

A MIXED METHODS INVESTIGATION OF THE IMPACT OF NEUROCOGNITION,
GENDER ROLE CONFLICT AND SELF-IDENTITY ON PSYCHOSOCIAL ADJUSTMENT
TO TRAUMATIC BRAIN INJURY

BY

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Monique Renae Pappadis

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Many persons with traumatic brain injury (TBI) experience substantial emotional distress and psychosocial adjustment difficulties. The contribution of alterations in gender roles and self-identity to psychosocial adjustment has been hypothesized, but not empirically investigated. To address this gap in the research, the current study: (1) assessed experiences of gender role conflict and changes in sense of self after TBI, (2) assessed gender and racial/ethnic differences on gender role conflict and changes in sense of self (3) investigated the mediation effects of cognitive functioning and avoidant coping, and (4) tested a moderated-mediation model of psychosocial adjustment by gender and race/ethnicity. Using an equal-status, concurrent mixed-method approach, 60 persons with TBI, who were at least 3 months post injury, participated in a semi-structured interview regarding the gender role conflict and self-identity after TBI, brief neuropsychological assessments of cognitive functioning, and self-report measures on gender roles, gender role conflict, sense of self, coping, acceptance of disability, anxiety, and depression. Using quota sampling of men and women, forty-eight of the sixty participants completed qualitative interviews based on their racial make-up and stage of recovery. An overall model using structural regression modeling was utilized to test meditational and moderated mediation effects of factors influencing psychosocial adjustment to TBI. Persons with TBI reported gender role conflict and changes in sense of self, which impacted their adjustment to TBI. Avoidant coping fully mediated the relationship between self-identity and psychosocial adjustment. A theory of *Reconstructing Identity after TBI* emerged from the data, which has implications for clinical practice, service delivery and identifying key factors associated with psychosocial adjustment of a diverse sample of persons with TBI.

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CHAPTER 1

INTRODUCTION

Traumatic brain injury (TBI) is a growing public health concern in the United States with an annual incidence rate of 506.4 per 100,000 population (Corrigan, Selassie, & Orman, 2010). A TBI is a disruption of brain functioning caused by an external force or penetrating injury to the head. A TBI is a debilitating condition that affects an individual years after injury. After hospitalization, there are about 3.2 million Americans disabled (Zaloshnja, Miller, Langlois, & Selassie, 2005). The leading causes of TBI are from falls, motor vehicular accidents, struck by/against something, and assaults, respectively (Langlois et al., 2006). Groups at higher risk of TBI are certain ethnic minority groups, men, children, elderly and those who are socio-economically disadvantaged. American Indian/Alaskan Natives, Blacks, and Latinos have the highest risk of sustaining a TBI (Adekoya et al., 2002; Jager et al., Weiss, Coben, & Pepe, 2000).

A higher prevalence of TBI among the aforementioned ethnic groups may be due to the higher rate of alcohol- and violence-related incidences of TBI. For example, the most frequent and fatal incidences of TBI among Blacks are due to firearm-related injuries (Adekoya et al., 2002). The incidence in men is nearly double that of women (Langlois et al., 2003), which may also be due to participating in risky behaviors, such as driving under the influence and physical violence. Children and the elderly have high incidence rates (Langlois et al., 2006) in comparison to other age groups, which is due mainly to falls. Lastly, past researchers have investigated the impact of socioeconomic status on the prevalence of TBI using the insurance status. Individuals who do not have insurance are twice as likely to sustain a TBI in comparison to individuals with private insurance (Selassie, Pickelsimer, Frazier, & Ferguson, 2004). Based

on these reports, it is important to better understand the needs of ethnic minorities, men, women, children, elderly and those with limited financial/medical resources after sustaining a TBI.

There are very few studies that assess the functional outcomes and needs of ethnic minorities with TBI. Based on a systematic review of the literature, only 39 peer-reviewed studies assessed the outcomes for ethnic minorities (Gary, Arango-Lasprilla, & Stevens, 2009). Several articles which compare ethnic minorities to Caucasians failed to describe the ethnic minority mixture of their samples, which make it difficult to evaluate certain aspects of outcomes for minorities. Gary et al. (2009) found that ethnic minorities, specifically Blacks and Hispanics, tend to have poorer functional outcomes and community integration, are less likely to receive rehabilitation services after traumatic brain injury, and less likely to be employed post injury.

Rehabilitation services are often needed after a TBI; however, the length of stay in rehabilitation facilities following brain injury has decreased significantly over the past decade (Kreutzer, Kolakowsky-Hayner, Ripley, Cifu, Rosenthal, Bushnik, et al., 2001). Blacks and Hispanics in comparison to Whites receive less rehabilitation services, such as physical, occupational and speech therapy (Burnett et al. 2003). Limited research has been on key areas such as marital stability, emotional/ neurobehavioral complications and quality of life outcomes among ethnic minorities after injury.

Recovery Process and Outcomes

After TBI, individuals may experience different behavioral (e.g. inhibition and socially inappropriate behavior), cognitive (e.g. impaired memory and decreased concentration),

emotional (e.g. anxiety and depression), or physical sequelae (e.g. headaches and motor weakness) (McKinlay & Watkiss, 1999). The emotional functioning of persons with injury may affect their abilities to adjust to their injury and its consequences, while also reintegrating back into the community and regaining independence and living productive lives. Anxiety and depression often occur together at high levels for prolonged periods and have long-term effects on the emotional state of the person with TBI (Morton & Wehman, 1995). In comparison to other groups with medical conditions, persons with TBI report more anxiety (Linn, Allen, & Willer, 1994) and depression (Curran, Ponsford, & Crowe, 2000; Hibbard, Ashman, Spielman, Chun, Charatz, & Melvin, 2004). As in other areas of research, there is a significant correlation between depression and decreased quality of life for persons with TBI (Evans, Sherer, Nick, Nikase-Richardson, & Yablon, 2005; Hibbard et al. 2004; Hoofien, Gilboa, Vakil & Donvick, 2001; Underhill, Lobello, Stroud, Terry, Devivo, & Fine, 2003).

Due to impaired self-awareness and the lack of knowledge regarding the neurobehavioral and psychological factors associated with TBI, individuals report poorer life satisfaction, which is associated with higher levels of depressive symptoms (Evans et al., 2005). Freeland (1996) reported that nearly half of persons with moderate or severe TBI demonstrate impaired awareness (cited in Flashman & McAllister, 2002). Impaired awareness impedes the individual's ability to recognize the common symptoms after injuries, which aren't usually noticed until they attempt to resume pre-injury activities, such as work, school and parenting.

Often, impaired awareness may cause individuals to make unrealistic goals regarding their recovery and resumption of pre-injury activities. Their cognitive functioning or impaired awareness may contribute to the decrease in productive activities after injury (Atchison et al.,

2002). Decreased productivity is often reported after sustaining a TBI (Lam, Priddy, & Johnson, 1991). Impaired memory, attention and concentration can make it difficult for one to engage in productive activities, with high unemployment years after injury (Dikmen, Temkin, Machamer, Holubkov, Fraser, & Winn, 1994; Kreutzer, Marwitz, Walker, Sander, Sherer, Bogner, et al., 2003; Sander, Kreutzer, Rosenthal, Delmonico, & Young, 1996). Sander et al. (1996) found that at least 62% of those employed prior to injury were unemployed between 1 and 3-4 years post-injury. It is not uncommon for persons with TBI to be unable to find meaningful employment once they return to their community after injury (Franulic, Carbonell, Pinto, Sepulveda, 2004; Steadman-Par, Colantonio, & Ratliff, 2001).

Even relationships are affected after sustaining a traumatic brain injury (Bergland & Thomas, 1991; Temkin, Corrigan, Dikmen, & Machamer, 2009). One of the most common long-term effects after TBI with regards to relationships is decreased intimacy (Corrigan, 1994). In addition, loneliness is a common difficulty (Kersel, Marsh, Havill, & Sleight, 2001). Hoofien et al. (2001) found that nearly one third of their survey respondents with TBI reported that they do not have social contacts with individuals who are outside of their family. Social isolation often occurs due to persons with injury lacking the initiative to seek new intimate relationships and friendships, resulting in loneliness.

Although the consequences of injury usually improve during the first few years after injury, many problems persist for years after injury (Sander, Roebuck, Struchen, Sherer, High, 2001). The wide range of cognitive, physical, psychosocial, behavioral, and vocational challenges that persist through many years of community living negatively affect quality of life not only of people with TBI but also of their spouses, other family members, and caretakers

(Gordon, Hibbard, Brown, Flanagan, & Korves, 1999, p. 313). Persons with injury have reported salient issues affecting their quality of life after TBI, such as decreased participation in normal activities, loss of control over emotional and behavioral functioning, decreased autonomy and privileges, and a change in the sense of self (Bergland & Thomas, 1991).

Statement of Problem

To improve societal reintegration and quality of life of survivors of traumatic brain injury (TBI), better understanding of the contribution of their psychosocial adjustment process to this chronic disability is imperative. Due to its long-term sequelae, persons with TBI may suffer from impaired awareness, poorer life satisfaction, decreased emotional functioning, reduction or loss of interpersonal relationships, decreased productivity, independence and role functioning, and changes in their sense of self (Atchison et al., 2002; Curtiss, Klemz, & Vanderploeg, 2000; Pappadis, Sander, & Struchen, 2009; Sander et al., 2001; Schopp, Good, Barker, Mazurek, & Hathaway, 2006; Temkin et al., 2009; Yasuda, Wehman, Targett, Cifu, & West, 2001).

Several factors may influence role changes, such as cultural, spiritual, social support, and family dynamics (Levant & Richmond, 2007). Past TBI research efforts have identified that gender role conflict and loss of sense of self may exist during the psychosocial adjustment process after injury (Gutman, 2000; Gutman & Napier-Klemic, 1996; Myles, 2004). However, there is a lack of empirical evidence in existing literature to suggest that gender role conflict and change in sense of self exist in a diverse sample of persons with TBI. Moreover, past research has failed to investigate the existence of differences in gender role conflict and change of sense of self based on the gender and racial/ethnic identity of persons with TBI. In addition, it is

important to understand how an individual's coping style and their level of cognitive functioning may mediate the psychosocial adjustment process.

Purpose of the Study

The purpose of this study was to address these gaps in literature by examining gender and ethnic differences regarding gender role conflict and change in sense of self after TBI among an ethnically diverse sample of persons with TBI. The mediation effects of cognitive functioning and coping on psychosocial adjustment to TBI were also assessed. Furthermore, this study tested a model to assess the moderated-mediation effects of gender and ethnicity on psychosocial adjustment to TBI. This study utilized an equal-status, concurrent mixed method design; which includes both qualitative and quantitative designs, where both qualitative and quantitative designs are conducted at the same time, where both qualitative and quantitative methods have equal importance (Onwuegbuzie & Johnson, 2006). This study addressed the following aims:

- **Specific Aim 1:** To explore experiences of gender role conflict and changes to sense of self and its impact on the psychosocial adjustment process of a diverse sample of adults with TBI.
- **Specific Aim 2:** To examine the role of gender and ethnicity on both gender role conflict and sense of self of a diverse sample of adults with TBI.
- **Specific Aim 3:** To examine the influence of gender role conflict and sense of self on psychosocial adjustment to TBI through the mediating processes of cognitive functioning and coping styles of a diverse sample of adults with TBI.

- **Specific Aim 4:** To test the moderated-mediation effects of gender and ethnicity in the overall model of the impact of gender role conflict and sense of self on the psychosocial adjustment process, mediated by cognitive functioning and coping styles of a diverse sample of adults with TBI.

Research Questions and Hypotheses

1. What are the personal experiences of gender role conflict and changes of sense of self after traumatic brain injury?
2. Does the level of psychosocial adjustment and gender role conflict differ by gender role self concept?

Hypothesis 1: *There are significant differences on gender role conflict and psychosocial adjustment by gender role concept.*

3. Does the level of cognitive functioning of persons with TBI mediate the relationship between gender role conflict and sense of self?

Hypothesis 2: *The level of cognitive functioning will mediate the relationship between gender role conflict and sense of self.*

4. Do significant gender differences exist between males and females with TBI reporting of gender role conflict?

Hypothesis 3: *Significant differences of gender role conflict will be reported between males and females.*

5. Do significant ethnic differences exist between Blacks, Hispanics and Whites with TBI on gender role conflict?

Hypothesis 4: *Significant differences will exist between racial/ethnic groups on gender role conflict.*

6. Do significant gender differences exist between males and females with TBI on changes of sense of self?

Hypothesis 5: *Significant differences on changes of sense of self after TBI will be reported between males and females.*

7. Do significant ethnic differences exist between Blacks, Hispanics and Whites with TBI on changes of sense of self?

Hypothesis 6: *Significant differences on changes of sense of self after TBI will be reported between racial/ethnic groups.*

8. Does neurocognition (i.e. cognitive functioning and impaired awareness) and coping style mediate the effects of gender role conflict and sense of self on psychosocial adjustment after TBI?

Hypothesis 7: *Neurocognition and Coping style are significant mediators between gender role conflict and sense of self with psychosocial adjustment.*

9. Does gender and ethnicity moderate the mediation effects of neurocognition and coping on the association between gender role conflict, sense of self and psychosocial adjustment after TBI?

Hypothesis 8: *Gender and race/ethnicity will be significant moderators of psychosocial adjustment.*

Significance

Although limited research exists examining the post-TBI outcomes of ethnic minorities, a review of the literature revealed that Blacks and Latinos generally have lower education, socioeconomic and insurance status, along with poorer treatment, functional, psychosocial, community integration, life satisfaction, neuropsychological, neurobehavioral, and caregiver outcomes in comparison to whites with TBI (Gary et al., 2009). Greater efforts are needed to investigate the adjustment process of ethnic minorities and those from socio-economically challenged backgrounds.

Using a mixed-method approach, this study explored gender role conflict and changes in sense of self after traumatic brain injury (TBI) in an ethnically diverse sample. As suggested by the Gender Role Strain Paradigm, past research identified that gender role violation/strain is more severe for men than women (Levant, 1996). Although researchers posit that men have greater difficulty in resumption of gender-specific roles, which are different for women, women may also experience changes in pre-injury roles and activities. Furthermore, the gender discrepancy regarding gender role strain may be due to varying identity expression between men and women. Jordan et al. (1991) found that females express gender identity through their social relationships, whereas males express their identity through roles for economic or physical functions (as cited in Gutman, 2000). This study aimed to examine the applicability of the Gender Role Strain Paradigm to men and women with traumatic brain injury.

There have been methodological limitations in traumatic brain injury research, such as sample size, sample selection and approaches. Even practice guidelines have been swayed by research efforts employing methodological shortcomings by using either case studies or only qualitative interviewing using very small samples (Gutman, 2000; Gutman & Napier-Klemic,

1996; Myles, 2004). This study aimed to include a diverse sample of persons with TBI through the inclusion of women, ethnic minorities, immigrants, non-English speaking, and individuals with disparate socio-economic backgrounds. This study was the first of its kind in the TBI research field to use a mixed-methods design to assess the potential role of gender role conflict and alterations in sense of self during psychosocial adjustment post injury in an ethnically and socio-economically diverse sample of adults with TBI.

Definition of Terms

1. **Cognitive functioning** – refers to the process by which individuals are able to use mental abilities, such as memory, learn new information, read, language, and comprehension.
2. **Emotional symptoms** – symptoms associated with traumatic brain injury, such as anxiety and depression.
3. **Equal-status, concurrent mixed method design** – a research design that employs both quantitative and qualitative designs, where they both have equal importance and occur at the same point in time.
4. **Functional outcomes** – ability to perform activities of daily living, such as eating, dressing, bathing, and even quality of life.
5. **Gender Role Conflict** – experience of negative consequences as a result of stress caused by not being able to adhere to a standard gender role, caused by a traumatic event during the socialization process, and/or dysfunction caused by adhering to gender role.

6. **Gender Role Self concept** – gender identity, which may be feminine, masculine, androgynous, or undifferentiated.
7. **Gender Role strain** – stress caused by not being able to adhere to standard gender role, caused by a traumatic event during the socialization process, and/or dysfunction caused by adhering to gender role.
8. **Gender Role Strain Paradigm** – individuals are always violating gender roles and it may cause psychological consequences. Gender role violation is more severe for men than women and gender roles are imposed on children from others with whom they come in contact, such as parents, teachers, and peers (Levant, 1996).
9. **Impaired self-awareness** – when a person after injury is unaware of their own strengths and weaknesses after TBI.
10. **Mild traumatic brain injury** – based on the Glasgow Coma Scale (Teasdale & Jennett, 1974) to measure severity with a score of 13 thru 15, which means the injury was less severe than a moderate-to-severe injury.
11. **Moderate traumatic brain injury** – based on the Glasgow Coma Scale (Teasdale & Jennett, 1974) to measure severity of the traumatic brain injury with a score of 9 thru 12.
12. **Neurocognition** – consist of the processes of thinking, memory, and processing information, learning new things, and understanding the spoken, written, and non-verbal language.
13. **Neuropsychological assessment** – a battery of cognitive tests that may measure areas such as memory, processing, language, and executive functioning.

- 14. Paradigm of Disability model** – emphasize that not only injury-related impairments impede successful adaptation or reintegration but also the interaction of the injury-related impairments with the physical and social environment (Pledger, 2003).
- 15. Psychosocial adjustment** – is the ability to adjust to changes after TBI in areas such as, emotional functioning, social functioning, and disability functioning.
- 16. Rehabilitation services** – services to help increase the independence of an individual after injury or illness, which may be provided by rehabilitation professionals like social workers, neuropsychologists, speech language pathologists, physical therapists, and occupational therapists.
- 17. Sequelae** – symptom or consequence of an injury.
- 18. Self-discrepancy theory** – proposed by Higgins, Klein, Strauman (1987), the emotional state of an individual is related to the discrepancy of their beliefs about the self.
- 19. Sense of self** – is identity of self or how one views self.
- 20. Severe traumatic brain injury** – based on the Glasgow Coma Scale (Teasdale & Jennett, 1974) to measure severity with a score of 3 thru 8, is the most severe type of traumatic brain injury.
- 21. Social comparison theory** – a theory regarding how individuals evaluate themselves by comparing themselves to others (Festinger, 1954).
- 22. Traumatic Brain Injury** – is caused when external force to the head causes brain dysfunction as a result of bleeding, swelling, or fractures.

CHAPTER 2

LITERATURE REVIEW

GENDER ROLE CONFLICT

Gender Role Strain Paradigm was first coined by Joseph Pleck (1981, 1995), who became the leading researcher regarding social constructionism and masculinity, where the idea was to understand the psychology of men. It initially was called the gender role identity paradigm, which is based on stereotyped gender roles. People were assumed to have a need for gender role identity and the personality develops from its creation. It was once believed that men who have a difficult time with identifying with a masculine gender role identity resulted in them becoming homosexuals, have negative attitudes towards women, and have defensive hypermasculinity (Levant, 1996). However, gender role strain paradigm acknowledged that individuals are always violating gender roles, which in turn may cause psychological consequences. Gender role violation is believed to be more severe for men than women (Levant, 1996). It is during socialization as children when gender roles are imposed on them by others with whom they come in contact, such as parents, teachers, and peers (Levant, 1996).

