents referenced the awareness that has been raised in recent years

on the issue of head injuries in sports that are occurring in youth programs all the way up to the professional level. One response was: *no more contact sports*. Another idea about ways to raise awareness about TBI is through making efforts to get providers to ask their clients questions about history of head injuries. One respondent does this by providing doctors who she encounters with a toolkit, called Heads Up for Physicians, put out by the Centers for Disease Control (CDC) that promotes the importance of screening for TBI. She stated that she does this because doctors don't typically ask about histories of head injuries in their general practice. She has handed out over 150 thus far. Three respondents mentioned the significance of The Wilder Foundation adding a question about histories of head injury on their homelessness survey. *As a result of that Wilder thing, more people are putting it on their intake paperwork or whatever. It's like it trickles out into practice...*

After many years of working with the homeless population, one respondent offered an idealistic recommendation on how to prevent TBI: keeping homeless people away from each other.

...They are each other's worst enemy...so many of these guys end up getting victimized or becoming predators...you get money and you get beat up on the first of the month, because somebody wants your money. Or you get drunk and then somebody beats up or takes... because they want your bottle. ... Sometimes I feel like, man, if you just pluck this person out and put them in a milieu of people who haven't been homeless, they would rise to the occasion.

Respondents also had ideas about ways to prevent homelessness. Comments included educating people about how to catch TBI early, how to diagnose it, and how to

connect people to services so that they don't become homeless. Two respondents said that educating people who work directly with clients who have TBI about services specific to TBI is important. *...Because just diagnosing it is not enough.*

Also, a few respondents felt very passionately about the need for more affordable housing to prevent homelessness. One respondent articulated that the shortage of affordable housing is a political, moral and philosophical issue.

Um, people with disabilities on Social Security income have been priced out of housing since before the year 2000. They cannot afford to live. Housing is a human right. Until Americans stand up and say that it is a human right and do what is necessary to make that happen, we are going to have homelessness. Why is the Humane Society of America for animals, when we allow people to be homeless? It takes political will. It takes community awareness. It takes breaking down the stereotypes of who the homeless are. We are living in a situation similar to what the 30s was, where people were down and out. We as a society have got to do something about this situation.

Affordable supportive housing was mentioned as critical to preventing homelessness. Of course, affordability is necessary, but having on-site supportive services is crucial for helping clients to be successful in housing. *People don't spiral down as far. You kind of catch it and you go, 'ok, let's get back on track here.'*

One suggestion was that an important component of preventing homelessness is educating the public about why people are homeless. The respondent believed that it is unethical for society to allow people to be homeless if they are not mentally competent, for both the individual's well-being and for the safety of society. *...but I think that some*

of what is going on on the streets, that puts kind of everyone at risk, is that, you know, people have really limited options. Her opinion is that there is societal responsibility for the care of our most vulnerable people who cannot adequately care for themselves.

Another suggestion on preventing homelessness was to teach people life skills that they may have never learned before, such as budgeting, organizing, paying rent, bills, and managing a home. One respondent remarked that helping to foster insight in clients is a way to mitigate or lessen both TBI and homelessness.

In conclusion, there were four major themes that had emerged from the interviewees responses: prevalence of TBI in the homeless population, screening for TBI in the homeless population, linkage to services, and prevention of TBI and homelessness, as well as many sub-themes. Respondents provided a range of responses to questions; many in common or over-lapping with others' responses and some unique. Collectively, respondents came from very diverse professional backgrounds, but all had in common that they had worked with people who either had a TBI, had been homeless, or both, which provided for a wealth of information.

Discussion

The purpose of this research study was to explore possible relationships that might exist between traumatic brain injury (TBI) and homelessness by soliciting the perspectives of various professionals who have experience working with people who have had a TBI, have been homeless, or both. The responses from the interviewees helped to answer the research question and were compared and contrasted with data from the literature. Strengths and limitations of this study are described as well as implications for practice, policy, and future research studies.

Summary of the findings

There were themes that emerged among the four categories explored within this project. The four themes related to the prevalence of TBI in the homeless population, screening of TBI in the homeless population, linkage to services, and prevention of TBI and homelessness. Within these main themes, there were several sub-themes that were evident.

Prevalence of TBI in the Homeless Population

The prevalence of TBI in the homeless population and the relationship between TBI and homelessness were mentioned by the respondents and in the literature. The majority of the respondents indicated that TBI is prevalent in the homeless population, which is supported by the literature. Even though minimal research is available regarding the connections between TBI and homelessness, the existing literature does indicate that among the homeless population, the incidence and prevalence of TBI is significant

(Lafferty, 2010; Wilder Research, 2010; MacReady, 2009; Hwang, Colantonio, Chiu, Tolomiczenko, Kiss, Cowan, Redelmeier, Levinson, 2008; Highley & Proffitt, 2008; Waldmann, 2004). Most respondents indicated that they believe there is a relationship between TBI and homelessness and that most often, their clients had sustained one or more TBIs *prior* to becoming homeless. This is supported by the literature, which shows that a majority of homeless individuals reported that they had experienced their first TBI prior to becoming homeless (Lafferty, 2010; Wilder Research, 2010; Hwang et al., 2008; Bremner et al., 1996).

The incidence of childhood head trauma in the homeless population was frequently mentioned by respondents in the current study. Causes mentioned included child abuse and accidents. This is supported in the literature by the Hwang et al. (2008) study, in which it was found that among study participants, the first TBI often occurred at a young age and usually before the initial onset of homelessness. The Wilder Research (2010) study showed that there is a high percentage of homeless participants who reported that they had been physically abused as a child, which suggests that some of that abuse could include TBI. A common pattern that was described by several respondents is that so often with their clients, childhood head injuries caused brain impairments, which created susceptibility for further brain injuries later in life, leading to continual decline in functioning, resulting in homelessness. Once homeless, there is an increased risk of experiencing additional TBIs due to the dangers of living on the streets.

There was some difference between respondents' views and the data from the literature about the incidence of a person experiencing their first TBI after becoming homeless. A small number of respondents indicated that it was possible for someone to

experience their first TBI after they became homeless, but that it was very rare, whereas in two studies from the literature, 22% and 38% of participants, respectively, had indicated that their first TBI occurred after they became homeless (Wilder Research, 2010; Hwang et al., 2008). The fact that this data came from only two studies needs to be factored in. Many of the respondents did address the high probability of a homeless person sustaining a TBI as a result of the dangers of living on the streets, but the distinction was made that there had already been prior TBIs. This is reinforced by the literature as well, in that due to unsafe living conditions, homeless people are typically victims of assault, experience all types of injuries, and are exposed to alcohol and substance abuse (Lafferty, 2010; MacReady, 2009; Hwang et al., 2008). The findings from the current study suggest that the majority of the respondents believe that TBI is a causal factor that contributes to the onset of homelessness.

Another similarity between the current study and the literature is the interrelationship of mental illness and substance abuse problems with TBI and homelessness. Many respondents indicated that so often, substance abuse and mental illness are common in the homeless population and because the symptoms can look so similar to that of TBI, it can be difficult to determine what the true etiology behind problems in functioning is, or if one problem compounded another or increased the risk of another occurring. This is reinforced by the literature. According to Hwang et al. (2008), while the incidence of TBI may increase the risk of subsequent mental health and substance use problems, it is also possible that the presence of mental health and substance use problems increases the risk of someone experiencing a TBI.

There was one sub-theme that emerged from the respondents that was not evident in the literature: why some people with TBI becoming homeless and others with TBI do not. The most common response to this was that lack of a support system significantly contributed to a person with TBI becoming homeless. Other factors mentioned were poverty, pre-morbid functioning, failure to recognize and understand the problem, low education level, chemical dependency and mental health issues. This suggested that respondents believed that the more of these factors that were present, the more likely the person was to become homeless.