Societal role expectations are placed on men to be the provider, worker, husband/partner, and/or father. Nonetheless, females are expected to be either a worker, wife/partner, and/or mother. Family roles and work expectations are difficult to analyze, especially when considering individuals who not only have family obligations but are also working. Family role and work expectations often collide causing inter-role conflict, which

results in physical strain (Cooke & Rousseau, 1984). Role expectations are “internalized beliefs and attitudes about (a) the personal relevance of a role, (b) the standards for performance of the role, and (c) the manner in which personal resources (i.e., time, money, and energy) are to be committed to performance of the role” (Amatea, Cross, Clark, & Bobby, 1986, p. 831).

Four tenets of gender role conflict exist: (1) Success, power, and competition; (2) restricted emotionality; (3) restricted affection between men; and (4) conflict between work and family (O’Neil, Helms, Gable, David, & Wrightsman, 1986). Men reported greater restricted emotionality, restricted affection (mainly with men), and greater appropriate and inappropriate success in comparison to females (Zamarripa, Wampold, & Gregory, 2003). Although no gender differences were found based on conflict between work and family, conflict between work and family is a significant predictor of anxiety and depression for both males and females (Zamarripa et al., 2003). Inappropriate success predicted depression only among females (Zamarripa et al., 2003).

Gender Role Conflict & Traumatic Brain Injury

Gender role strain may be experienced by individuals with traumatic brain injury because they are often unable to participate in the roles that they had prior to injury. For men with TBI, if they ascribed to a pre-injury masculine gender social role to express their gender identity, they often report gender role strain after injury where they are unable to participate in those pre-injury roles and activities (Gutman, 2000).

Traumatic brain injury may alter different valued areas of one’s role functioning, such as their income (Brooks, McKinlay, Symington, Beattie, & Campsie, 1987; Yasuda et al., 2001), sexual functioning (Kreutzer, Dahllof, Gudjonsson, Sullivan, & Siosteen, 1998), intra-family

roles (Curtiss et al., 2000) and independence in daily activities (Schopp et al., 2006).

Employment changes frequently occur and unemployment rates are high after injury (Kreutzer, et al., 2003). Family structure may change, such as the wives or caregivers take on more roles, which may result in greater caregiver burden. Families that adhere to traditional role expectations may have difficulty with this familial role change. Household roles may change, thus impacting one's parenting and also causing marital distress. In addition, sexuality changes, that cause persons with injury to reevaluate their roles, may occur causing the individual to feel a change in their sense of self (Pridal, 2001).

Qualitative research has explored the disruption of gender identity and gender role as a result of traumatic brain injury. One particular study using women and men participants found that men have a harder time with resuming roles, which tended to be gender-specific (Gutman & Napier-Klemic, 1996). In contrast, women relied more on cross-gender activities. Men are often seen as the provider and their status changes due to unemployment. Females may lose their status as provider as well or lose their role as caretaker resulting in a need for assistance from others. These changes often result in the questioning of their suitability and difficulty in seeking or asking for help.

Gutman (2000) described several reasons why there may be a difference between males and females with traumatic brain injury regarding re-establishing gender roles. First, females in western society are socialized to establish and rely on their social networks for support, whether emotional or material. Men in western society are not socialized to seek help from others when in crisis and usually become socially isolated. Another reason may be the difference of how males and females use social roles and activities to express their gender identity.

Contextual influences of gender role conflict

Several factors may influence role changes, such as cultural, spiritual, social support, and family dynamics. Blacks and Hispanic-Americans tend to endorse more traditional masculinity ideology than European Americans (Levant & Richmond, 2007). In addition, cultural factors such as geographic residence (e.g. Northern vs. Southern U.S.) and nationality influence gender role beliefs. Persons with traditional masculinity ideology report having a fear of intimacy, decreased relationship satisfaction, and reduced openness to communication; in addition, traditional masculinity ideology significantly influences a father's role in childrearing and increased relationship violence among persons with head injury (Levant & Richmond, 2007). After sustaining a traumatic brain injury, persons with injury may question their suitability for the role, have difficulty asking for help, have increased psychological distress, and a loss of sense of self. There is a gap in literature on gender role discrepancy-strain, where the old-self and ideal self are investigated, according to Levant and Richmond (2007).

SENSE OF SELF AFTER TBI

Loss of sense of self is a common experience for persons with traumatic brain injury. It occurs when the person with injury becomes consciously aware that they are not the same person as they were before their injury (Myles, 2004). There are feelings of differentness or estrangement, which often leads to a total disconnect from the past identity before injury. Persons with TBI often report that they feel less competent and reliable in their pre-injury roles, which cause them to feel as if they are a different person from before (Nochi, 1998a). Secondly, loss involves the person with injury making negative self-evaluations about the changes in post injury abilities (Myles, 2004).

Loss of sense of self has been shown to be related to having emotional distress, such as anger, anxiety, depression and forms of grief (Myles, 2004). Losing one's independence and abilities after injury exacerbates the emotional and psychological distress after injury. For example, after losing their driver's license due to impairment after injury, the individual may become suicidal (Persinger, 1993). Lastly, loss of sense of self may involve the denial of the changes in functioning that are common after injury, which may be due to a protective response to help them cope with the consequences of injury. Denial and impaired awareness are not synonymous and denial implies at least partial awareness of problems. Aforementioned, impaired awareness is common after injury due to the direct lesion or injury to the brain.

Nochi (2000) conducted qualitative interviews to reconstruct the self-narratives of ten persons with traumatic brain injury. Based on narrative analysis, five different themes regarding self emerged. First, there is the "self that is better than others." This is a form of social comparison, where the individual compares themselves to others. When a person has developed this form of self, they often feel that things could be worse. They see themselves as someone who could have been a lot worse off when they compare to other individuals with injury, usually those who had more severe injuries. The second self is regarding the "grown self," when it is believed that the brain injury has contributed to positive aspects of their lives (e.g. stopped using drugs or alcohol). During the realization of the grown self, there is a belief that the injury helped give them a new life, they gained a new insight to self and others, and a genuine appreciation for life.

A third sense of self after injury is the "recovering self." The recovering self is when they are moving towards their injury selves. Persons with TBI describe themselves as being close to

100% in their recovery. This optimism of recovery process is associated with this view type. The fourth self is the “self living here and now,” where the survivor says that they are “normal” and refuse others’ norms. Although not mentioned by Nochi (2000), this may also be a sign of impaired awareness. Lastly, the “protesting self” deals with the belief that difficulties arise from the social environment and not from the consequences of TBI. Persons with injury have reported that others positively or negatively label them after injury, which may contradict their own self-identity (Nochi, 1998a,b). The recovering self, self living here and now, and the self better than others are variations of self that emerge in spite of changes caused by the traumatic brain injury (Nochi, 2000). While, the grown self and protesting self are versions of self that emerge because of the consequences of injury.

When a person feels that they are not the same person, this is characteristic of a crisis of conceptualized self (Myles, 2004). As a person begins to develop a loss of sense of self, there is a discrepancy between how they perceive their pre-injury identity and their perception of their post injury functioning. This discrepancy leads to emotional distress when they deal with the often painful realization that their identity and/or abilities are changing. The denial of these changes can be detrimental during the adjustment process because it may increase the frequency and intensity of the emotional distress (Myles, 2004). In addition, it may cause the individual to constrict their lives so that they have limited encounters of the discrepancy, which may result in social avoidance or isolation from others. However, it must be noted that this may only be applied to individuals who have gained awareness.

There are several concerns affecting persons with injury which affect their ability to find meaning in their existence, such as self-awareness deficits, emotional changes, loss of

independence and control, guilt and anger, and substance abuse (Patterson & Staton, 2009). Persons with injury who lack self-awareness will have difficulty gaining insight into the life experience and make meaning. All the changes associated with the brain injury often cause a shaken self and sense of meaning, which can cause depression, anxiety or denial. Maladaptive thinking often causes feelings of anxious and fear of the unknown (Mateer, Sira, & O'Connell, 2005). Decreased self-concept, or view of self, and depression have been found to be associated with decreased subjective quality of life among persons with acquired brain injury (Vickery, Gontkovksy, & Caroselli, 2005).

PSYCHOSOCIAL ADJUSTMENT TO TBI

Several models and theories have been developed to better understand the process of how an individual adjusts to the consequences of a chronic illness or disability. Successful adjustment occurs when the person has reached a psychosocial equilibrium or reintegration, they have awareness of their remaining assets and existing functional limitations, and they have a positive self-esteem, self-concept, and sense of personal mastery (Livneh & Antonak, 1997). In addition, it is when an individual is successfully able to negotiate his or her environment and also be able to actively participate in different areas, such as social, vocational, and recreational activities.

One of the most influential models that was developed based on somatopsychology is the model of adjustment to chronic illnesses and disability (CID) by Wright (1960, 1983). Wright believed that the disability or illness is a key component of the self-concept of persons with disabilities. It is based on a value system, where individuals who recognize their assets are

deemed to be coping with CID but those who are striving to be normal and deny the CID are deemed to be succumbing. There are four major changes to a person's value system: (1) enlargement of scope of values, (2) subordination of the physique, (3) containment of disability effects, and (4) transformation for comparative to asset values.

The second category of adjustment models are stage models, where it is believed that an individual cannot proceed to the next stage until successfully completing the previous and when all stages are mastered is when one has fully adjusted. A prominent researcher in the field of CID, Livneh (1986), categorized the models into five categories: (1) initial reaction, (2) defense mobilization, (3) initial realization, (4) retaliation, and (5) reintegration. The initial reaction of disability is when the person with disability becomes shocked and anxious because it is oftentimes a new experience and they are learning about how severe their disability is. Defense mobilization deals with bargaining with a higher power (e.g. God or medical experts) and denial deals with the expectation of recovery without bargaining. This is often the stage when a person acts as if they have no consequences of injury and their functioning has not been impaired (Wright, 1960).

Initial realization is usually when the consequences of injury are being processed. As one would expect, this may be an emotional process for the person with injury. This stage is often accompanied with depression, self-blame, self-hate, and also social isolation or withdrawal (Livneh, 1986). Retaliation includes an emotional process; however, it is often in the form of externalized anger or aggression. Passive-aggression may also be expressed through manipulation or uncooperativeness. The final stage is reintegration, which is categorized by acknowledgement, acceptance, and final adjustment. These three make up the cognitive,

affective, and behavioral components of adjustment. It is during this final stage when individuals are setting new goals and developing new social roles.

The final category of models consists of the ecological models, which deals with adaptation to chronic illnesses and disability. The four variables that are included in ecological models are variables related to the illness or disability, socio-demographic characteristics of the individual, personality and behavioral characteristics of the individual, and the external physical and social environment (Livneh & Antonek, 1997).

The adjustment process involves early reactions (e.g. shock, denial), intermediate reactions (e.g. depression, anger, hostility), and later reactions (e.g. acknowledgement, acceptance, adjustment). This process is very similar to the growth model process. In recent years, there has been research emphasizing the relationship of quality of life and adjustment. The uniqueness of ecological models is that they place greater emphasis on the external physical and social environment in comparison to symptomatology and growth models.

Loss of sense of self has been shown to be related to emotional distress, such as anger, anxiety, depression and forms of grief (Myles, 2004). A small sample of persons with TBI reported significant changes to self, which was negatively associated with awareness and positively associated with depression (Carroll & Coetzer, 2011). Better understanding of how cognitive functioning may mediate the relationship between sense of self and psychosocial adjustment using a large, diverse sample of persons with TBI is needed.

The role and significance of gender in the existing traumatic brain injury (TBI) outcomes literature is scant, often with equivocal results. One metaanalysis revealed that women have poorer outcomes than men (Farace & Alves, 2000). Some studies report greater cognitive

impairments and emotional distress in females in comparison to men (Liossi & Wood, 2009; Ratcliff et al., 2007), whereas another study reported lower scores in men with TBI in areas of memory, greater decline in cognitive flexibility, and greater levels of emotional distress after injury (Schopp, Shigaki, Johnstone, & Kirkpatrick, 2001). It is important to identify how cognitive functioning, changes in self, and role changes impact psychosocial adjustment after TBI.

COPING AFTER TBI

It is important to assess how coping style may affect the emotional functioning and adjustment process for persons with TBI. Persons with injury are stressed from various circumstances that may affect their emotional functioning: “threats to life and physical well-being, to body integrity and comfort as a result of the illness or disability itself., to independence, privacy, autonomy and control, to self-concept and fulfillment of customary roles, to life goals and future plans, to relationships with others, to the ability to remain in familiar surroundings, and threats to economic well-being.” (Falvo, 2005, p.3-4). Persons with moderate-to severe TBI have reported more use of avoidant than planful coping after injury in comparison to a control group (Krpan, Stuss, & Anderson, 2011). Disclosure-avoidance coping style has been positively associated with several types of stigma and depression (Steward et al., 2008). In addition, poorer outcomes have been associated with individuals who utilize either more passive (Lyons et al., 1995) or disengaged coping (Livneh & Martz, 2007). Further research is warranted in how the coping styles used for persons after TBI contribute to their psychosocial adjustment to TBI.

PRELIMINARY STUDY

A qualitative study was previously conducted to investigate the impact of traumatic brain injury (TBI) on quality of life and self-concept from the perspectives of in an ethnically diverse sample of TBI survivors (Pappadis & Sander, 2010). This was the first study to qualitatively analyze the perceptions of persons with TBI who were recruited consecutively through admission in a county hospital, using an ethnically and socio-economically diverse sample. Semi-structured interviews were conducted with 167 persons with traumatic brain injury (58 Blacks, 57 Hispanics, and 52 Whites).

Positive and negative influences were reported by persons with TBI. Major themes of positive influences were: a new life perspective or appreciation for life, *improved self-concept*, increased faith, improved relationships, changed past ways and able to find positives out of a negative experience. With regards to self-concept, several positive changes that occurred after injury encompassed improved self-control and positive personality/mood changes. In addition, improved relationships were also reported with improvements in benevolence and appreciation of others. Major themes of negative influences were: TBI symptoms, worry over *social roles and abilities*, stigma, loss of independence, and decreased social integration. Survivors who saw differences in how they view themselves expressed a *loss of identity*, self-blame/pity, felt incapacitated and *engaged in social comparisons* between pre-injury and post-injury self. This research helped support the basis for further research in social roles and identity loss and its role in the psychosocial adjustment process. This research guided this study in further assessing gender role conflict and loss of identity after TBI.

Theoretical Framework

There are several theories to help guide the understanding of the impact of neurocognition, gender role conflict, and self-identity on psychosocial adjustment of persons with TBI. Several theories have been examined and its relationship to the proposed conceptual framework was identified. The theories to be discussed are: Neurobehavioral model of TBI deficits emphasizing the role of impaired awareness; Social Comparison Theory; Gender Role Strain Paradigm; and Self-discrepancy Theory.

Neurobehavioral Model of TBI Deficits: Impaired Awareness

Neurobehavioral aspects of understanding the deficits of TBI are important when studying traumatic brain injury. However, it is beyond the scope of this research. Traumatic brain injury research has placed greater emphasis on cognitive deficits resulting in impaired awareness. Others believe that ego defense-mechanisms of denial, repression, minimizing, and rationalization may contribute to impaired awareness (Hinkebein & Stucky, 2007). Impaired awareness has been associated with functional outcomes and caregiver distress (Prigatano, 2005; Sherer et al., 1998). According to Prigatano, poor insight regarding deficits after injury may result in unrealistic expectations experienced.

It is important to understand the consciousness and unconsciousness usage of non-adaptive coping strategies. Due to impaired awareness, individuals may lack awareness into the detrimental effects of using maladaptive coping strategies, such as denial or repression. Further research is warranted to investigate interventions to help address the issues of impaired awareness, unrealistic expectations, difficulty formulating achievable goals, and the identification of barriers to resuming pre-injury roles and activities.

Better performance on executive functioning measures was related to use of problem focused coping in a small sample of persons with TBI at one year post injury (Krpan, Levine, Stuss, & Dawson, 2007). Krpan et al. also reported, in contrast, that emotion focused coping was related to poorer executive functioning performance.

Gender and racial differences have been identified in studies on outcomes after TBI. Using the Wisconsin Card Sort Test, a recognized measure of executive functioning, women outperformed males on two subscales (i.e. Categories Achieved, Perseverative Responses) in a large sample of persons with moderate-to-severe TBI (Niemeier, Marwitz, Leshner, Walker, & Bushnik, 2007). In addition, Neimeier and colleagues (2007) identified minority background as a significant predictor in predicting a score in the impaired range, which must be interpreted with caution. Confounding variables, such as education, cause of injury, and pre-injury productivity, should be considered in evaluating post-injury outcomes, and racial and ethnic differences. Racial differences have been identified with some measures of executive functioning (Proctor & Zhang, 2008), which may be due to the lack of ecological validity of executive functioning measures that fail to account for language, cultural, and acculturation differences.

Social Comparison Theory

Social Comparison Theory posits that individuals usually compare themselves to others as a way to assess their own capabilities or status (Festinger, 1954). Social comparison may be conceptualized as another form of coping with illness or disability. This theory has been underutilized in traumatic brain injury research. Arenth and colleagues (2006) is the only study to date that has assessed the use of social comparison theory during the adjustment process of TBI. During the first year after recovery, persons with TBI increase their use of social

comparison. Social comparison may be expressed through either upward or downward comparison.

As mentioned previously, upward comparison is when an individual compares him or herself to others who are doing better in the recovery process, whereas downward comparison may result in the individual comparing themselves to individuals who are worse off. Although it is thought that downward comparison will result in a positive effect, such as “at least I’m not in a coma.” It may also have negative effect, such as “Why did Billy die instead of me? He had so much going for him.” Similar scenarios may be seen when looking at upward comparison. Interpersonal factors, such as depression, low self-esteem and low perceived control may affect upward or downward social comparison (Buunk, Collins, Taylor, VanYperen, & Dakof, 1990).

A potential barrier to effectively using social comparison during the recovery process is the impact of impaired awareness. Impaired awareness, as previously mentioned, may affect individuals after sustaining a TBI. Impaired self-awareness may cause an individual to have difficulty with making judgments about their process of recovery and how they cope with their injury or illness. The use of social comparison, which can be a type of coping mechanism, by individuals with TBI may stem from their own self-perception.

Gender Role Strain Theory

The Gender Role Strain paradigm, which was developed from a social constructionist perspective, states that both males and females experience conflict or strain as a result of socialization of socially constructed gender roles (Pleck, 1981). Key tenets of the paradigm is that negative social and psychological consequences may occur as a result of violation of the gender role, some gender-role characteristics are psychologically dysfunctional, and both sexes

experience strain due to gender roles (Oneil et al, 1986). The theory or paradigm suggests that individuals, who try to live up to the sex role and are unable to do so, will experience negative effects. In addition, the theory acknowledges that: “(a) contemporary gender roles are contradictory and inconsistent; (b) the proportion of persons who violate gender roles is high; (c) violation of gender roles leads to condemnation and negative psychological consequences; (d) actual or imagined violation of gender roles leads people to over-conform to them; and (e) certain prescribed gender role traits (such as male aggression) are often dysfunctional” (Levant & Philpot, 2002, pg. 304).