Screening for TBI in the Homeless Population

A second commonality between the findings from the current study and the literature is the importance of screening for TBI in the homeless population. Among respondents, there was a split about the process by which histories of head injury are obtained: some asked formally, as part of specific program assessments, and others asked informally, guided by their intuition and years of experience working with people who have had a TBI. Whether asking informally or formally, most respondents expressed that asking very specific rather than general questions about history of head injury was more effective in eliciting information. This suggests that all respondents believe in the importance of screening for TBI among their clients, but the methods used are highly variable. The importance of directly interviewing individuals to obtain self-reports about histories of head injury is well supported in the literature (Lafferty, 2010; Hux et al., 2009; Highley & Proffitt, 2008; Hwang et al., 2008; Waldmann, 2004).

Once TBI is identified through screening, all of the respondents commented that it is important for clients to be referred for a neuropsychological evaluation to determine if there is a diagnose of TBI. Two respondents, who are neuropsychologists, talked about the process of using standardized tests to determine level of impairment during the neuropsychological evaluation. This is supported in the literature as a means to reveal and measure deficits in cognitive functioning as a result of TBI (Hwang et al., 2008; Highley & Proffitt, 2008; Waldmann, 2004). These two respondents also explained that the evaluation also includes a psychosocial assessment and gathering any collateral history and medical records available. This is supported in the literature by Hwang et al., (2008), who urge clinicians to take these particular steps.

Barriers to screening were evident from the interviews as well as from the literature. Three issues were raised by the respondents in regards to barriers to their clients getting a neuropsychological evaluation. First, it can take a long time to get an appointment. Second, many homeless individuals do not have health insurance and cannot afford to pay for this on their own. Or, if they have insurance, it might not be accepted by a particular provider. Third, there is a shortage of neuropsychologists who understand the homeless population. For instance, a few respondents indicated that many neuropsychologists require people to be sober for a significant period of time before they will do the evaluation. Many respondents commented that this is not a realistic expectation with the homeless population because chemical use is so prevalent. So, because of the shortage of neuropsychologists who will work with the presenting characteristics that are common with the homeless population, there can be a long wait to get in for an appointment. The issue of lack of access to health insurance as a barrier to

individuals with TBI getting needed services is supported in the literature (Lafferty, 2010). This suggests that this is a significant problem that needs to be addressed at the policy level.

Another similarity between the respondents and the literature was failure to detect TBI by health care providers. A few reasons were offered. First, respondents mentioned that medical doctors don't ask about histories of head injury in their general practice, so often, TBIs get missed. This is supported in the literature. No protocols were in place in the medical field that required routine screening of TBI history in the homeless population (Lafferty, 2010; Highley & Proffitt, 2008). One respondent noted that if a TBI is indicated, most medical doctors do not screen properly. This was reinforced by the literature in that many clinicians tend to order scans, which are often not an effective method for detecting TBI, rather than ordering a neuropsychological test (Lafferty, 2010; Gordon & Flanagan, 2006). Respondents also indicated that mental health providers often miss histories of TBIs due to not asking specific questions. The literature reinforces this as well. Highley and Proffitt (2008), report that the history-taking that is part of the clinical psychiatric examination typically does not include questions about abuse, trauma, or neglect. Second, respondents indicated that individuals who have had a TBI often have co-morbid chemical dependency and/or mental health issues, so providers often assume that these issues are responsible for particular behaviors and levels of functioning. Third, people who have sustained a TBI have difficulty recalling events from their past, so they may not think to tell providers about histories of head injury or may not remember the incidences. This suggests that changes need to be made across the

health care system so that protocols are in place for professionals to screen individuals for TBI, especially homeless individuals.