The gender role strain paradigm may be used to understand the socialization process of adults with TBI. After TBI, individuals often have difficulty resuming previous roles. Family members may also place unrealistic goals on the person with injury. These changes after injury may result in gender role conflict, where the person with injury is unable to fulfill their socially constructed gender role. The gender role conflict may in turn result in psychological distress for the person with injury. Masculine role adherence is related to certain aspects of recovery, such as life satisfaction and functional abilities after TBI (Schopp et al., 2006).

The theory of gender role conflict stems from investigating the psychology of men. Limited research has investigated women and gender role strain; however, Levant and Philpot (2002) have proposed a framework for understanding gender role strain in women. One type of strain is the *role discrepancy strain*, where women do not feel that she fits the characteristics of an “ideal women.” This type of strain may emphasize beauty, marriage and motherhood for all women, and superwomen (handling multiple roles as beauty, wife, mother, homemaker, and career woman). Successful socialization results in *gender role dysfunction strain*, where the

achieved socialization results in negative outcomes. Some negative outcomes may be: depression, eating disorders, histrionic personality disorder, dependency, self-limiting behavior, external locus of control, and role overload (Levant & Philpot, 2002). The final strain may be *gender role trauma strain*, where the woman suffers trauma during the socialization process. Applying the gender role strain paradigm to both men and women who suffered a traumatic brain injury may help understand how the socialization process can be affected after an injury and what the consequences of the injury are.

Self-discrepancy Theory

Higgins et al. (1987) developed the self-discrepancy theory in order to distinguish between the different types of discomfort people experience due to discrepant beliefs about self and describe the emotional states experienced, and to consider the role of how available and accessible are the discrepancies. The theory has 2 different cognitive dimensions regarding self representations: domains of the self and the standpoints on the self. The self-discrepancy theory postulates that there are 3 different forms of self: *actual*, *ideal*, and *ought*. Actual self represents what you or others believe are your attributes. Ideal self represents the hopes, aspirations, or wishes for self by yourself or another person. Lastly, ought self represents attributes that you or someone should or ought to possess, such as one's sense of duty, responsibility or obligation. In addition, standpoints are important, whether the viewpoint comes from you or others. Individuals may have many different standpoints (e.g. for each family member).

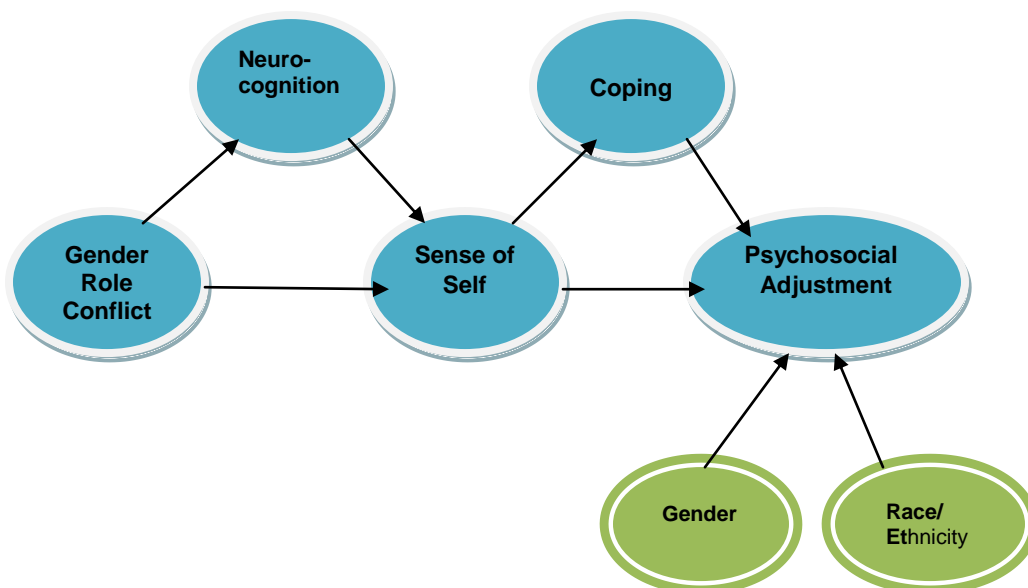
Several discrepancies may occur: (a) actual- versus ideal-self, which results in feelings of dejection and may be vulnerable to disappointment and dissatisfaction; (b) actual-self versus ideal by others, which results in feelings of dejection, but also shame, embarrassment or feeling

downcast; (c) actual-self versus ought-other, which results in agitation-related emotions and may be vulnerable to fear and feeling threatened and result in feelings of resentment; (d) actual by others versus ought by others, which results in agitation related emotions as well, but feelings of guilt, self-contempt, and uneasiness and may be associated with feelings of worthlessness (Higgins, 1987).

For persons with TBI, strong relationships were found between self-discrepancy and affective disorders, anxiety and depression (Cantor et al., 2005). Based on the self-discrepancy theory, discrepancies between the actual self and the ideal self results in depressive symptoms, while discrepancies between the actual self and the ought self results in anxiety. More research is needed in testing the self-discrepancy theory among persons with TBI; however, this theory shows promise in understanding how self-discrepancies may have negative psychological outcomes and affect the psychosocial adjustment process for persons with TBI.

Conceptual Framework

Figure 1. Conceptual Model of the Impact of Gender Role Conflict and Sense of Self on Psychosocial Adjustment after Traumatic Brain Injury (TBI)



Using this conceptual framework, the mediation effects of neurocognition (i.e. cognitive functioning and impaired awareness) and coping on psychosocial adjustment for persons with TBI will be examined. In addition, the moderating effects of gender and race/ethnicity on psychosocial adjustment will also be examined. It is proposed that neurocognition directly affects self-identity, specifically affecting beliefs regarding gender roles and sense of self. An individual's sense of self may be affected how they adjust to TBI based on their preferred coping style. Differences based on the gender and/or race/ethnicity of a person with TBI may influence how these individual and contextual factors influence psychosocial adjustment after TBI.

CHAPTER 3 METHODOLOGY

Design

This study was an *equal-status, concurrent mixed-method design*. This design was chosen to examine the personal experiences of persons after TBI, while addressing gender role conflict and changes to sense of self. In addition, this design helps facilitate the investigation of the moderation effects of ethnic and gender differences to identify moderated mediation to psychosocial adjustment to TBI. The *qualitative phase* of the study was conducted using semi-structured interviewing, while the *quantitative phase* consisted of assessment and self-report measures. One phase did not hold a greater significance than the other in this study.

Concurrent mixed-method designs are to address each of the following conditions:

- a) “both the quantitative and qualitative data are collected separately at approximately the same point in time,
- b) Neither the quantitative nor qualitative data analysis builds on the other during the data analysis stage, and
- c) The results from each type of analysis are not consolidated at the data interpretation stage, until *both* sets of data have been collected and analyzed separately, and
- d) After collection and interpretation of data from the quantitative and qualitative components, a meta-inference is drawn which integrates the inferences made from the separate quantitative and qualitative data and findings” (Onwuegbuzie & Johnson, 2006, p.53).

Benefits of the mixed-method design

There are several benefits to using a mixed-method design, such as *triangulation* (find convergent validity among the data obtained), *complementation* (complement findings from both methods and use these findings to make a more meaningful interpretation of the results) and *contradictions* (find new ways of looking at the constructs under investigation). With benefits, there are some limitations to using this design: (1) time-consuming, if study does not have a clear aim or focus, (2) more costly, and (3) analyzing, interpreting and integrating results require that the researcher be highly trained in methodology and analysis.

Research Setting and Screening:

Persons with traumatic brain injury were identified and screened by a research assistant utilizing the Brain Injury Research Center's database, which includes individuals who have previously participated in research projects by the center and/or have signed agreement forms to be contacted regarding future research projects. The study's research assistant, who is also an employed research assistant at the Brain Injury Research Center, has nearly five years of experience as a research assistant for the center. Authorization to access this database was granted by the Brain Injury Research Center and Memorial Hermann. This password-protected and restricted-access database contains over 1000 persons with traumatic brain injury. Majority of the persons included in the database has received inpatient rehabilitative services.

Initially, it was planned to also recruit participants from the Neurosurgery Clinic at Ben Taub General Hospital and Memorial Hermann Hospital. However, due to the large number of available potential subjects in the database, the research assistant was able to focus their recruitment efforts utilizing only the database. This allowed for easier access to recruit potential

subjects, in addition to the fact that the potential subjects had a prior research relationship with the research assistant. She followed all screening and recruitment procedures outline in the research protocol (See Appendix C).

Participants

Eligibility of participation was based on whether the individual with TBI received care at either of the following acute or rehabilitation hospital: Memorial Hermann, Ben Taub, TIRR Memorial Hermann or Quentin Mease Community Hospital. In addition, they must have a documented traumatic brain injury in their medical record; have documented injury severities (assessed by either the emergency Glasgow Coma Scale (ER GCS) and/or Best Day one 24 hr GCS score) (Teasdale & Jennett, 1974); must be at least 18 years old at the time of consenting; fluent in either English or Spanish; live within 100 miles of the research center, if they have no means of transportation to research location to complete assessment; at least 3 months post injury at the time of assessment (which provides greater opportunity to experience socialization after injury) and living in a non-institutional setting for at least 3 months at the time of assessment; and be oriented and out of post-confusional state after injury, which was assessed by the Orientation Log (score > 26).

Individuals were excluded if they are younger than 18 years old (due to developmental issues affecting responses); reside in an institution (e.g., nursing home, prison); are homeless; reside greater than 100 miles from research center, if no available means of transportation; have a pre-existing severe psychiatric disorder which may affect the psychosocial adjustment process (e.g., schizophrenia, bipolar, schizoaffective disorder, etc); have a pre-existing or post-injury history of other central nervous system dysfunction (e.g. brain tumor, stroke, dementia,

Parkinson's); have a severe pre-existing developmental disability (e.g. mental retardation, autism); have severe communication difficulties (e.g. receptive or expressive aphasia – global aphasia, Broca's aphasia, etc.); not fully oriented or out of post-confusional state at least 1 year post injury; are not fluent in either English or Spanish; and still receiving comprehensive medical or rehabilitation services one year post injury.

Individuals who were currently receiving psychological therapy or interventions to improve their outcomes will not be excluded (e.g. memory, cognitive behavioral therapy, vocational rehabilitation, social communication therapy, depression). Documentation of their participation in treatment was noted and an analysis was conducted to ensure that there are no contamination effects. Analysis of potential contamination effects are described in the Results section.

Response rates were enhanced by allowing the interviewer to record the answers of the participants in order to reduce missing data due to cognitive deficits. In addition, the assessment was only done at a time that was convenient for the participant. Only one participant chose not to answer a particular question due to its nature (e.g. homosexuality). Every effort was explained to the participant that their responses and their identification was confidential and would not be shared with the family or any individual not involved in this study.

Qualitative Phase – Sampling:

Quota sampling was employed for the qualitative phase of this study in order to produce mutually exclusive subpopulations (Bernard & Ryan, 2010). As shown in Table 1, a non-probabilistic sampling method was proposed using equal numbers of men (n=45) and

women (n=45) based on two categories: racial make-up (Black, Hispanic, White) and stage of recovery (3-1 yr, 2-5 yrs and more than 5 years post injury). Initially, a total of 90 participants were proposed to participate in the qualitative interviewing phase of this study. However, based on previous research, the qualitative research experience and my personal experience with conducting interviews with persons with TBI, a reduced number of participants still provides insight regarding the experiences of gender role conflict and identity changes after injury. Therefore, recruitment of research participants continued, while trying to obtain at least 3 participants for each of the categories. Transcripts from a total of 48 persons with injury were analyzed for the qualitative phase of this study (see Table 2).

Table 1. Initial Quota Sampling Grid with Three Binary Independent Variables

| Variables (n=90) | | | | | | | | | | | | | | | | | |
|------------------|---|---|-----------|---|---|--------|---|---|--------------------|---|---|-----------|---|---|--------|---|---|
| <i>Males (♂)</i> | | | | | | | | | <i>Females (♀)</i> | | | | | | | | |
| 3 m – 1 yr* | | | 1 – 2 yrs | | | ≥3 yrs | | | 3 mos. – 1 yr | | | 1 – 2 yrs | | | ≥3 yrs | | |
| B | H | W | B | H | W | B | H | W | B | H | W | B | H | W | B | H | W |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |

Note: * signifies time post injury; B = Black, H = Hispanic/Latino, W = White

Table 2. Final Quota Sampling Grid with Three Binary Independent Variables

| Variables (n=48) | | | | | | | | | | | | | | | | | |
|------------------|---|---|-----------|---|---|--------|---|---|--------------------|---|---|-----------|---|---|--------|---|---|
| <i>Males (♂)</i> | | | | | | | | | <i>Females (♀)</i> | | | | | | | | |
| 3 m – 1 yr* | | | 1 – 2 yrs | | | ≥3 yrs | | | 3 mos. – 1 yr | | | 1 – 2 yrs | | | ≥3 yrs | | |
| B | H | W | B | H | W | B | H | W | B | H | W | B | H | W | B | H | W |
| 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 4 | 2 | 1 | 2 | 3 | 3 | 3 | 3 |

Note: * signifies time post injury; B = Black, H = Hispanic/Latino, W = White

Power Analysis

Based on the initial power analysis conducted using GPower 3.1.2 prior to the start of this study, the following sample sizes were selected. For *hypothesis 1*, with a computed effect size of .15 and achieving at least 80% power ($p = 0.83$), 44 participants are needed to conduct a MANOVA with 4 groups and 4 outcome variables. Using a medium effect size of 0.15 based on Cohen (1988) and achieving 80% power, a total of 68 participants are needed to address *hypothesis 2* using a linear multiple regression analysis of 2 predictor variables. One-hundred two participants are needed to identify significant differences between males ($n = 51$) and females ($n=51$) based on means, using a medium effect size of .50, 80% power and based on a 1 to 1 gender ratio to address *hypothesis 3 and 5* using a T-test. *Hypothesis 4, and 6* will be addressed using an ANCOVA to find racial/ethnic differences based on the outcome variables. A total of 99 participants, or 33 participants per racial group, in order to determine significant differences with a medium effect size ($f = .25$) based on Cohen's criteria (1977) and 80% power. For *hypotheses 7*, using a Bonferroni adjustment on .05 alpha for 5 different comparisons (.01 alpha coefficient) and .20 effect size using 3 predictors to determine interaction effects, 84 participants are needed. For *hypotheses 8*, using SEM with 10 indicators and at least 10 subjects per indicator, a minimum of 100 subjects are recommended. Due to time and funding constraints, the recommended sample sizes were not achieved. However, for majority of the hypotheses sample size requirements were achieved due to the relatively large effect sizes exhibited by the data.

PROCEDURES

Individuals who meet the eligibility requirements were contacted via telephone by a research assistant or the investigator to inform them regarding their possible participation in the study. If individuals agreed to participate, verbal assent was obtained. Prior to informed consent, participants must be oriented and cognitively able to participate. Orientation was then assessed over the telephone using the Orientation Log and a score of 26 or greater deemed the individual as oriented and cognitively able to participate.

Informed written consent, after discussing the purpose, procedures, risks/benefits, costs/payments, and subject rights, was then scheduled. The location of informed written consent and assessment was decided by participants based on their availability and resources (i.e. transportation). They had two options of where to participate, which occurred at: (a) the Brain Injury Research Center or (b) the participant's home.

Assessment

After consent and obtaining demographic information (See Appendix D), the qualitative interview was conducted (if applicable). The semi-structured interview was recorded using a digital recorder. Permission was obtained to record the interview for data collection and to use the information in a publication or presentation. The interview took anywhere from 30 minutes to one hour to complete based on the brevity or lengthiness of the participants' responses. After completion of the qualitative interview (if applicable), the brief neuropsychological assessment was conducted to assess verbal memory and executive functioning. The brief neuropsychological assessment took roughly 10-20 minutes for completion, depending on participant's level of cognitive impairment.

Following the brief neuropsychological assessment, self-report measures were completed based on gender role conflict, gender roles, changes in sense of self, coping styles, impaired awareness and psychosocial adjustment. It took an additional 20-40 minutes to complete. All responses were written by the investigator. Therefore, the overall estimated time of completion of the study was about 1 - 2 hours.

Protection of Human Subjects

The study received approval from the following institutional review boards: University of Houston, Committee for the Protection of Human Subjects; IRB of Baylor College of Medicine; Harris County Hospital District; and institutional review board of Memorial Hermann Hospital System (See Appendix A). Informed written consent was obtained for all participants, which included discussion of the study's purpose, detailed procedures, risks and benefits of participation, costs and/or payments, and discussion of subject rights (See Appendix B). Each participant was assigned a number and this number was written on all forms instead of participant's name.

A password-protected database on a secure network that includes a folder that is also on the secure network was utilized. All qualitative interviews and forms were kept in a secured file cabinet that was only accessible by the investigator.

There was a minimal risk anticipated with this study; however, there was a possibility that participants may become tired or irritable during the assessment. Every attempt was made to conduct the interview and assessment at a time that was convenient for the participant. If breaks were needed, they were granted. In addition, if a participant experienced emotional

distress during the assessment, they will be referred to speak with a research therapist or be referred for counseling and/or other mental health services.

INSTRUMENTS (See Appendix D)

Cognitive Functioning

Orientation Log (O-LOG) is a 10-item assessment to measure orientation to time, place, and circumstances (Novak, 2000). It has been frequently utilized with persons with TBI. The following items are assessed: city, kind of place, name of hospital or location, current month, current date, current year, current day of the week, current time, etiology/event of injury and the pathology/deficits caused by injury. Each item is scored from 0 to 3, where a correct spontaneous response is a 3 and an incorrect response is a 0. A score of 2 is given if after an incorrect response, the participant is able to spontaneously provide the correct response after a logical cue is given. A score of 1 is given after a correct response is provided only after using a multi-choice format (last option before receiving a zero). Inter-rater reliability on the total O-Log score has been .993, while individual items have ranged from .851-1.0 (Jackson, Novack, & Dowler, 1998). The O-Log has concurrent validity with the GOAT (another measurement of orientation), with a reliability coefficient of .901. Past research suggests that The O-Log is a better predictor of rehabilitation outcomes (Fray, Rojas, Anderson, & Arciniegas, 2007). In this study, this measurement will be used to determine if potential participants are cognitively able to participate and complete informed consent. An O-Log greater than 26 signifies that the individual is cognitively able to participate.

The Rey Auditory and Verbal Learning Test(RAVLT)/ WHO-UCLA Auditory Verbal assesses short-term auditory-verbal memory, rate of learning, learning strategies, retroactive,

and proactive interference, presence of confabulation or confusion in memory processes, retention of information, and differences between learning and retrieval (Lezak, Howieson, & Loring, 2004). The RAVLT consists of 15 words repeated over five different trials. Participants must repeat as many words as they can remember, in any order. They are then given a new list of words to remember. After reading the second list, they must repeat back as many words they can remember from the first list. Then, they must repeat the words after a 20 minute delay. The RAVLT and the Who-UCLA AVLT are similar; however, the WHO-UCLA AVLT is available in Spanish. The calculated T-score for the RAVLT/ WHO-UCLA AVLT total sum of the five learning trials will be utilized in this study.