Linkage to Services

The third commonality between the findings from the respondents and the literature was the importance of connecting clients with TBI to services. As mentioned above, helping clients get the neuropsychological evaluation was one of the first steps respondents typically took. Once the diagnosis was determined, many respondents focused on trying to help their clients obtain a variety of services and supports. As consistent with the literature, a diagnosis of TBI may create eligibility for Social Security Disability benefits and health insurance, which would help individuals access housing and other services (Lafferty, 2010; Hwang et al., 2008). These were common goals respondents identified in trying to help their clients. Many respondents strongly articulated that if they could get their clients into housing and then get supportive services in place to help them manage their lives, they had a good chance of being successful and staying off the streets. This suggests that housing is a crucial factor in helping to stabilize individuals.

Access issues were mentioned as a barrier by respondents to connecting individuals to services. Respondents stated that there were only a very limited number of Community Alternatives for Disabled Individuals (CADI) and TBI waivers available due to funding cuts, so it was very difficult for most clients to obtain one, which consequently meant that clients were not eligible for a variety of other services. Also, in order to qualify for a mental health case manager or an Assertive Community Treatment (ACT)

team, which could assist individuals in getting connected to services, a client typically had to have a history of multiple psychiatric hospitalizations. Neither of these issues was mentioned in the literature reviewed.

Another difference between the current study and the literature is that respondents indicated that they did not typically refer clients for cognitive rehabilitation. The explanation was that this is typically for individuals who are in the acute stage of head injury, but most of the respondents' clients had typically sustained their head injuries long ago so it did not seem to be as much of a priority as other needed services. This is inconsistent with the literature, which indicates that enrollment in a program of cognitive rehabilitation can help individuals remain at current levels of functioning or even help them improve their level of functioning (Highley & Proffitt, 2008).

Prevention of TBI and homelessness

The fourth major commonality between the findings from the respondents and the literature was about ways to prevent TBI and homelessness from occurring. Most respondents remarked that these were difficult issues to address because of their complexity and magnitude. In regard to the prevention of TBI, respondents commonly replied that raising awareness and educating people about the effects of TBI can have a powerful impact. Also, respondents addressed the likelihood of people with TBI who are homeless experiencing subsequent TBIs, especially due to the dangerous conditions of life on the streets. Thus, the importance of helping individuals get off the streets and to a safe place in order to prevent future TBIs was suggested. This was supported in the literature (Highley & Proffitt, 2008; Waldmann, 2004). Due to all the recent attention

and information that has come out on sports-related head injuries, a couple respondents made statements about eliminating contact sports as a means to preventing TBI, which would most likely be controversial given the popularity of sports.

In regard to prevention of homelessness, the majority of respondents articulated that more affordable housing was needed to house all homeless people. Some respondents were very passionate about this issue, stating emphatically that housing is a human right and that we as a society have a moral responsibility to address and resolve this long-running social problem. Of particular interest is the issue that was raised about whether or not society has a responsibility to care for homeless people who may be considered mentally incompetent. It was acknowledged that these are very complex, often political, issues, but ones that need attention nevertheless. These findings were not supported in the literature that was reviewed. These findings suggest that significant action needs to take place at the policy level to improve the current availability of affordable housing.

Strengths and Limitations of Study

There were many strengths in this research study. First, there was a very positive response rate to this study. This researcher sought to conduct eight to ten interviews and actually completed nine interviews. Respondents were very accommodating and generous with their time and the information provided. This study was conducted using snowball sampling. Initially, names of potential respondents were provided to this researcher. At most of the interviews, respondents provided names of other potential interviewees. This researcher's initial fear was that it would be difficult to find people to

interview. What was discovered was that there were so many potential interviewees, that the list of prospects had to be reduced through a thoughtful, selective process to try to obtain a diverse array of professional backgrounds.

Second, there was a wealth of experience among the interviewees, which provided for very rich, informative data. Because the research method utilized was a qualitative, exploratory pilot study, there was great discretion in how to design the study. This researcher chose to interview individuals representing a variety of different professional positions, including neuropsychologists, a clinical outreach social worker, a nurse, a homeless street outreach worker, homeless shelter staff, case managers, a director of homeless services, and a Certified Brain Injury Specialist (CBIS) and TBI screener. All respondents had experience working with individuals who had sustained a TBI and/or had been homeless. As a result of this approach, there was significant breadth and depth to the range of professional experiences involved.