The other key indices, such as “short-term percent memory retention”, “learning over trials,” and “forgetting” was only investigated during supplemental analyses. Short-term percent memory retention is based on the number of words remembered on the first list after introduction of a new list of words divided by the total number of words remembered at the fifth learning trial, then times the score by 100 to obtain the memory retention percentage. Learning over trials is based on the total number of words learned over the five learning trials and then subtracting such score by the first trial score multiplied by 5. This will produce the learning score over the five trials. Lastly, forgetting is based on calculating the number of words remembered from the first list after the introduction of a new list of words divided by the total number of words remembered after the 20 minute delay.

Trail Making Test A&B (TMTA or TMTB) - is a brief neuropsychological test to assess processing speed and executive function (Reitan, 2002). There are 2 parts. Part A contains 25 consecutive circles, numbered from 1 to 25. Participants must draw a line connecting the circles

as fast as they can go from 1 to 25 trying to make the least amount of errors. Part B contains numbers and letters. Participants must connect the circles, alternating between letters and numbers (e.g. 1 to A to 2 to B). The total amount of time for completion of versions is recorded. The raw scores are then compared to normative data and a scale score is obtained. From this scale score, based on educational attainment, race/ethnicity, and gender, a T-score may be derived. The T-scores for Part A signifies processing speed and part B signifies executive functioning abilities and both were utilized for this study

Impaired awareness (IA)

Awareness Questionnaire (Sherer, Boake, Levin, Silver, Ringholz, & High, J, 1998) - Two versions were utilized: Clinician and Person with injury. The Person with injury are asked to assess various aspects that may change after injury and they are to rate whether the ability is worse, the same, or better in comparison to before their injury. The Clinician version asks the same questions; however, the clinician rates the individual's abilities. Scores range from 17-85, with 51 estimating "same as before the injury." Both scores are used to compute a discrepancy score to assess impaired awareness. Difference scores range from -68 to 68, with higher scores indicating that the patient rates him/herself as higher than the clinician. Difference scores greater than 20 signifies impaired awareness. The difference scores were utilized in this study to measure impaired awareness. Only five participants' difference scores classified them as having impaired awareness.

Gender Role Conflict

Gender Role Conflict Scale (GRCS) was developed to assess the thoughts and feelings about the gender-role behaviors' of men (O'Neil, Helms, & Gable, 1986, p. 339). This is a 37-item

self-report measure of the degree to which respondents prescribe to attitudes and behaviors associated with gender role conflict. Using a 6-point Likert scale (1=strongly disagree to 6=strongly agree), respondents rate to what degree of agreement or disagreement they have for each item. Higher scores on the GRCS indicate greater gender role conflict and fear about femininity. Using a confirmatory factor analysis, four subscales were created: Restrictive Emotionality; Success, Power and Competition; Restrictive Affectionate Behavior between Men; Conflicts between Work and Family relations. *Restrictive Emotionality* subscale focuses on the difficulty with expressing one's feelings and denying others' rights to self-expression (10 items: Chronbach's alpha = .82, test-retest = .76). *Success, Power and Competition* subscale focuses on the concern for work and accomplishment and also having the ability to have authority, influence and compete against others (13 items: Chronbach's alpha = .85, test-retest = .84). *Restrictive Affectionate Behavior between Men* subscale deals with limiting sexual expression and affection towards others and addressing the fear of homosexuality (8 items: Chronbach's alpha = .83, test-retest = .86). *Conflicts between Work and Family relations* subscale addresses the inter-role conflict between work roles and family obligations (6 items: Chronbach's alpha = .75, test-retest = .72). Per the suggestions made by the developer of the GRCS, the male and female versions of the measure were utilized in this study.

Gender Role Self-Concept

Bem Sex Role Inventory- Short Form (BSRI-SF) was developed to assess stereotypical gender traits (Bem, 1981). The BSRI-SF is a 30- item self-report measure, which consists of 10 masculine traits and 10 feminine traits with the remainder consisting of filler questions. For this study, only the 20 items will be utilized. Respondents are asked to rate each trait on a 7-point

scale from 1 “never or almost never true” to 7 “always or almost always true.” Mean split scores for the masculine and feminine trait subscales were utilized to determine to classify subjects to *masculine* (high masculinity, low femininity), *feminine* (high femininity, low masculinity), *androgynous* (high-high), and *undifferentiated* (low-low) self-identified gender role categories.

Sense of Self

Sense of Self Scale (SoSS) is a 12-item questionnaire that consists of four components of a weak sense of self: “(1) difficulty in keeping one’s own identity separate from that of others; (2) a lack of knowledge about one’s own interests, opinions, and personality; (3) sudden shifts in feelings, values, and preferences; and (4) the feeling of a tenuous existence (Flury & Ickes, 2007, p. 285). The items are scored based on a Likert-type scale, with 1 “very uncharacteristic of me” through 4 “very characteristic of me.” The range consists of scores from 12 to 48. Higher scores indicate weaker sense of self. The Cronbach’s alpha has ranged from .83 to .86. The SoSS has convergent, discriminant, and predictive validity. It has not been utilized with persons with TBI.

The Head Injury Differential Self Scale (HISD II) - is a measure of personal traits. It includes bipolar adjectives and individual are to rate where they lie on the spectrum (e.g. happy/sad) (Tyerman & Humphrey, 1984). Participants are asked to rate themselves pre-injury and also at the present moment. This measure has good internal consistency, with a Cronbach’s alpha of .88. These two measures were used to assess loss of sense of self by calculating a discrepancy score by subtracting one score from the other. The higher the discrepancy score on the HISD signifies greater change from the pre-injury to post-injury self.

Coping

Brief COPE (Carver, 1997) is a 24-item measure used to assess a variety of coping responses. The measure is guided by the idea of two types of coping style, dysfunctional and functional responses. It consists of 8 subscales, which includes only 2 items per scale: Self-distraction, Active Coping, Denial, Substance Use, Use of Emotional Support, Behavioral Disengagement, Venting, Positive Reframing, Planning, Humor, Acceptance, and Religion. Using a 4-point Likert scale, participants indicate the frequency of use of the specific coping strategy (e.g. 1 = I usually do not do this; 2 = I usually do this a little bit; 3 = I usually do this a medium amount; 4 = I usually do this a lot). Higher scores indicate greater use of the specific coping strategy. An *Avoidant Coping* subscale was developed utilizing the Brief COPE 24-item measure for the analyses in this study. It includes the following subscales: Behavioral Disengagement, Denial, Self-distraction, and Substance Abuse. The Brief COPE showed good internal consistency in a sample of persons with mild TBI, with a Cronbach's alpha of .77 (Snell, Siegert, Hay-Smith, & Surgenor, 2011).

Psychosocial Adjustment

Disability adjustment. Acceptance to Disability (TBI) Scale (AD-TBI) is a 21-item revised version of the 50-item AD Scale by Linkowski (1971). It assesses an individual's general acceptance of traumatic brain injury. The original AD Scale has been often used to study persons with disabilities (Alston & McCown, 1994; Berglund, Mattiasson, & Nordstrom, 2003; Li & Moore, 1998, 2001; Snead & Davis, 2002; Woodrich & Patterson, 1983). Items on the AD-TBI are rated using a 4-point Likert scale with responses ranging from 1 "Strongly disagree" to 4 "Strongly agree." The composite score disability acceptance is yielded from the summed items. In a sample of persons with TBI, the Cronbach alpha coefficient was .91 (Pappadis, 2008).

Emotional adjustment

The GAD-7- is a 7 item questionnaire to assess generalized anxiety (Spitzer, Kroenke, Williams, & Lowe, 2006). Individuals are asked to rate how much they have been bothered by certain symptoms over the past few weeks. It has been frequently used as a sensitive measure to assess generalized anxiety disorder. The GAD-7 has excellent reliability, with Cronbach's alpha of .84 (Spitzer et al., 2006). The test-retest reliability of the GAD-7 is .80 (Spitzer et al., 2006). The total score was used to assess anxiety. Higher scores indicate greater frequency of anxiety symptoms.

The PHQ-9 - is a 9 item questionnaire to assess depression (Kroenke, Spitzer, & Williams, 2001). Individuals are asked to rate how much they have been bothered by certain symptoms over the past few weeks. The PHQ-9 has good internal consistency and test-retest reliability (Kroenke et al., 2001)). The total score was used to assess depression. Higher scores indicate greater frequency of depressive symptoms.

P4 Screener- is a short tool utilized to assess potential suicide risk (Dube, Kurt, Bair, Theobald, & Williams, 2010). Individuals are classified based on their responses as having minimal, lower, or higher risk for suicide. This measure was only be given to participants who endorse having thoughts that they would be better off dead or hurting themselves using the PHQ. Only 3 participants endorsed potential suicide thoughts and/or actions, with all classified as having minimum risk. Referrals for appropriate services were made, if necessary.

Several instruments were used in this study to assess the key conceptual variables of cognitive functioning, impaired awareness, gender role self-concept, gender role conflict, coping styles, and psychosocial adjustment. To help with the ease of interpretation of the key

variables, Table 3 can be reviewed, which includes the nominal and operational definitions of the key variables of interest included in this study.

DATA ANALYSIS

Qualitative Analysis

Data was transcribed and coded using the 8th version of NVivo qualitative analysis software. Analysis was based on Grounded Theory (Glaser & Strauss, 1967) to find the major themes that emerge from the constant comparative analysis of the data based on the narratives of the study participants. Coding was conducted in a multi-step process through open coding, focused coding, re-analysis, mega-theme coding, and then development of a theory understanding gender role conflict and change in sense of self after TBI. Starting with open coding, the transcripts of the semi-structured qualitative interviews were read line-by-line and manually coded. During this stage, it was important that I remained open and allow the themes to emerge from the data. As the open coding preceded, constant comparison within and among transcripts was done as themes, subthemes, and core categories were documented. Throughout this stage, memoing was done which allows the researcher to make notes regarding the themes that emerge during the constant comparison process. Transcripts were read several times starting with the open coding and then more focused, selective coding. Constant comparisons continued and the use of memos. Core themes or mega-themes are then created from the data using the nodes after several rounds of constant comparisons. After creation of the core themes, theoretical coding takes place which leads to the development of theory based on the social processes of the phenomenon and verifying such processes with the literature.

Table 3. Nominal and Operational Definitions of Key Outcome Variables

| Conceptual Variable | Abbreviations | Operational Variable | Operational Definitions |
|---------------------------------|---------------|--------------------------------------|---|
| Neurocognition | RAVLT | Rey Auditory Visual Learning Test | Calculated, norm-based T-score of the sum of total words learned over the five trails of the verbal memory test. |
| | TMTA | Trail-making Test trial A | Calculated, norm-based T-score of the total time for completion of trail A, which measures processing speed. |
| | TMTB | Trail-making Test trial B | Calculated, norm-based T-score of the total time for completion of trail B, which measures executive functioning. |
| | IA | Awareness Questionnaire | Discrepancy score based on the person with injury and the clinician scores, which measures awareness. Discrepancy scores greater than 20 signifies impaired awareness. |
| Gender Role Self Concept | BSRI | Bem Sex Role Inventory – Short Form | Overall T-score based on participants' mean scores on the masculine and feminine trait subscales. |
| Gender Role Conflict | GRCS | Gender Role Conflict Scale | Calculated total score of the 37-items on the GRCS. Higher scores indicate greater levels of reported gender role conflict. |
| | GRCS SPC | Success, Power, and Control Subscale | Calculated subscale score based on participant's concern for work and accomplishments and also their ability to have authority, influence and compete with others. Greater scores indicate greater success, power, and control. |
| | GRCS RE | Restrictive Emotionality Subscale | Calculated subscale score based on participant's difficulty with expressing one's feelings and denying others' rights to self-expression. Greater scores indicate greater difficulty with self-expression. |

| | | | |
|--------------------------------|----------|--|---|
| | GRCS RA | Restrictive Affectionate Behavior Between Men/Women | Calculated subscale score based on participant's limiting their sexual expression and affection towards others of the same sex and addressing the fear of homosexuality. Greater scores indicate greater difficulty with sexual expression and affection towards individuals of the same-sex. |
| | GRCS CWL | Conflict Between Work and Leisure Subscale | Calculated subscale score based on participant's inter-role conflict between work roles and family obligations. Greater scores indicate greater work-family role conflict. |
| | HISD | Head Injury Semantic Differential Scale difference score | Discrepancy score between pre-injury and post-injury self ratings, greater scores indicate greater changes from pre- to post-injury self. |
| Self-Identity | SoSS | Sense of Self Scale | Calculated total score based on having a weaker sense of self. Higher scores indicate a weaker sense of self. |
| | AC | Avoidant Coping | Avoidant coping total score based on the sum of the Behavioral Disengagement, Denial, Self-distraction, and Substance Abuse subscales of the Brief COPE. Higher scores indicate greater frequency of use of avoidant coping style to adjust to TBI. |
| Avoidant Coping | AD | Acceptance of Disability Scale | Calculated total score of the Adjustment to Disability scale. Greater scores indicate greater acceptance of TBI. |
| | PHQ | Patient Health Questionnaire 9-item score | Calculated total score of the PHQ-9 to assess depressive symptoms. Greater scores indicate greater self-reported depressive symptoms. |
| | GAD | Generalized Anxiety Disorder 7-item score | Calculated total score of the GAD-7 to assess anxiety symptoms. Greater scores indicate greater self-reported anxiety symptoms. |
| Psychosocial Adjustment | | | |
| | | | |
| | | | |

Triangulation of the data was conducted by making comparisons with the qualitative and quantitative data regarding the phenomenon under investigation. Coding was conducted by the researcher and a bilingual English- and Spanish-speaking colleague who has experience in coding qualitative interviews of persons with TBI; in addition, she has more than 10 years of TBI research experience and holds a license as a professional counselor with specialization in providing therapy to persons with TBI and other disabilities and their families.

Quantitative Analyses

Descriptive statistics was conducted to assess normality, outliers and missing data using SPSS 18.0. Additional analyses were conducted using independent *t*-tests, ANOVAs, and correlation analysis to assess whether individuals who participated in a treatment program scored differently on the outcome measures in comparison to those who did not to determine if there is an unintended treatment effect. Cronbach's alpha coefficients were calculated to assess the reliabilities of the outcome measurements. In addition, correlation analyses were conducted to add significant relationships between demographic (e.g. age, education) and injury-related variables (e.g. GCS, time post injury) with the outcome measurements. Correlations were also computed for relationships among the outcome measures.

Data Analysis by Hypothesis

H1. *There are significant differences on gender role conflict and psychosocial adjustment by gender role self concept.*

- i. Two separate multivariate analysis of variance (MANOVA) with post hoc comparisons were conducted to determine if significant differences exist among the

- four gender role self concept groups (feminine, masculine, undifferentiated, and androgynous) on gender role conflict and emotional adjustment (i.e. PHQ, GAD).
- ii. An ANOVA with post hoc comparisons was conducted to determine if significant differences exist among the four gender role self concept groups (feminine, masculine, undifferentiated, and androgynous) on the acceptance to disability (AD) scale.

H2. The level of cognitive functioning will mediate the relationship between gender role conflict and sense of self.

- i. Bivariate correlations were performed between cognitive functioning, gender role conflict and sense of self measures. Significant correlations ($p < .05$) between all measures were assessed.
- ii. Next, to test for mediation, a multiple regression analysis was conducted in two parts. First, gender role conflict (IV) was regressed on cognitive functioning (DV – mediator). Second, cognitive functioning (IV – mediator) and gender role conflict (IV) was regressed on sense of self (DV). The unstandardized coefficients (B and standard error) were documented for both analyses. These numbers can be used to calculate significance ($p < .05$) using the Sobel test. If it is significant, this means that there is evidence of mediation by cognitive functioning.
- iii. This hypothesis was also assessed using SEM Amos 18 using latent factors gender role conflict, sense of self and cognitive functioning.

H3. Significant differences of gender role conflict will be reported between males and females.

- i. A one-way analysis of covariance (ANCOVA) with post hoc comparisons was conducted to determine significant differences by gender, while controlling for years of education.

H4. *Differences will exist between ethnic minorities on gender role conflict.*

- iii. An analysis of covariance (ANCOVA) with post hoc comparisons was conducted to determine differences between ethnic minorities after controlling for potential confounding variables. Potential confounding variables such as time post injury, age, education, income, injury severity, and cognitive functioning were assessed for inclusion. However, a randomized block design ANCOVA was conducted due to violating the assumptions of homogeneity for an ANCOVA.

H5. *Significant differences on changes of sense of self after TBI will be reported between males and females.*

- i. An ANCOVA, controlling for education, was conducted to determine differences by gender.

H6. *Significant differences on changes of sense of self after TBI will be reported between ethnic minorities.*

- i. An analysis of covariance (ANCOVA) with post hoc comparisons was conducted to determine differences between ethnic minorities after controlling for potential confounding variables. Potential confounding variables may be time post injury, age, education, income, injury severity, and cognitive functioning. However, education was used as an covariate in the analysis.

H7. *Neurocognition and Coping style are significant mediators between gender role conflict and sense of self with psychosocial adjustment.*

- i. Several multiple regression analyses were conducted to determine if neurocognition and/or avoidant coping were significant mediators. The Sobel test for mediation was conducted to assess significance. A significant Sobel test indicates evidence of mediation.

H8. *Gender and ethnicity will be significant moderators of psychosocial adjustment.*

- i. Moderation testing was conducted using multi-group invariance testing using AMOS 18 for both gender and ethnicity separately. Invariance testing is done by constraining pathways and then consecutively freeing one path way at a time and leaving all significant paths free for estimation. In addition, mediation may be assessed by investigating the indirect effects for significance. Significant differences among models may also be determined using the Chi-square difference test.

To test the proposed conceptual framework:

A maximum-likelihood analysis was conducted using AMOS 18 for the Structural Regression model, a Structural Equation model. A two-step procedure (Anderson & Gerbing, 1988) was utilized to test the mediation effects in this study of psychosocial adjustment to TBI. The first step involves conducting a confirmatory factory analysis to determine how well the latent factors are measured by their corresponding manifest variables or measurement scales. The second step involves testing the proposed model and examining the adequacy of model fit. Model fit will be assessed using the X^2 , SRMR, GFI, CFI, NNFI, and RMSEA. The acceptable values for the model fit indicators are: $X^2 > .05$, $RMSEA \leq .05$, $NFI > .90$, $CFI > .90$, $GFI > .90$, and

SRMR > .90 (Shumacker & Lomax, 2004). In addition, a chi-square difference test can be used to determine if significant differences exist for males and females, in addition to differences between Ethnic/Racial Minorities and Whites. Correlations between the variables will be assessed to determine whether there is a need to proceed with testing mediation effects. If a specific variable is not significantly correlated ($p < .05$) with psychosocial adjustment, it will be removed as a mediator from the model.