Third, the main research question that was asked in this study was answered by the respondents. This research study asked if any potential relationships might exist between traumatic brain injury and homelessness. Respondents provided extensive information regarding this question. The majority of respondents did believe that there was a relationship between TBI and homelessness, with most indicating that TBI can be considered a causal factor contributing to the onset of homelessness.

Fourth, the prevalence of TBI among women who have been victims of domestic violence was mentioned by several respondents; however, there was minimal reference to this in the literature that was reviewed.

There were some limitations of this research study as well. First, there were some professional roles that were not represented in the study, which could have provided some valuable, pertinent information. For instance, this researcher intended to interview someone from the Veterans' Administration (VA), who works directly with veterans who have either been homeless or sustained a TBI, to obtain information about that population, but was unable to arrange that. This could have been very beneficial in helping to explore this research topic among the veteran population. This would have been especially interesting not only due to recent attention about TBI among veterans returning from Iraq and Afghanistan, but also to obtain perspectives about veterans from previous wars as well. This is not to negate the valuable information that was provided by a few of the respondents who had experience working with homeless veterans. Another example of a gap in representation among respondents is that there were more respondents who had experience working directly with homeless people and the issue of homelessness than there were respondents who had direct expertise with TBI. This researcher had intended to interview either a TBI case manager or an ILS worker, but was unable to arrange this. It is important to note that all of the respondents who did have knowledge, training and experience with TBI provided very valuable information. Other professionals who could have provided some beneficial information for this study include a psychiatrist, a medical doctor, a probation officer, and a battered women's shelter advocate, just to name a few.

Second, this researcher did not devote much attention to the differentiation among levels of severity of TBI or specifically ask respondents about levels of severity of TBIs that were sustained by their clients. This would have been useful information to obtain

and analyze given that the literature often references levels of severity in relation to likelihood of positive outcomes. Some of the respondents did mention levels of severity in the information that was provided, which was interesting and helpful to learn about.

Implications

Social Work

This research study has implications for clinical social work practice. First, based on the findings in this study, it is clear that there is a significant problem with our health care system failing to detect TBI. Since social workers are part of the health care system and often serve individuals who are most at-risk for sustaining a TBI because of abuse, chemical dependency, mental illness, and homelessness, it is imperative that social workers screen their clients for TBI, no matter what setting they practice in. It is ideal for social workers to attend official trainings about TBI to learn how to properly assess for it, but even learning a few targeted, specific questions can quickly reveal histories of TBI. Two examples of screening tools that could be used by social workers include the HELPS Screening Tool and the Montreal Cognitive Assessment (MoCA). Once TBI has been identified in clients, it is important for social workers to assist their clients in getting referred to an appropriate professional for a neuropsychological evaluation to help determine if there is a diagnosis of TBI. If a diagnosis is made, social workers can assist their clients in trying to obtain as many services as needed. When clients are able to obtain the appropriate services and support, they have an increased chance of being successful in housing, relationships, managing daily life, and ideally avoiding future episodes of TBI or homelessness.

Second, just being aware of the common symptoms of TBI can assist clinical social workers in adapting their therapeutic approach to accommodate clients who have had a TBI. For instance, because memory problems are common, social workers can repeat certain tasks or exercises that would be beneficial for clients with mental illness to practice on their own at home. This helps reinforce the message for the client so that it can be applied to daily life.

Third, as clinical social workers, our job is to constantly be assessing for our clients' capacity to have insight into their problems and assessing for their stage of change. This fits well in working with individuals who have TBI. For many of these individuals, there may be difficulty even understanding what it means to have a TBI or why they are acting or feeling the way they are. As clinicians, we can assist our clients in the process of building their capacity for insight into their situation. Some may be unwilling to pursue diagnosis of TBI, based on fear, misunderstanding, or other reasons. For others, just getting a diagnosis can bring about a sense of relief and understanding. Social workers can help facilitate the process whereby clients can start to let a little acceptance settle in, which may prompt some readiness to seek support and services for their TBI.