CHAPTER 4

RESULTS

Participant Characteristics

Demographic characteristics of the participants are detailed in Table 4. Overall, as proposed the sample was diverse in regards to race/ethnicity, gender, education, and income. Sixty persons with TBI participated in the study and included an even split among racial/ethnic groups. Majority of the participants were male; however, there were nearly equivalent percentages of males and females who participated. Similar to other studies using samples with TBI, the average participant was in their late thirties at the time of assessment. The average time post injury was about 4 years post injury to the time of the assessment. There was also a near equivalent percentage of participants who have completed high school or less education with those who completed at least some college. Majority of the participants were English-speaking. Majority of the Spanish-speaking participants were born outside of the U.S. and has spent an average of 17.83 years ($SD = 12.34$) in the U.S. Sixty percent of the participants were never married, widowed, or separated. The most occurring mechanism of injury was due to either a motorcycle or motovehicular collision, followed by auto-pedestrian injuries, and falls or jumps. Sixty percent of the sample was diagnosed as having a severe TBI (i.e. ER GCS < 8), while 10 percent had a moderate injury (i.e. ER GCS 9-12) and twenty-five percent had a mild TBI (i.e. ER GCS 13-15). There were 3 individuals (5%) that did not have a documented initial ER GCS notated in their medical records. Slightly greater than half of the participants had an annual household income of less than or equal to \$20,000. Majority endorsed practicing their religion, with majority self-identifying as Christian. Lastly, it was also a near even split between those

who engaged in productive activities (e.g. work, student, homemaker, volunteer) and those who do not (e.g. nonproductive).

Table 4. Demographic and injury-related characteristics of study sample.

| | Total (N = 60) |
|---------------------------------|---------------------------|
| Race | |
| Black | 18 (30.0) |
| Hispanic/Latino | 19 (31.7) |
| White | 23 (38.3) |
| Gender, n (%) | |
| Female | 28 (46.7) |
| Male | 32 (53.3) |
| Age | |
| mean (SD) [min-max] | 37.8 (10.32) [19-59] |
| Education | |
| <High School | 10 (16.7) |
| High School | 16 (26.7) |
| Some College or College Degree | 34 (57.6) |
| Language | |
| English | 52 (86.7) |
| Spanish | 8 (13.3) |
| US Born | |
| Yes | 54 (90.0) |
| No | 6 (10.0) |
| Marital Status | |
| Single/Divorced/Separated | 36 (60.0) |
| Married/Cohabiting | 24 (40.0) |
| Practicing a religion | |
| Yes | 42 (71.7) |
| No | 18 (28.3) |
| Income | |
| ≤ \$20K | 32 (53.3) |
| >\$20K | 27 (45.0) |
| Post-Injury Productivity | |
| Productive | 33 (55.0) |
| Nonproductive | 27 (45.0) |
| ER GCS | |
| mean (SD) [min-max] | 7.98 (4.59) [3 – 15] |
| Months Post Injury | |
| mean (SD) [min-max] | 48.63 (52.38) [3 – 246] |

Mechanism of Injury

| | |
|---------------------------|-----------|
| MVA/ MCA | 31 (51.7) |
| Auto-pedestrian | 10 (16.7) |
| Fall/ Jump | 12 (20.0) |
| Assault | 4 (6.7) |
| Gunshot wound | 1 (1.6) |
| All Terrain Vehicle (ATV) | 2 (3.3) |

Qualitative Results

The research question for the qualitative part of this study was: What are the personal experiences of gender role conflict and changes of sense of self after traumatic brain injury? To answer this question, the qualitative interviews of 48 research participants were analyzed using NVivo 18.0. The themes that emerged regarding gender role conflict and changes in sense of self were explored independently. A supplemental analysis of coping methods was also conducted to identify themes regarding the coping mechanisms participants utilized to adjust to the consequences of their injury. Codes were confirmed through triangulation by use of research professionals who have experience with TBI and coding qualitative interviews.

GENDER ROLE CONFLICT***Roles***

There was an even split between those who identified role changes and those who did not. Those who did not identify changes stated that they still felt like either a man or a woman and the TBI did not have an effect on such identity. Many of those who did not identify role changes did acknowledge differences in self after injury but did not express themselves differently as a man or woman since after injury. However, this was not the case for the

remainder of the participants. Role changes identified were related to changes in their career and their household. One participant stated:

“Now that I can think of it...if I wouldn’t (have) had the brain injury then I would have been, you know, I would have been a career woman, ‘cause that’s what I was doing before I had my accident, you know, and I would have just been – just probably really busy and not been able to spend as much time with them (family)....(because) now, I don’t work.” (Subject 7050).

Several identified changes in their roles as provider, mother, wife, husband, and father.

One male participant struggled with dealing with the fact that now his wife works after the injury.

“That’s one of the biggest reasons I don’t like where I’m at and a lot of my questions are middle or negative across the board ‘cause I just want to get back to being where I was. I mean, I do not like my wife going to work, especially ... but I know she wanted to work and I’d give her enough money where she didn’t have to work...– (I will) take care of her is what I said I’d do.” (Subject 7019).

The challenges after injury caused many of them to feel like they are “no longer the man of the house”, question their role “as a wife or mother”, and acknowledged decreased abilities related to their roles in the home, such as decreased cooking abilities, inability to do chores or other activities.

Feelings of Inadequacy, Fear, and Isolation

Several participants revealed that they felt “inadequate” or no longer “whole” since after the TBI. Many of the fears and inadequacies identified stemmed from a lack of confidence in self and abilities after injury. As it is common after injury, many persons with TBI are unable to resume pre-injury activities and roles, which is often difficult for them to handle. Isolation

emerged due to the inability to participate in activities and so a few stated that they just kept to themselves or isolated themselves in their homes.

"I don't feel as confident as I used to... So many changes with – within myself, my confidence is gone. Uh, I just – I don't feel like me, which is weird in a way. I just – I – I have a lot of fears. Now that my injury has slowed me down, I'm afraid even going to the store that somebody could grab me, grab my purse and I couldn't protect myself. I feel vulnerable, very."(Subject 7025).

"Well, just my feeling how to put to do what I need to do and have something – have a female person, woman, help me constantly while I'm not able to do those things, have me feel as if I was not providing like I was supposed to provide. Simple things like taking the garbage out or picking up the kids if one has to work late or something. Those are the things that I normally did that I couldn't do anymore. Just made me feel inadequate as far as being a man – handle those jobs and I couldn't do it." (Subject 7013).

Body Image

Nearly a third of the women referenced changes in their physical appearance since after their injury. Several no longer felt pretty, struggled with maintaining their appearance, experienced hair loss, scars, and didn't see a need to wear makeup. A few did not realize that they had given up on grooming until others mentioned it.

"I've had up to three surgeries and my head was shaved. So, from going a full head of long hair to bald to now new growth, natural...So got to wear wigs and (I'm) self-conscious about my looks, my appearance...but you know, our hair's our glory. So, that again I have a problem with."(Subject 7046)

"It completely changed me from being the vivacious sexy me and very girly me to just no upkeep, no anything. It was just I guess just not there...I would barely even bathe myself because...it was brought to my attention that hey, you got – you're not yourself in so many words. What can I do to help you? When I was asked that question, it was like a reality check." (Subject 7054).

Relationships

There was a mixture of responses related to positive and negative changes in their relationships with their family, friends, and/or significant others. Some experienced a closer relationship with their loved ones, whereas others stated that they lost relationships.

"I'm very, very seriously dating the guy I was hit with now. I mean, he didn't have a brain injury – like he had broken bones. So, he took the physical. I took the TBI out of this accident and he doesn't understand brain injury but he was hit that night, too. He knows what it's like to kind of have your life flipped upside down by, you know, some drunk idiot and he has been there for me in a way that I never would have expected any guy to be there for me. I mean, having that relationship and feeling like that's going to continue on in the future and that's like one thing that I can count on, it's really cool and it's made everything so much easier." (Subject 7056).

"As far as my role as wife, that has completely changed. He's moved out of our bedroom, has since I came home from the hospital. So I really don't feel like a wife or even a woman around him." Subject (7025)

Gender Role Identity

Gender Role Identity was another key theme identified in the data, where individuals described their maleness or females and the identity associated with such. Although a couple of men and women shared that they still feel manly or like a female after injury, many of the participants noticed changes in their gender role identity. A few of the men stated that they realized they are no longer invincible, vulnerable, are quieter/calmer, and more sensitive, whereas the females in the study, stated that they were tougher, either more or less girly, and more vulnerable. Many of the Hispanic males expressed the change in their identity as a Hispanic male. One participant has a more relaxed personality to complement the Hispanic identity of being macho:

"Like I say now I'm no more of a macho or not being macho man just for the fact that back then I expressed myself and I was very like macho-like but now, I'm more quiet. I'm like quiet – to

like Hispanics that's what we're really like (being macho). So, we're always quiet and we express ourselves when we need to express ourselves, and I'm more like that now. So, I'm more relaxed but I can be like firm, but gentle at the same time, but back then I was just very firm all the time (laughs)."(Subject 7027)

SENSE OF SELF

Achieved vs. Weakened Self

After a TBI, individuals may have to reconstruct their identity as they make comparisons between their pre-injury self and post-injury self. Individuals who are able to still view themselves as the same person, despite their circumstances, are those who have an *achieved sense of self*. This term is borrowed by the developmental psychologist Erik Erikson. In contrast, those who notice that they are a different person after injury are those who have a *weakened sense of self*. There were a few individuals who viewed themselves as the same person despite reported changes in their life after injury.

"It hasn't affected the way I see myself. I still see myself the same." (Subject 7027).

While others notice a complete disruption of self after injury, they reported feeling totally different.

"I'm different. I changed a lot. So, I'm kind of different now...I'm a whole, totally different person, you know." (Subject 7010).

"Really, just sometimes I don't know myself 'cause I have such different thoughts to where, you know, I think would be an old me...I'm just – I feel like a totally different person. Even sometimes I feel like I sound different."(Subject 7025)

"So, it's a constant struggle. I feel like I'm at total war with myself with how I feel about me and you know everything else around me."(Subject 7054)

Fear, Uncertainty, Lack of Control

As mentioned previously, there is an overwhelming fear after injury, which also includes uncertainty of life, feelings, and recovery, and the loss of control. There are so many changes that occur after injury that individuals may feel that they have no idea of what will occur next or whether or not they will regain their previous abilities or be able to resume pre-injury activities. There is a sense of a lack of control because they feel powerless with their recovery and do not know when or if they will ever be like they once were. Oftentimes, individuals are in comas and they lose memory of the events surrounding their injury. This lack of information often causes feeling of uncertainty and loss of a time period in their life that can never be regained.

"I have a fear of walking to the road, you know. I don't want to get on it, you know and I noticed that when I'm in a vehicle, you know, and I see the road and I see cars coming, I back away because I think I'm gonna get hit, you know or we're gonna crash, you know. It's – everything's coming at me real fast. So, you know, I get scared sometimes... I slow down, you know, 'cause I'm thinking somebody's gonna run over me. Even if they're walking, they're gonna bump into me, or I almost bump into them or something but I have a fear of falling and I don't want to fall...My goal is just to be back the way I was..." (Subject 7047).

"And they all said that I was out cold, the whole time. I was unresponsive the whole time. That for me is... I missed however long that was 'cause I still don't know how long it was, I missed that time period in my life and I can't take it back, can't bring it back, I can't remember. I don't know what happened. So, that has caused a discomfort just not knowing." (Subject 7054).

Loss of Autonomy

There is a large body of literature regarding the loss of independence after injury. Persons with TBI are unable to do many activities like before or unable to resume their familial or social roles. In addition, the physical changes after injury can also impact someone's perceived level of independence after injury.

“So, I might be a little slow about it, you know. I might have to find that they have a class for people with disabilities that’s kind of slow, you know, at learning and uh, but I want to – I want to further my education ‘cause I feel useless now since the accident. I really do. I feel useless.” (Subject 7034)

Injury Appraisal

As mentioned several times before, persons with TBI may have physical, cognitive, emotional, and social changes after injury that may impact their psychosocial adjustment and/or overall quality of life. These changes and how one cope with the consequences of injury can impact their sense of self. By acknowledging the injury and its impact, an individual will look within to identify how this impact has resulted in changes in self. This study was no different with regards to individuals identifying the consequences of their injury and how it impacts how they view themselves and whether they are the same or a different person after injury.

Many of the physical changes that impacted self were vision problems, headaches, body image changes, fatigue, and hearing difficulties. The cognitive changes frequently mentioned are memory changes, decreased processing speed, poor concentration/attention, and language difficulties. The emotional consequences to self frequently reported included depression, anxiety, anger, and becoming emotional, sensitive, or crying easily. Lastly, there were numerous social changes mentioned that may impact one’s social self in relations with others. These included: decreased friendships, lost relationships, intolerance of others, social isolation, and pushing others away.

“I lost my left side peripheral vision in both eyes. On my left eye, I see double...So it’s blurred vision. (Subject 7008).

“Well, it takes me longer to think of something to say, you know, things to do during the day, takes me a lot longer to be able to concentrate on what I want to do.” (Subject 7035)

"I have really bad depression and I never had depression and I – I've always had self-esteem kind of problems before my accident but no one ever could tell but now I have such bad self-esteem, I mean, I – I actually hate myself. I don't have any friends anymore, uh, and I have such depression. I mean, it's insane and I never ever had depression and I had – I mean, I had been through a lot before my accident – through lots of different emotional things and never had depression and now I have severe depression. I mean, I'm – I'm on a lot of medications for depression, but they did just half my Cymbalta. I was taking 120 milligrams of Cymbalta. Now I only take 60, but I also take Trazodone." (Subject 7039).

"I lost a lot of friends after the accident just due to the fact that, you know, I felt like it was a second chance for me and I – my routines and my things that were important to me before the accident did not run parallel after the accident. So, my activities changed in that I was not performing the same tasks as I was for social gatherings, for entertainment. I was functioning in a different mode. So, it required me to drop a lot of friends that I felt no longer brought me value just based on the fact that we didn't really share interests anymore as well as create new friendships of people that are more aligned with what I was hoping for or as my taste had changed would more run parallel with what they would – what we would both share in common, you know, to develop those friendships." (Subject 7020)

Benevolence and Empathy

After experiencing a trauma, which can dramatically change one's life, individuals oftentimes find a new love in helping others. There is a need to do more either for one's social network or for society as a whole. In addition, many individuals after sustaining a TBI, they are now categorizing themselves in the same group as others with disabilities. Their cognitive impairment helps them gain a new understanding and empathy for persons with disabilities.

"It's a learning experience. It's something that you truly don't appreciate until you've gone through it yourself, especially me being a nurse. We say we understand or we try to let them think we understand or have empathy, but you truly have no idea what it's like for someone until you've gone through it yourself. And that way it's helped me because I have a special needs son that has a lot of brain issues. It's helped me understand him more and just the whole brain process. So, it's been a positive thing in my life because it's opened up a lot of things for me and helped me where I'm gonna be in life.."(Subject 7049).

Appreciation for Life and Positive Self-concept

A few individuals noted how they have a new appreciation for life after surviving their

TBI. In addition, some view themselves more positively after injury and that they are a better person. Often, research focuses on the negative consequences of injury. However, for many the TBI resulted in positive changes and feel that they have a better purpose in their life and received a “wake-up call”.

“I have to look at my blessings, my accomplishments, my children ‘cause they’re beautiful. The things that I created, all of my accomplishments from birth to education to the fact that I survived so much and I’m still here.” (Subject 7054)

“It’s more just knowing or feeling like I’m here for a purpose. There’s a reason why I survived it and maybe I wasn’t doing well or what I should have been doing as far as my faith is concerned. The Lord and it was a wakeup call to start living right and doing the things I should have been doing even at the time I thought I was, but something was out of sync that the Lord didn’t agree with and he was just trying to give me a wakeup call to say, Hey, you’re not doing what I put you there for.” (Subject 7049)

Role of Religion and Spirituality

Lastly, individual’s religion and/or spirituality played a role in how they view themselves after injury. Some acknowledged that God slowed them down and give all credit to God and are thankful.

“So, that’s truly what has changed kind of a God-send. It made me realize how I was living my life, you know.” (Subject 7048).

“Yes. I mean the road has not been easy. I mean, this pain we had going through this brain injury thing. No one would ever go through what we went through, but you know, the Lord – this happened to us for a reason and I thank the Lord for it ‘cause I’m still here and it’s my testimony.” (Subject 7038).

“I thank God for him every single day because if it wasn’t for him, then I don’t know what I would be dealing with or who or what, you know, just – I just have no idea. So, yeah.” (Subject 7054)

“I changed a whole lot. I think that ‘cause you know I’m saying if it wasn’t for that man upstairs, I wouldn’t be here right today.” (Subject 7010)

COPING

Participants included several ways that helped them adjust to the TBI. A few individuals stated that they have not yet adjusted to the injury and are trying to cope and handle the changes since injury. Some of the ways of coping included God as their key to adjustment, trying to get back into pre-injury activities, social support from friends and family, receiving encouragement from others, trying not to think about the injury, acknowledging the situation, and learning compensatory strategies and engaging in brain exercises.

"The Lord, really. God has helped me to adjust to all the changes and just to be thankful and grateful that when people do stuff, they don't do it to offend me on purpose, but they do it out of caring and uh, I appreciate that and I just depend on him to help me showering, sitting in the bathtub, still have to be very careful, you know." (Subject 7046)

"My wife's helped me a lot and going back to work helped me a lot, too. And just friends being able to talk to 'em." (Subject 7016)

"I used to test myself all the time, like the test that we went through earlier. I used to test myself like that. I'd read little words and I'd be like, Okay, remember them. And I would try to read 'em again until I usually got them all down. I would try to do brain exercises." (Subject 7027)

"Uh, what helped me was encouragement words from people, TIRR, and things they gave me home exercise or I do home exercise. I read. When people told me nice stuff, encouraging words, I hold onto that and I just take the next step and see if I can do this, let me see if I can do this. I try to go to the next step." (Subject 7038)

Quantitative Results

Data Screening

Prior to hypothesis testing, all data were screened for accuracy of data entry, missing values, outliers, and normality using SPSS 18.0. There were a few cases that were miscoded on the Gender Role Conflict Scale (GRCS) and the Brief COPE scale, which were corrected. There

were only two cases that had nonrandom missing values on key measures of interest. One participant refused to answer two questions from the Gender Role Conflict Scale (GRCS) due to the sensitivity of the statement, which was perceived to be a homophobic question by the participant. Another participant failed to complete a few of the measures due to testing fatigue. Resumption of the study was not possible due to severe illness resulting in hospitalization and then later becoming deceased. Due to the relatively small sample size, these two cases were maintained in the data.

Missing values were replaced by the mean on the Acceptance with TBI Scale (AD) and the Gender Role Conflict Scale (GRCS) for the two aforementioned cases. Skewness and kurtosis were assessed to determine if measures and subscales are normally distributed. There were three measures producing a non-normal distribution, GAD, PHQ, and time post injury. These variables were positively skewed, where majority of the individuals are reporting low scores on the measures to assess emotional functioning. Transformations of variables, such as square root and logarithm, were not conducted and all cases were maintained. It is expected that measures of emotional functioning will be positively skewed due to fewer individuals reporting emotional distress in comparison to those who are not reporting emotional distress. In addition, transformation of the variable did not change its relationship with other key variables and therefore the variables remained the same for the analyses.

Preliminary Analyses

To determine if there are significant differences based on demographic and injury-related variables on each of the dependent variables (e.g. AD, GAD, PHQ), a series of Independent Samples *t*-tests, One-way analyses of variance (ANOVA) and regression analyses

were conducted. The findings revealed that there were no significant differences in the mean scores of the AD Scale found except for gender role self-concept measured by Bem Sex Role Inventory, $F(3, 56) = 3.602, p = .019$. Post-hoc comparisons using the Tukey's statistic revealed statistically significant differences between Masculine ($M = 56.89$) and Androgynous sex roles ($M = 66.44$). Education was a significant predictor of both the AD Scale [$F(1,59) = 4.92, p = .030$] and the GAD [$F(1,59) = 4.09, p = .048$], accounting for 7.7 % and 6.5% of the variance, respectively.

Reliabilities and Factor Structures

Internal consistencies for all measures and corresponding subscales were assessed. The alpha coefficient for Awareness Questionnaire (AQ) patient and AQ clinician forms were .916 and .856, respectively. The BSRI for the masculinity and femininity subscales were acceptable at .725 and .858, respectively. The GRCS total score showed excellent reliability with a Cronbach's alpha coefficient of .918. The alpha coefficients for the four subscales were: .879 for *Success, Power, and Competition* (GRCS SPC), .804 for *Restrictive Emotionality* (GRCS RE), .890 for *Restrictive Affectionate Behavior Between Men/Women* (GRCS RAB), and .786 for *Conflict Between Work and Leisure –Family Relations* (GRCS CWL). The four subscales were all significantly inter-correlated ($p < .01$) except for the CWL and RAB subscales (.041): SPC/RE = .508, SPC/RAB = .439, SPC/CWL = .589, RE/RAB = .459, and RE/CWL = .369. The reliability for the HISD past and present forms showed excellent reliabilities of .926 and .922, respectively. The SoSS had a fair level of internal consistency with an alpha coefficient of .656. This study is the first to examine the use of SoSS in a clinical population with documented TBI. The SoSS will still be used in subsequent analyses as the examination of its utility in this population is further explored and its relationship to other key measures of interest. The brief COPE revealed acceptable internal

consistency with an alpha coefficient of .756. The Avoidant coping (AC) subscale was also acceptable with an alpha coefficient of .756. Lastly, the AD, PHQ, and GAD all showed good internal consistency with alpha coefficients of .904, .803, and .832, respectively.

Correlations between the psychosocial adjustment variables (AD, PHQ, and GAD) and the predictor variables were assessed for significance and to also identify possible multicollinearity between the variables, see Table 5. Although all correlations are depicted in the table, the correlations between the psychosocial adjustment variables and the predictors were of key interest. Therefore, a Bonferroni correction at the alpha level of .00385 (.05/13) was utilized to identify statistically significant correlations with the psychosocial adjustment variables. The AD Scale was statistically significantly correlated with the RAVLT, GRCS, GRCS RE, HISD, and the SoSS. Depression, measured by the PHQ, was significantly correlated with GRCS RE, HISD diff, SoSS, and the avoidant coping style (AC). Anxiety, measured by the GAD, was statistically significant with the GRCS RE, GRCS CWL, HISD, and the SoSS.

The following correlations between the key variables in the proposed model were statistically significant: (1) RAVLT total learning score was negatively correlated with GRCS, two of its subscales, and use of avoidant coping, indicating decreased cognitive abilities were associated with increased gender role conflict and use of avoidant coping; (2) greater impaired awareness (IA) was associated with greater gender role conflict based on success, powers, and control (GRCS SPC) subscale; and (3) greater gender role conflict was associated with a weaker sense of self (SoSS) and increased use of avoidant coping.

Descriptive Statistics

Descriptive statistics were conducted to assess the means, standard deviations, and ranges of the Key Study Measures (See Table 6). The means for the RAVLT total score is below the suggest cutoff when comparing impaired versus normal adults (Powell et al., 1991) and comparing mild TBI adults to normal adults (Guilmette & Rasile, 1995). The Trail Making Test scores (TMTA and TMTB) mean scores are in the below average impaired ranges, which is expected in a population with known cognitive impairments. IA mean indicates the average participant rated themselves at being better now compared to before the injury in comparison to the clinician ratings. The mean BSRI T scores indicate the participants scored near the population mean on this measure. The GRCS total and subscale means reveal overall high scores on the measure, indicating increased gender role conflict. The mean HISD difference score indicates overall that participants endorsed their post-injury self as being different from their pre-injury self. The SoSS mean score for this sample is relatively high, which indicates an overall weaker sense of self. The average participant endorsed using Avoidant coping most of the time to cope with their TBI. The mean AD score indicates fair acceptance to their TBI. As expected with this sample, the mean PHQ and GAD scores indicate mild depression and anxiety, respectively.

Individual who participated in a previous treatment program were compared to those who have not on the outcome measures to determine if there were any treatment effects. There were no significant differences found on the outcome measures. In addition, demographic (i.e. age, education) and injury-severity (i.e. GCS, time post injury) were assessed with their correlation with the outcome variables. All four were significantly correlated with some of the

Table 5
Correlations among Predictor and Dependent Variables

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|-----------------|--------|-------|-------|-------|------|--------|-------|--------|-------|-------|--------|--------|-------|--------|-------|----|
| 1.RAVLT | - | | | | | | | | | | | | | | | |
| 2.TMTA | .35** | - | | | | | | | | | | | | | | |
| 3.TMTB | .41** | .67** | - | | | | | | | | | | | | | |
| 4.IA | .33* | -.01 | -.22 | - | | | | | | | | | | | | |
| 5.BSRI | .31* | .00 | .33** | .08 | - | | | | | | | | | | | |
| 6.GRCS | -.35** | -.01 | -.10 | .25 | -.18 | - | | | | | | | | | | |
| 7.GRCS SPC | -.22 | .07 | -.07 | .26* | -.16 | .88** | - | | | | | | | | | |
| 8.GRCS RE | -.27* | -.09 | -.09 | .13 | -.10 | .78** | .51** | - | | | | | | | | |
| 9.GRCS RA | -.46** | -.02 | -.11 | .16 | -.22 | .69** | .44** | .46** | - | | | | | | | |
| 10. GRCS CWL | -.04 | .03 | -.04 | .20 | -.04 | .60** | .59** | .37** | .04 | - | | | | | | |
| 11. HISD | -.12 | -.04 | -.09 | -.16 | -.13 | .15 | .06 | .26* | .09 | .10 | - | | | | | |
| 12. SOSS | -.20 | -.25 | -.20 | -.16 | -.14 | .45** | .43** | .52** | .07 | .33* | .15 | - | | | | |
| 13.AC | -.27* | -.09 | -.13 | .05 | -.19 | .48** | .47** | .42** | .22 | .37** | .19 | .50** | - | | | |
| 14.AD | .40** | .23 | .24 | .12 | .21 | -.37** | -.23 | -.42** | -.32* | -.15 | -.54** | -.39** | -.32* | - | | |
| 15.PHQ | -.20 | -.06 | -.05 | -.28* | -.17 | .26 | .20 | .34** | .02 | .25 | .42** | .53** | .40** | -.53** | - | |
| 16.GAD | -.00 | -.17 | -.06 | -.32* | -.06 | .30* | .24 | .37** | .03 | .34** | .41** | .57** | .31** | -.47** | .76** | - |
| N | 60 | 60 | 60 | 60 | 60 | 59 | 60 | 60 | 59 | 60 | 60 | 60 | 60 | 59 | 60 | 60 |

Note. RAVLT = Rey Auditory Visual Learning Test; TMTA = Trial Making Test trial A; TMTB = Trial Making Test trail B; IA = Impaired Awareness; BSRI = Bem Sex Role Inventory; GRCS = Gender Role Conflict Scale; SPC = Success, Power, and Control Subscale; RE = Restrictive Emotionality Subscale; RA = Restrictive Affectionate Behavior Between Men/Women; CWL = Conflict Between Work and Leisure Subscale; HISD = Head Injury Semantic Differential Scale difference scores; SoSS = Sense of Self Scale; AC = Avoidant Coping; AD = Acceptance of TBI Scale; PHQ = Patient Health Questionnaire 9-item; GAD = Generalized Anxiety Disorder. * $p < .05$, ** $p < .01$

Table 6. Descriptive Statistics of Key Outcome Variables

| Variable (range of possible scores) | N | Range | $M \pm SD$ |
|--|----|--------------|------------------|
| RAVLT (1 – 100) | 60 | 4.7 – 72.0 | 41.2 \pm 16.2 |
| TMTA (1 - 100) | 60 | 12.0 – 81.0 | 41.8 \pm 12.0 |
| TMTB (1 - 100) | 60 | 11.0 – 70.0 | 44.3 \pm 11.5 |
| IA (-68 - 68) | 60 | -8.0 – 45.0 | 4.5 \pm 10.7 |
| BSRI (1 - 100) | 60 | 12.0 – 76.0 | 52.6 \pm 12.6 |
| GRCS (37 - 222) | 59 | 43.0 – 186.0 | 119.8 \pm 34.8 |
| SPC (13 - 78) | 60 | 17.0 – 77.0 | 46.0 \pm 15.1 |
| RE (10 - 60) | 60 | 10.0 – 56.0 | 32.8 \pm 11.1 |
| RA (8 - 48) | 59 | 8.0 – 48.0 | 23.5 \pm 11.9 |
| CWL (6 - 36) | 60 | 6.0 – 33.0 | 18.0 \pm 7.7 |
| HISD (-120 - 120) | 60 | -80.0 – 89.0 | 15.6 \pm 31.2 |
| SoSS (12 - 60) | 60 | 20.0 – 56.0 | 36.7 \pm 7.6 |
| AC (8 – 32) | 60 | 8.0 – 30.0 | 15.4 \pm 4.2 |
| AD (21 - 84) | 59 | 36.0 – 84.0 | 60.4 \pm 9.4 |
| PHQ (0 - 27) | 60 | 00.0 – 24.0 | 7.8 \pm 5.7 |
| GAD (0 - 21) | 60 | 00.0 – 21.0 | 6.9 \pm 5.1 |

Note. RAVLT = Rey Auditory Visual Learning Test; TMTA = Trial-making Test trial A; TMTB = Trial-making Test trail B; IA = Impaired Awareness; BSRI = Bem Sex Role Inventory; GRCS = Gender Role Conflict Scale; SPC = Success, Power, and Control Subscale; RE = Restrictive Emotionality Subscale; RA = Restrictive Affectionate Behavior Between Men/Women; CWL = Conflict Between Work and Leisure Subscale; HISD = Head Injury Semantic Differential Scale difference scores; SoSS = Sense of Self Scale; AC = Avoidant Coping; AD = Acceptance of TBI Scale; PHQ = Patient Health Questionnaire 9-item; GAD = Generalized Anxiety Disorder.

key outcome variables. Time post injury was negatively associated with GRCS SPC ($r = -.29, p < .05$) and GRCS CWL ($r = -.30, p < .05$). Injury severity measured by the GCS was associated with the GRCS CWL ($r = .39, p < .01$). Age was only associated with the BSRI Total score ($r = -.29, p < .05$). Lastly, education was associated with several outcome variables: RAVLT ($r = .28, p < .05$), GRCS total score ($r = -.36, p < .01$), GRCS SPC ($r = -.29, p < .05$), GRCS RE ($r = -.34, p < .01$), GRCS CWL ($r = -.29, p < .05$), SoSS ($r = -.29, p < .05$), AD ($r = .28, p < .05$), and GAD ($r = -.26, p < .05$).

Analysis of Hypotheses

Research Hypothesis 1

A multivariate analysis of variance (MANOVA) with post hoc comparisons with Tukey's statistic was conducted to determine if significant differences exist among the four gender role self concept groups (feminine, masculine, undifferentiated, and androgynous) on gender role conflict and psychosocial adjustment variables. Hypothesis 1 stated that there are significant differences on gender role conflict and psychosocial adjustment by gender role self concept. The MANOVA of the four GRCS subscales by gender role self concept did not reveal effects by BSRI groups, $F(4, 53) = .766, p = .260$. In addition, the MANOVA of the emotional adjustment variables (i.e. PHQ, GAD) by gender role self concept did not reveal effects by BSRI groups, $F(2, 55) = .957, p = .874$.

Lastly, an ANOVA of the acceptance to disability scale (AD) by gender role self-concept was tested for significant differences. The result revealed that there were significant differences in the mean AD scale scores among the 4 different types of gender role self-concept groups, $F(3, 56) = 3.60, p = .019, \eta^2 = .19$. About 19% of the variance in acceptance to disability was caused by gender role self-concept of the participants. Post hoc comparisons with Tukey's statistic suggest

significant differences exist between the masculine self-concept ($M = 56.88$) and the androgynous self-concept ($M = 66.44$). Thus, hypothesis 1 was partially supported by the data. Based on the data, level of acceptance to disability differed between those with masculine versus androgynous self-concepts.

Research Hypothesis 2

Hypothesis 2 stated that the level of cognitive functioning will mediate the relationship between gender role conflict and sense of self. Hypothesis 2 must be tested in two steps: (1) assess the bivariate correlations between cognitive functioning (i.e. RAVLT and IA), GRCS, and sense of self (i.e. HISD diff and SoSS), and (2) test for mediation using the Sobel test based on a multiple regression analyses, if significant correlations warranted a mediation analysis. After assessing the intercorrelations between the cognitive functioning variables, GRCS, and the sense of self variables, only RAVLT will be used as a mediator to assess cognitive functioning. In addition, only the SoSS will be utilized to assess sense of self due to their significant correlations with the GRCS. RAVLT was significantly correlated with the GRCS ($r = -.35, p < .01$) but not the SoSS ($r = -.196, p = .013$). However, the GRCS was significantly correlated with SoSS ($r = .45, p < .01$).

First, a multiple regression analysis was conducted to regress GRCS on SoSS, which was significant, $F(1, 58) = 14.84, p < .001$. Then, GRCS was regressed onto the possible mediator, RAVLT, which also significant, $F(1, 58) = 7.97, p = .007$. Lastly, together RAVLT and GRCS were regressed onto SoSS, which was also significant, $F(1, 58) = 7.369, p = .001$. After controlling for RAVLT, GRCS still remained a significant unique predictor of SoSS, and accounting for nearly 18% of the variance in SoSS. However, after controlling for GRCS, RAVLT was no longer a

significant predictor of SoSS. Therefore, RAVLT was not a mediator of the relationship between GRCS and SoSS. Although GRCS is correlated with both RAVLT and SoSS, the RAVLT does not mediate the relationship between GRCS and SoSS. Hypothesis 2 was not supported by the data.

Research Hypothesis 3 and 4

Hypothesis 3 and 4 stated that there will be significant differences of gender role conflict by gender and by race/ethnicity, respectively. An independent *t*-test was initially going to be utilized to assess hypothesis 3. However, a one-way analysis of covariance (ANCOVA) will be utilized to control for the significant correlate of education. Assumptions for the ANCOVA were assessed. There was not a strong correlation with education and gender role conflict. In addition, based on scatterplots of education and GRCS based on gender, it appears that there is a linear relationship, which meets the assumption. In addition, the assumption of homogeneity of regression slopes was assessed, the interaction term of gender with education was not statistically significant, and therefore the assumption of homogeneity was not violated.

A one-way ANCOVA was also conducted to determine differences between gender after controlling for education. The assumptions of homogeneity were violated due to significant differences in education among the ethnic groups. The results of the analyses for the GRCS by gender and race/ethnicity are reported in Table 7 and 8. The *F*-ratio for the main effect of gender reached statistical significance, $F(1, 56) = 4.45, p = .039, \eta^2 = .06$. Therefore, Hypothesis 3 was supported by the data. Males reported greater gender role conflict than females based on the GRCS. However, due to violating the assumptions of homogeneity, a randomized block design ANCOVA was conducted and the *F*-ratio for the main effect of race/ethnicity reached near

statistical significance, $F(2, 55) = 3.12, p = .052$. Therefore, Hypothesis 4 was not supported by the data.

Table 7. Analysis of Covariance of Gender Role Conflict Scale (GRCS) by Gender

| Source of Variation | Type III SS | <i>df</i> | <i>MS</i> | <i>F</i> |
|-----------------------|-------------|-----------|-----------|----------|
| Covariate (Education) | 6232.4 | 1 | 6232.4 | 6.2* |
| Gender | 4488.5 | 1 | 4488.5 | 4.4* |
| Error | 56549.9 | 56 | 1009.8 | |
| Total | 916615.0 | 59 | | |

Table 8. Analysis of Covariance of Gender Role Conflict Scale (GRCS) by Race/Ethnicity

| Source of Variation | Type III SS | <i>df</i> | <i>MS</i> | <i>F</i> |
|---------------------|-------------|-----------|-----------|----------|
| Blocked Education | 5920.6 | 2 | 2960.3 | 3.0 |
| Race/Ethnicity | 6161.6 | 2 | 3080.8 | 3.1 |
| Error | 54366.4 | 55 | 988.5 | |
| Total | 930962.2 | 60 | | |

Research Hypothesis 5 and 6

Hypothesis 5 and 6 stated that there will be significant differences on changes of sense of self (using SoSS and HISD scales) after TBI reported between males and females, in addition between racial/ethnic groups, respectively (See Table 9 through 12). A one-way analysis of covariance (ANCOVA) was utilized to control for the significant correlate of education based on gender. A one-way ANCOVA was also conducted to determine differences between racial/ethnic groups (i.e. Ethnic minorities and Caucasians) after controlling for education. The

F -ratio for the main effect of gender did not reach statistical significance using the SoSS, $F(1, 57) = .012, p = .92$. Statistical significance by gender using the HISD was not reached either, $F(1, 57) = .31, p = .58$. Therefore, Hypothesis 5 was not supported by the data. The F -ratio for the main effect of race/ethnicity did not reach statistical significance, $F(1, 56) = .290, p = .749$. Statistical significance using the HISD was not reached either, $F(1, 57) = .031, p = .86$. Therefore, Hypothesis 6 was supported by the data.