Policy

This research has implications for policy as well. As was indicated by some of the respondents, TBI and homelessness are large issues that are complex and difficult to resolve. But, these problems are not insurmountable. There needs to be more public awareness campaigns to educate people at all levels about the impact of and devastation

caused by TBI. Prevention efforts targeting contact sports are a start. More efforts have to be targeted to preventing pediatric injuries, including child abuse and accidents, as well as domestic violence, which are common causes of TBI. This has to be initiated at the policy level for there to be any significant and lasting impact. If the incidence and severity of TBI were reduced, there most likely would be a significant reduction in the amount of homelessness as well.

There needs to be more initiatives at the policy level around ending homelessness as well. Because homelessness is such a divisive and political issue, it is imperative that there be education at all levels about why people are homeless in an effort to try to raise awareness and dismantle stereotypes. There needs to be enough quality, affordable housing available so that no one is without a place to live. This has to happen at the policy level. For too long, there has been an extreme shortage of affordable housing. As respondents indicated, housing is a basic human right and it takes all human beings to stop, check their consciences, and think about whether it is alright for only some people to have access to housing. Then, people need to act on their consciences to do what is right. This can start by lobbying legislators about the need for more funding for affordable housing.

An additional implication for policy is the need for sufficient health care for people who have had a TBI. As was described by a couple respondents, some clients weren't able to get neuropsychological testing due to lack of health insurance or not having the right kind of coverage. With the passage of the new health care law, some individuals were able to finally qualify for coverage, which allowed them to obtain needed testing. This indicates that the current health care reform law allows valuable

access to many people who didn't have it before and so policy-makers should do what they can to protect it from being changed or eliminated.

Research

This study has implications for future research as well. Since this was an exploratory, pilot study, future research could expand on this topic by either broadening the pool of professionals to include a more diverse sample, asking a different set of questions, or to actually interview clients who have had a TBI and/or been homeless about their perspectives on this research topic. Learning first-hand about individuals' personal experiences could help to raise more awareness on this subject and help to inform future studies about TBI and homelessness. Also, as mentioned prior, there is a need for more research on the impact of TBI on veterans of not only recent wars, but of previous wars as well. Given the significant percentages of veterans who have sustained TBIs in Iraq and Afghanistan, it would be informative to track their lives and level of functioning, specifically whether any experience homelessness. Additionally, future studies could include expanding research on the link between TBI and rates of incarceration given that the existing literature indicates that there is a significantly high percentage of TBI among incarcerated individuals.

Another implication for future research is to explore the topic of "social failure" as a conceptual framework. Social failure has been referenced in the literature as the condition of having great difficulty in functioning as a result of significant, on-going cognitive, behavioral and social challenges experienced by a person with an unidentified TBI (Highley & Proffitt, 2008; Gordon & Flanagan, 2006). Typically, this includes

people who have sustained a TBI and are either not aware of it, or they are aware of it, but are unaware that this is the cause of so many of their problems in functioning. Often, for these people, they are referred to as having a "hidden TBI" and because of their difficulties in functioning, they often become homeless. This concept of social failure could be explored further as a means for better understanding the relationship between TBI and homelessness.

In conclusion, this research study asked if a possible relationship might exist between TBI and homelessness. Through a thorough, careful review of the existing literature and through findings elicited by interviewing a variety of professionals who have experience working with individuals who have had a TBI and/or been homeless, this researcher concluded that there *is* a relationship between TBI and homelessness. Specifically, TBI is viewed as a causal factor contributing to the onset of homelessness, with the majority of homeless individuals experiencing their first TBI prior to becoming homeless. TBI is also believed to be a consequence of homelessness due to the risks and danger of life on the streets.