Table 9. Analysis of Covariance of Sense of Self Scale (SoSS) by Gender

| Source of Variation | Type III SS | <i>df</i> | <i>MS</i> | <i>F</i> |
|--------------------------|-------------|-----------|-----------|----------|
| Covariate (Education) | 279.0 | 1 | 279.0 | 5.1* |
| Gender | 0.6 | 1 | 0.6 | 0.01 |
| Error | 3120.9 | 57 | 54.8 | |
| Total | 84295.0 | 60 | | |

Table 10. Analysis of Covariance of Sense of Self Scale (SoSS) by Race/Ethnicity

| Source of Variation | Type III SS | <i>df</i> | <i>MS</i> | <i>F</i> |
|--------------------------|-------------|-----------|-----------|----------|
| Covariate (Education) | 176.3 | 1 | 176.3 | 3.2 |
| Race/Ethnicity | 32.0 | 2 | 16.0 | 0.29 |
| Error | 3089.5 | 56 | 55.2 | |
| Total | 84295.0 | 60 | | |

Table 11. Analysis of Covariance of Head Injury Semantic Differential Scale (HISD) by Gender

| Source of Variation | Type III SS | <i>df</i> | <i>MS</i> | <i>F</i> |
|-----------------------|-------------|-----------|-----------|----------|
| Covariate (Education) | 164.8 | 1 | 164.8 | 0.16 |
| Gender | 309.9 | 1 | 309.9 | 0.31 |
| Error | 57162.1 | 57 | 1002.8 | |
| Total | 72222.0 | 60 | | |

Table 12. Analysis of Covariance of Head Injury Semantic Differential Scale (HISD) by Race/Ethnicity

| Source of Variation | Type III SS | <i>df</i> | <i>MS</i> | <i>F</i> |
|-----------------------|-------------|-----------|-----------|----------|
| Covariate (Education) | 3.9 | 1 | 252.7 | 0.00 |
| Race/Ethnicity | 672.2 | 2 | 336.1 | 0.33 |
| Error | 56799.8 | 56 | 1014.3 | |
| Total | 72222.0 | 60 | | |

Research Hypothesis 7

Hypothesis 7 states that neurocognition and coping style (Avoidant coping) are significant mediators between gender role conflict and sense of self with psychosocial adjustment. This hypothesis was tested using Amos 18.0 and the SEM with Bootstrapping due to small sample size. First, the direct effects of GRCS and SoSS on Psychosocial Adjustment were tested. The direct effects were tested independently with the absence of the mediators (i.e. RAVLT and AC). The direct path of GRCS on Psychosocial Adjustment ($r = .371, p < .05$) was statistically significant. The next step was to add the mediators into the model to test a partially

mediated model testing the effects of RAVLT. The direct path of GRCS on RAVLT ($r = -.285, p = .074$) was near significance and the direct path of RAVLT on Psychosocial Adjustment ($r = -.400, p < .01$) was statistically significant. However, when testing the full mediation effects of RAVLT, the direct paths of GRCS on RAVLT ($r = -.346, p < .05$) and RAVLT on Psychosocial Adjustment ($r = -.32, p < .05$) were statistically significant. The direct path of GRCS on Psychosocial Adjustment ($r = .341, p = .124$) became nonsignificant. Therefore, this suggests that cognitive functioning may fully mediate the relationship between gender role conflict and psychosocial adjustment.

Next, the mediational effects of avoidant coping (AC) on the relationship between GRCS and Psychosocial adjustment were tested. As mentioned above, the direct path of GRCS on Psychosocial Adjustment was statistically significant. The next step was to add the mediator into the model to test a partially mediated model testing the effects of AC. The direct path of GRCS on AC ($r = .550, p = .002$) and the direct path of AC on Psychosocial Adjustment ($r = .493, p = .001$) were statistically significant. Assessing the two-tailed significance of the indirect effects was significant ($p = .001$). Testing the full mediation effects of AC revealed that the direct path of GRCS on AC ($r = -.346, p < .05$) was statistically significant. Although the direct path of GRCS on Psychosocial Adjustment ($r = .341, p = .124$) became nonsignificant, the relationship between AC and Psychosocial Adjustment also became insignificant. Therefore, this suggests that avoidant coping only partially mediate the relationship between gender role conflict and psychosocial adjustment.

Subsequently, the direct effects of SoSS on Psychosocial Adjustment were tested. Again, the direct effects were tested independently with the absence of the mediators (i.e. RAVLT and

AC). The direct path of SoSS on Psychosocial Adjustment ($r = .624, p = .002$) was statistically significant. The next step was to add the mediators into the model to test a partially mediated model testing the effects of RAVLT and AC separately. The direct path of SoSS on RAVLT ($r = -.196, p = .093$) was a trend towards significance and the direct path of RAVLT on Psychosocial Adjustment ($r = -.400, p < .01$) was statistically significant. The direct path of SoSS on AC ($r = .502, p = .002$) was significant and the direct path of AC on Psychosocial Adjustment ($r = .493, p = .001$) was statistically significant. AC appeared to partially mediate the relationship between SoSS and Psychosocial Adjustment ($p = .001$).

However, when testing the full mediation effects of RAVLT, the direct paths of SoSS on RAVLT ($r = -.196, p < .05$) and RAVLT on Psychosocial Adjustment ($r = -.29, p < .05$) were not statistically significant. The direct path of SoSS on Psychosocial Adjustment ($r = .580, p = .001$) was significant. Therefore, this suggests that cognitive functioning does not mediate the relationship between sense of self and psychosocial adjustment. In addition, the direct paths of SoSS on AC ($r = .502, p = .002$) was significant and AC on Psychosocial Adjustment ($r = .23, p < .05$) were not statistically significant, while the direct path of SoSS on Psychosocial Adjustment ($r = .513, p = .002$) was significant. Avoidant coping did not fully mediate the relationship between SoSS and Psychosocial Adjustment.

In summary, the data partially supported the hypothesis that cognitive functioning and avoidant coping were significant mediators in the relationships of gender role conflict and sense of self with psychosocial adjustment. Cognitive functioning fully mediated the relationship between gender role conflict and psychosocial adjustment. In addition, avoidant coping partially mediated the relationship between gender role conflict and psychosocial adjustment.

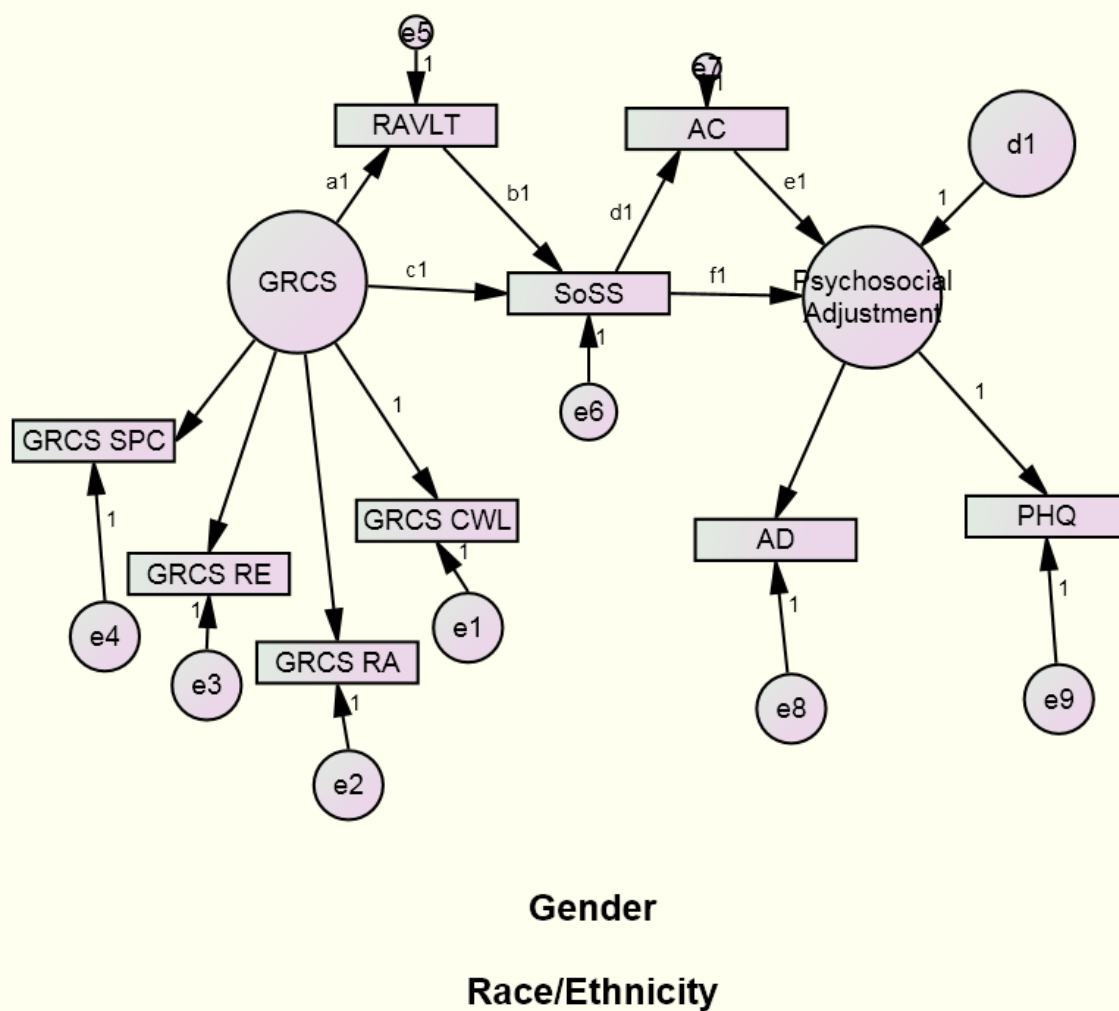
Also, avoidant coping partially mediated the relationship between sense of self and psychosocial adjustment.

Research Hypothesis 8

Hypothesis 8 states that gender and ethnicity will be significant moderators of psychosocial adjustment. This hypothesis was tested using Amos 18.0 and the SEM with Bootstrapping due to small sample size. Moderation testing was employed to address this hypothesis. One model was tested using Gender as a moderator and the second model used race/ethnicity (Ethnic minorities versus Caucasians) as a moderator. A multi-group analysis was conducted. The acceptable values for the model fit indicators are: $\chi^2 > .05$, RMSEA $\leq .05$, NFI $> .90$, CFI $> .90$, GFI $> .90$, and SRMR $> .90$ (Shumacker & Lomax, 2004). Good fit of the data was not achieved and therefore the model should not be further tested. The fit indices were the following: $\chi^2 (24, N = 60) = 60.90, p < .05$, GFI = .817, CFI = .768, NFI = .687, and RMSEA = .161 (90% lower confidence limit = .112; 90% upper confidence limit = .212).

Pathways were evaluated to help guide development of future models of psychosocial adjustment. Gender was not a significant moderator after examining the critical ratios for the differences between the parameters in the model for men and women, which did not reach the critical value of significance at greater than |1.96|. A second analysis was conducted using race/ethnicity as a moderator. The path between GRCS and RAVLT was the only significantly different pathway found between Caucasians and Ethnic Minorities, with a critical ratio equal to 1.981. Racial/ethnic differences may moderate the relationship between learning based on the RAVLT and gender role conflict (GRCS) if tested with larger sample sizes (See Figure 2). Hypothesis 8 was not supported by the data.

Figure 2. Moderated Mediation model of gender and race/ethnicity on learning (RAVLT) and Avoidant Coping (AC) on the relationships between Gender Role Conflict (GRCS) and Sense of Self (SoSS) and Psychosocial Adjustment.



Supplemental Analyses

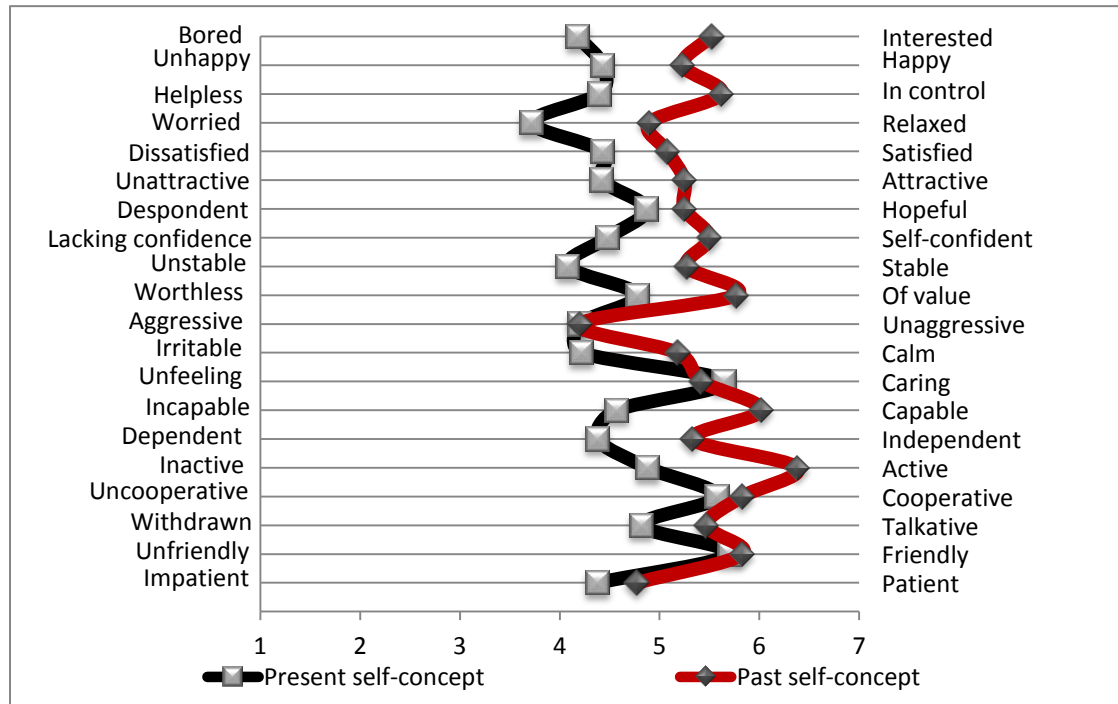
Self-concept

To investigate changes in self after injury, the HISDS scale was further analyzed. HISDS present and past self-concept measures had a normal distribution based the Kolmogorov-Smirnov statistic ($p = .200$). There was one potential outlier for the HISDS past self-concept, but its inclusion did not significantly affect the overall mean of the measure. A paired-samples t -test was conducted to evaluate if a significant change existed from pre- and post-injury self-concept scores on the HISDS. There was a statistically significant decrease in HISDS scores from pre-injury ($M = 107.82$, $SD = 22.47$) to post-injury [$M = 92.18$, $SD = 23.58$, $t(59) = 3.88$, $p < .0005$], with a large effect size ($\eta = .20$). Figure 3 below provides a semantic differential graph of the mean pre-injury and post-injury HISDS scores for the total sample. Further analyzing each of the 20 adjective pairs revealed that fourteen out of the 20 adjective pairs reached statistical significance. Overall, participants believed that they were more interested, happy, in control, relaxed, satisfied, attractive, self-confident, and stable, of value, calm, capable, independent, active, and withdrawn before sustaining their TBI.

Psychosocial adjustment

Three stepwise multiple regression analyses were conducted to determine which predictors can explain the most variance in the psychosocial adjustment measures (i.e. AD, PHQ, GAD). In the first step, HISD accounted for a significant amount of variance in acceptance of disability (AD) [$R^2 = .273$, $F(1, 54) = 21.65$, $p < .001$]. In the second step, RAVLT accounted for a significant amount of additional variance in acceptance of disability (AD), after controlling for

Figure 3. Semantic differential graph of pre-injury and post-injury self-concept scores from the HISD



the variance by HISD ($R^2 = .12$, $F(1, 53) = 10.33$, $p < .01$). In the last step, SoSS accounted for a significant amount of additional variance in acceptance of disability (AD), after controlling for the variance by HISD and RAVLT ($R^2 = .07$, $F(1, 52) = 6.49$, $p < .05$).

The unique predictors of depression were assessed. In the first step, SoSS accounted for a significant amount of variance in depression (PHQ) [$R^2 = .276$, $F(1, 54) = 20.58$, $p < .001$]. In the second step, HISD accounted for a significant amount of additional variance in depression (PHQ), after controlling for the variance by SoSS ($R^2 = .12$, $F(1, 53) = 10.23$, $p < .01$). In addition, the unique predictors of anxiety were assessed. In the first step, SoSS accounted for a significant amount of variance in anxiety (GAD) [$R^2 = .322$, $F(1, 54) = 25.70$, $p < .001$]. In the second step, HISD accounted for a significant amount of additional variance in anxiety (GAD), after

controlling for the variance by SoSS ($R^2 = .11$, $F(1, 53) = 9.99$, $p < .01$). In the last step, injury severity (ER GCS) accounted for a significant amount of additional variance in anxiety (GAD), after controlling for the variance by SoSS and HISD ($R^2 = .05$, $F(1, 52) = 4.78$, $p < .05$).

Grounded Theory of Study: *Reconstructing Self after TBI*

Using both the qualitative data and the quantitative data, this study was developed to understand the impact of gender role conflict and self-identity on psychosocial adjustment to TBI. In addition, based on the data a theory was developed to describe and explain how changes or loss of self may produce emotional distress and difficulties with acceptance of TBI. The main social process that emerged from the data was the participants' description of trying to regain their pre-injury identity or "reconstructing self" since their TBI. As a result of the TBI, participants acknowledged the physical, cognitive, emotional, social, and behavioral consequences frequently occurring after TBI. Due to such consequences of injury, there may be a weakened sense of self or *achieved* self. Based on the data, whether someone has a weakened or achieved sense of self can be determined by whether the changes after injury directly impacts how they view themselves.

Several facilitators were mentioned that supported the process of reconstructing self after TBI, which included religiosity or spirituality, having an appreciation for life and positive self-concept, having empathy or compassion for other, maintaining pre-injury roles, and having social support from friends and family. Barriers to identity reconstruction that emerged from the data were feelings of inadequacy, role changes, fear, uncertainty, lack of control, and

isolation. Body image changes negatively impacted self-identity for only the women as such issues were not mentioned by any of the male participants.

In conclusion, several key areas of interest must be addressed as persons with TBI adjust to the consequences of injury and begin the dynamic path of *Reconstructing Self after TBI*. The fears, uncertainties, and loss of autonomy hinder their ability to maintain their pre-injury sense of self or reconstruct a new self or a self that is close to their pre-injury self.

Credibility and Trustworthiness: Quality Control of the data

There are six key strategies enhance the quality of the results of the data: prolonged engagement, triangulation of data, peer debriefing, member checking, negative case analysis, and audit trail (Padgett, 2008). Prolonged engagement was achieved due to the researcher's ten years of experience working with persons with TBI and conducting qualitative interviews and quantitative assessment with them (See Appendix E). Researcher has developed trust and rapport with study participants, as did the research assistant. Triangulation of the data occurred through the use of multiple methods of data collection to assess gender role conflict, self-identity, and psychosocial adjustment to TBI. In addition, due to the multiple data sources the results of the study were able to determine how they complement or corroborate each other and enhance the accuracy of the study results.

In addition, peer debriefing was done by maintaining regular contact with the dissertation chair and committee members. Also, having another peer with equivalent amount of experience who is removed from the data collection process of the study, helped to maintain

some levels of quality control and assist the researcher as needed. In addition, member checking was frequently done, not only by clarifying information from the research participants but also to seek verification of the interpretation of the results of the study. Negative case analysis was conducted on research participants who did not identify any changes to self after injury. One participant in particular believed that since so much time has passed she was able to resume her pre-injury activities and did not identify a change in her self-identity. However, she did acknowledge that in the beginning she also identified role changes after injury. Her greatest support or belief regarding the reason why she is doing so well is because of her religious beliefs and spirituality. She emphasized throughout the interview that God was the main reason why she was about to regain self. Lastly, an audit trail was documented throughout the analysis and interpretation of the results, which includes decisions made and steps taken.