By screening for TBI, social workers play a key role in the process of identifying and referring individuals to receive proper evaluations and diagnoses. Social workers can then assist individuals to obtain needed services, resources and support to help them become stabilized. When individuals with TBI are able to obtain the appropriate level of care, they have an increased chance of being successful in housing, relationships, managing daily life, and ideally avoiding future episodes of TBI or homelessness.

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APPENDIX A
CONSENT FORM
UNIVERSITY OF ST. THOMAS

Connections Between Traumatic Brain Injury and Homelessness

I am conducting a study looking at the possible relationship between a person having a history of Traumatic Brain Injury (TBI) and also experiencing homelessness. I invite you to participate in this research. You were selected as a possible participant because of your experience working with people who either have sustained a TBI, have been homeless, or both. Please read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by: Stacy Zimmer, a graduate student at the School of Social Work, St. Catherine University/University of St. Thomas and supervised by Dr. David Roseborough.

Background Information:

The purpose of this study is: to determine what the connections are between a person's history of Traumatic Brain Injury (TBI) and becoming homeless.

Procedures:

If you agree to be in this study, I will ask you to do the following things: Participate in a 45-60 minute interview, in which I will ask you a series of questions pertaining to the study; agree to be audio-taped during the interview; agree to allow me to transcribe the data; and agree to allow me to anonymously present the findings in a public dissemination of the clinical research study at the University of St. Thomas in May, 2012. Please note that you do not have to answer any question that you do not want to answer and I will turn off the tape recorder at any time you request.

Risks and Benefits of Being in the Study:

There are not known risks to this research study.

The study has no direct benefits (i.e. financial incentives).

Confidentiality:

The records of this study will be kept confidential in the following ways: transcripts will be password-protected on my home computer and audio tapes and research records will be kept in a locked file in my home. No one else will have access to this information. Quotes from the interview may be included in the research paper and presentation, but will not be directly attributed to you. The findings of this research project won't be published as a document, but will be presented publicly by me. The audiotape and transcript will be destroyed by May 31, 2012, after the clinical research presentation.

Voluntary Nature of the Study:

Your participation in this study is entirely voluntary. You may skip any questions you do not wish to answer and may stop the interview at any time. Your decision whether or not to participate will not affect your current or future relations with St. Catherine University, the University of St. Thomas, or the School of Social Work. If you decide to participate, you are free

to withdraw at any time without penalty. Should you decide to withdraw, data collected about you will not be used for this study.

Contacts and Questions

My name is Stacy Zimmer. You may ask any questions you have now. If you have questions later, you may contact me. If necessary, you may contact my instructor, Dr. David Roseborough, at 651-962-5804. You may also contact the University of St. Thomas Institutional Review Board at 651-962-5341 with any questions or concerns.

You will be given a copy of this form to keep for your records.

Statement of Consent:

I have read the above information. My questions have been answered to my satisfaction. I consent to participate in the study and to be audio-taped.

Signature of Study Participant

Date

Print Name of Study Participant

Signature of Researcher

Date

Appendix B

Interview Questions:

1. Please tell me what you do in your current position.
2. What is the typical client population that you serve?
3. Have you in the past or do you currently work with any clients/patients who have either sustained a Traumatic Brain Injury (TBI), experienced homelessness, or both? (If both, do you know what percentage? Do you know what occurred first, the TBI or the onset of homelessness?)
4. Based on your professional experience, do you believe that TBI is both a causal factor contributing to and also a consequence of homelessness? If so, why?
5. How were the diagnoses of TBI determined for these clients/patients? (Do you typically ask your clients about a history of head injuries?)
6. What have been the causes of TBI among the clients/patients you have treated?
7. Do you think there is a correlational relationship between a person having a history of TBI and becoming homeless? If so, why?
8. Why do you think some people with a history of TBI become homeless and others do not?
9. What have you observed about the level of functioning of your clients/patients who have a history of TBI?
10. What has been your greatest challenge working with individuals who have a history of TBI?
11. After the diagnoses were made for your clients/patients with TBI, what kinds of referrals for treatment and services were made or recommended?
12. Is there anything else you want to share that you think would be helpful for me to know?