In summary, self-identity and changes in self are key factors related to acceptance of TBI and emotional functioning after injury. One's cognitive ability may mediate the relationship between gender role conflict and psychosocial adjustment to TBI. Although no racial/ethnic or gender differences based on self-identity were identified in this study, males reported greater gender role conflict than female participants. In addition avoidant coping partially mediates the relationship between psychosocial adjustment to TBI and self-identity, and gender role conflict.

CHAPTER 5

DISCUSSION

After experiencing a traumatic brain injury, many individuals experience a change in their gender role conflict and sense of self. The study identified several key themes to understanding the experiences of persons with TBI in regards to gender role conflict and sense of self. With regards to gender role conflict, the following key themes were identified: Roles, Feelings of Inadequacy, Fear and Isolation, Body Image, Relationships, and Identity. Persons with TBI frequently mentioned how after the TBI, they are not able to resume their previous roles, such as provider, parent, and spouse.

Role changes frequently occur after injury, which may impact overall stress and health of persons with TBI and their caregivers (Hallett, Zasler, Maurer, & Cash, 1994; Leathem, Heath, & Wooley, 1996). Several identified that they lacked many aspects of feeling like a male or female. Often mentioned, this inadequacy was due to changes in their identity, body image, and relationships. Feelings of inadequacy have also been identified in other qualitative research studies using persons with TBI (Lezak, 1988). Feeling of inadequacy is also related to depressive symptoms after TBI (Ownsworth & Oei, 1998). The idea of being a male or female and the roles associated with their maleness or femaleness impacted their overall identity and how they were able to adjust to the consequences of the TBI.

With regards to identity or sense of self after injury, there was a mixture of participants who did have a change in their sense of self despite changes to other aspects of their lives after injury. This was termed *achieved self*, being able to know who you are and being able to be resilient and maintain one's sense of self or identity after injury. Conversely, there were several

individuals who were not able to maintain their pre-injury identity after TBI, which was termed *weakened self*. Many of the themes identified from the qualitative interviews tap into individuals fears, uncertainties, and lack of control. There is an overwhelming uncertainty that regarding their recovery, abilities, and whether or not they will be any way close to their pre-injury self. Uncertainty has been identified as a key area affecting the well-being of individuals with chronic illness or disability (Chen, Miller, Seo, & Mendoza, 2010). Nearly half of the participants identified physical, cognitive, emotional, and social consequences to injury that have caused this idea of a weakened sense of self. Although several of these factors may have hindered participants ability to regain their pre-injury self or reconstruct a new self, the consequences of the TBI was able to positively impact many of the participants.

Many stated that they wanted to help others and gained a new insight into having a disability, which resulted in a new empathy for persons with disabilities. In addition, participants frequently mentioned that they gained a deeper appreciation for life and no longer took life for granted. Also, some noticed that they have an improved or positive self-concept now in comparison to their pre-injury beliefs about self. Lastly, the role of religion and spirituality in the life of a person with TBI positively impacted their sense of self after injury. Majority of the participants were of Christian faith and they acknowledged how God gave them a second chance and now feel that they have a purpose in life that may not have been noticed before.

Gender role conflict, acceptance of disability, and emotional adjustment were hypothesized to be different based on the person with injury perceived gender role self concept. This hypothesis was partially supported by the data. Acceptance of disability was statistically

different between those who were androgynous in comparison to those who have a masculine gender role self concept. Androgynous individuals had an overall greater acceptance of disability than those who have a masculine gender role self concept. This is in line with the literature, as it is believed that individuals who are androgynous are able to be flexible in their gender role identity (Cheng, 2005). These qualities allow an individual to have an improved psychosocial adjustment. However, there was no significant differences found between gender role self concept and gender role conflict, level of depression, and level of anxiety.

This study also aimed to investigate the role of cognitive functioning as a mediator in the relationship between gender role conflict and sense of self. Also, the hypothesis was not proved with the data that cognitive functioning is a mediator. The data does show that there is a significant relationship with a person's cognitive abilities, and their gender role conflict and how it impacts a person's sense of self after injury. Even after controlling for cognitive abilities, gender role conflict was significantly related to one's sense of self. The greater the gender role conflict was associated with a weaker sense of self. This was also apparent based on the interviews of the persons with injury. Several participants acknowledged how their gender role and the change in their role impact their identity as a person and also as a male or female.

Gender role conflict was different for males and females but not by racial/ethnic groups in this study. Males tended to report greater conflict than females. However, this may be due to the history behind gender role conflict. It stemmed from the investigation of the psychology of men and the conflict in roles by men. It is possible that the measure of gender role conflict does not really address the issues related to role conflict for women. Although there were no significant differences between the racial/ethnic groups in regards to gender role conflict after

controlling for education differences, there was a trend for racial/ethnic differences. Based on my experience working with ethnic minorities with TBI, I would hypothesize that differences do exist between Whites and racial/ethnic minorities, particularly with the Hispanic persons with TBI. As one participant mentioned how Hispanic men are known as being macho, gender role conflict due to inability to work and provide for their family after injury may affect their sense of self. In addition, how they respond to this change may impact their overall adjustment to TBI.

There were neither gender differences nor ethnic/racial differences found in this study based on measures of sense of self. This may be due to the fact that overall as a whole the sample has a weakened sense of self and there are no specific differences among the groups, after controlling for education. As the correlation analysis revealed, lesser education resulted in a weaker sense of self or identity. As a sample, persons with TBI have an overall decreased or weakened sense of self since after their injury, which may make it difficult to identify differences based on sense of self. The hypotheses that there would be ethnic/racial and gender differences on sense of self were not supported by the data.

Lastly, the overall model to investigate how avoidant coping and cognitive abilities mediate the relationships between gender role conflict and sense of self on psychosocial adjustment was partially supported by the data. Cognitive functioning fully mediated the relationship between gender role conflict and psychosocial adjustment to TBI. Therefore, the relationship between gender role conflict and psychosocial adjustment is dependent on whether the person with TBI has intact or decreased cognitive abilities. Avoidant coping partially influence how identity and psychosocial adjustment interacts. Therefore, there are other key

variables that may be mediating the relationship between self-identity and psychosocial adjustment.

In addition, gender role conflict may mediate the relationship between sense of self and adjustment. However, this was not supported by the data. In addition, the hypothesis that race/ethnicity and gender would be significant moderators of psychosocial adjustment was not supported by the data. Further research that includes larger samples of persons with TBI need to be conducted to determine if there are outcome differences by gender or race/ethnicity, specifically regarding sense of self and gender role conflict.

Based on the supplemental analyses, overall the participants endorsed having a weak sense of self and/or changes to self from pre-injury to post injury. Previous qualitative and quantitative data have identified the presence of a loss of sense of self or self-identity after TBI. This may explain why there were no significant gender differences with regard to self-identity, as there is no variability. In addition, overall self-identity was a significant predictor of acceptance of TBI, depression and anxiety symptoms. Surprisingly, gender role conflict was not a significant predictor of psychosocial adjustment after accounting for other key variables, such as self-identity, injury severity, and time post injury. Although gender role conflict was not a significant predictor, it is still moderately related to acceptance of TBI and emotional functioning.

This the first mixed-method study in the field of traumatic brain injury to assess the perspectives of persons with TBI and how the consequences of injury may impact their role functioning and self-identity after injury, which may also have a direct impact on acceptance to TBI and emotional functioning. The results of this study have implications which go beyond

social work practice and research and help guide the field of neuropsychology, other mental health professions and health service delivery.

Social Work Implications

Social Work practice. The results of this research may guide social work practice by identifying ways to help improve gender role conflict and altered sense of self and target treatment during the psychosocial adjustment process for persons with TBI. The internal factors identified (i.e. cognitive functioning, sense of self, coping styles, and demographic characteristics) may inform individualized treatment recommendation for clients with TBI and help identify barriers to treatment and/or service utilization. In addition, it is helpful to identify the contextual factors that may help facilitate or impede the adjustment process. This study was able to identify that gender role conflict and self-identity are related to psychosocial adjustment. Through the use of the qualitative data, addressing the fears, uncertainty, and losses associated with TBI may help improve the emotional functioning of persons with TBI, specifically decreasing depression and anxiety symptoms while also improving their overall acceptance to TBI.

By assessing the role of gender role conflict during the psychosocial adjustment process for clients with TBI, interventions may be developed for not only the person with injury but their caregivers. Interventions may be developed to help individuals successfully regain their pre-injury roles and help caregivers be able to adjust to the negative consequences associated with injury. It is important for persons with TBI and their families to not place unrealistic demands on the person with TBI during their adjustment process. Such inadequacies or losses

have negative consequences on the reconstruction of self after injury and regaining pre-injury roles.

Furthermore, gender differences were only applicable to gender role conflict after injury. Gender and ethnicity did not moderate the adjustment process in this sample of persons with TBI. However, based on the qualitative data, there are overall differences in males and females in how they express their gender role identity and conflicts that may arise after injury that negatively affect their psychosocial adjustment to TBI. In addition, cultural differences may impact how racial/ethnic groups differ from their white counterparts. Although this was not supported by the data, future investigations may identify racial/ethnic differences in gender role expression, self-identity, and how one adjusts to TBI.

Social Work policy. There is a need for more hospital- and community-based programs for persons with TBI. Certain groups may not receive the rehabilitation services needed to help them recover from the TBI. Funding needs must be addressed to help develop permanent programs to help address the needs of clients, specifically with handling role changes, loss of autonomy, and the fear and uncertainties that may occur after injury. Therefore, there is a need for inpatient programs and community-based outpatient programs that address all stages of the recovery process. Majority of individuals from ethnic minority backgrounds or socioeconomically disadvantaged backgrounds do not receive needed cognitive rehabilitation post injury; therefore, external funding should be sought to help reduce the health disparity caused by limited financial resources.

Social Work research. This research will lay the groundwork for further development of the theory of reconstructing self after injury. Since persons with TBI may have self-blame or

become highly self-critical of their abilities after injury and start making social comparisons, which often result in emotional distress, future research investing the implementation of compassion focused therapy to help individuals to become less self-critical and have the same or more compassion like the compassion they have for others. As this study identified that persons with injury become more benevolent, compassionate, and emphatic for others, especially persons with disabilities.

Limitations

With every study, there are limitations based on factors such as sample size, sampling methods, sample, data collection instruments, and general threats to validity. In this study, there are limitations based on sampling. The sample was smaller than what was initially proposed. Although the sample was diverse on nearly every demographic characteristic, the results may be biased since there are a large number of persons with low income. However, this is often expected with samples with TBI. This may be due to the fact that many of the participants are not engaging in productive activity since injury and are only receiving social security benefits or etc and therefore, are considered low income. In addition, recruitment was based on individuals who were available for participation and who have received care at a level one trauma center in Houston. There are over 1,000 participants who have agreed for future contact but only 61 of them were recruited and completed the study. Limited funding and resources were the many reasons for low sample recruitment in comparison to the overall numbers of available participants. However, this study provides pilot data for larger projects identifying ways to improve adjustment to TBI by considering the issues found in this study on gender role conflict and changes in sense of self.

Regarding measurement, some of the measures chosen have shown inconsistent reliability, particularly the sense of self measure (SoSS). The measures have not been normed with TBI samples nor with ethnic minority populations. Although this is a limitation, the use of these measures and a diverse sample provided descriptive statistics and reliability measurements that would add to scientific literature. Future research may utilize new or existing measures that capture changes to self-identity. Unfortunately, this study excluded individuals who were non-English or non-Spanish speaking. Although there is an increasing number of Asians in Houston, there are very few Asians who sustain a traumatic brain injury to make appropriate recommendations as a result of their inclusion in this study. After testing this model, future research may include Asians by using a multi-center data collection approach, where there are greater numbers of Asians sustaining traumatic brain injuries (e.g. California and Washington).

Future Directions

Future plans are to develop interventions addressing gender role conflict and weakened sense of self after injury and its impact on psychosocial adjustment. I plan to develop an intervention program to address the loss of self in persons with brain injury and then evaluate its effectiveness using a randomized controlled trial. For example, interventions addressing role strain, changes in identity, promoting positive coping skills, family educational interventions and the development of mentoring programs to help improve social skills and increase social networks may improve the adjustment to injury in persons with TBI. This work will help improve the practice of rehabilitation professionals who are committed to improving the quality

of life of persons with TBI by giving them the basis to make changes in their clinical practice to be able to identify role changes and a weakened self after injury.

In addition, future research may investigate the different social roles and expectations, or lack thereof, placed on individuals with disabilities. This study only assessed gender role conflict and gender roles. However, future research should identify other measures of social roles and expectations to identify how role changes may impact psychosocial adjustment to TBI. Stigma is a major concern after TBI and future research may address the concerns of discrimination and stigma faced by persons with TBI from various samples (e.g. family, friends, employers, teachers, students, and general public) and how it may impact self-identity and psychosocial adjustment to TBI.

Lastly, future research can include longitudinal studies to identify the trajectory of possible changes in self-identity through the entire adjustment process. Testing this study's theory on reconstructing self can be done with testing other samples of persons with chronic illnesses or disabilities, such as stroke, spinal cord injury, and cancer populations to confirm its transferability in other populations. Through the dynamic process of reconstructing self, persons with TBI may have improved acceptance of the disability and decreased emotional distress to improve the overall quality of life for persons with TBI.

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Appendix A
IRB Approval Letters



We will create a healthier community and be one of America's best community-owned healthcare systems



Research and Sponsored Programs
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June 29, 2012

Angelle Sander, MD
Baylor College of Medicine
Department of PM&R

RE: H-29571: Impact of Neurocognition, Gender Role Conflict, and Self-Identity on
Psychosocial Adjustment to Traumatic Brain Injury

APPROVAL VALID FROM: 6/29/12 TO 2/6/13

Location: Ben Taub General Hospital

Dear Dr. Sander:

The Harris County Hospital District is pleased to inform you that the research protocol named above has been approved for implementation. The study may not continue after the approval period without additional IRB and HCHD review and approval for continuation. It is your responsibility to assure that this study is not conducted beyond the expiration date.

The Principal Investigator must receive approval from the IRB and HCHD before initiating any changes, including those required by the sponsor, which would affect human subjects, e.g. changes in methods or procedures, numbers or kinds of human subjects, or revisions to the informed consent document or procedures. The addition of co-investigators must also receive approval from the IRB and HCHD.

Attached is the approved and validated consent form. You must discard all previous informed consent documents being used and replace them with this stamped validated version. Please be aware that only copies of the appropriately dated and stamped IRB and HCHD approved informed consent document can be used when written informed consent is required.

Sincerely,

A handwritten signature in black ink that reads 'Sara Ruppelt'.

Sara Ruppelt, PharmD
Manager, Research and Sponsored Programs
Harris County Hospital District

cc: Kenneth Mattox, MD
Jeff Webster, Administrator
Dana Bjarnason, CNO
Rodney Arndt, Manager
Tina Strawn, Director
Research Office

Human Approval Letter

Page 1 of 1

June 12, 2012

ANGELLE SANDER
BAYLOR COLLEGE OF MEDICINE
PHYSICAL MEDICINE & REHABILITATION



Baylor College of Medicine
Office of Research
One Baylor Plaza, 630D
Houston, Texas 77030
Phone: (713) 798-6970
Fax: (713) 798-6990
Email: irb@bcm.tmc.edu

**H-25571 - IMPACT OF NEUROCOGNITION, GENDER ROLE CONFLICT, AND SELF-IDENTITY ON
PSYCHOSOCIAL ADJUSTMENT TO TRAUMATIC BRAIN INJURY**

APPROVAL VALID FROM 5/14/2012 TO 2/6/2013

Dear Dr. SANDER

The Institutional Review Board for Human Subject Research for Baylor College of Medicine and Affiliated Hospitals (BCM IRB) is pleased to inform you that the research protocol and consent form(s) named above were approved.

The study may not continue after the approval period without additional IRB review and approval for continuation. You will receive an email renewal reminder notice prior to study expiration; however, it is your responsibility to assure that this study is not conducted beyond the expiration date.

Please be aware that only IRB approved informed consent forms may be used when written informed consent is required.

Any changes in study or informed consent procedure must receive review and approval prior to implementation unless the change is necessary for the safety of subjects. In addition, you must inform the IRB of adverse events encountered during the study or of any new and significant information that may impact a research participants' safety or willingness to continue in your study.

The BCM IRB is organized, operates, and is registered with the United States Office for Human Research Protections according to the regulations codified in the United States Code of Federal Regulations at 45 CFR 45 and 21 CFR 55. The BCM IRB operates under the BCM Federal Wide Assurance No. 00000226, as well as those of hospitals and institutions affiliated with the College.

Sincerely yours,

VERNON R SUTTON, M.D., B.S.

Institutional Review Board for Baylor College of Medicine and Affiliated Hospitals



June 14, 2012



**MEMORIAL HERMANN HEALTHCARE SYSTEM
APPROVAL FOR
TIRR MEMORIAL HERMANN**

Thank you for choosing Memorial Hermann as your service provider for this research study.

IRB ID: H-29571 PRINCIPAL INVESTIGATOR: Angelle Sander, PhD
STUDY TITLE: IMPACT OF NEUROCOGNITION, GENDER ROLE CONFLICT, AND SELF-IDENTITY ON PSYCHOSOCIAL
ADJUSTMENT TO TRAUMATIC BRAIN INJURY
NUMBER OF SUBJECTS: 200

Approval is hereby granted by Memorial Hermann Healthcare System to initiate this research study at the Memorial Hermann – Texas Medical Center location. This approval is subject to the Principal Investigator's acceptance of the following stipulations.

STUDY-SPECIFIC STIPULATIONS

1. Please remember to acknowledge TIRR Memorial Hermann in any publications resulting from this study, and provide a copy of the publication to the Executive Director of the Memorial Hermann Clinical Innovation & Research Institute (Cheryl.Chana@dmemorialhermann.org). The methods of acknowledgement may include:
 - a. Memorial Hermann – Texas Medical Center as an author's affiliation;
 - b. mention in an "acknowledgement" section; or
 - c. as a footnote.

Please sign and return a copy of this letter to the Memorial Hermann Clinical Innovation & Research Institute, c/o Memorial Hermann Hospital, Mailbox 50, via FAX (713) 704-5124 or scanned pdf file to angie.wesley@memorialhermann.org to indicate your acceptance of our terms and policies (guidelines attached).

This study may not be initiated until the letter is signed and returned to the Memorial Hermann Clinical Innovation & Research Institute.

If you have questions or need additional information, please contact the Memorial Hermann Clinical Innovation & Research Institute at (713) 704-4226.

APPROVED:

Cheryl M. Chanaud
EM14/12

Cheryl M. Chanaud, PhD, CCRP
System Executive Director, Research
Memorial Hermann Healthcare System

Date

ACCEPTANCE:

Angelle Sander 6-18-12

Angelle Sander, PhD
Principal Investigator

Date

cc:

Monique Pappadis - Co-Investigator
Patrick Leung - Co-Investigator
Danielle Parrish - Co-Investigator
Maxine W. Epstein - Co-Investigator
Mark Sherer, PhD - Co-I, Director of Research TIRR
Gerard Francisco MD - Chief Medical Officer TIRR
Patricia Tooley, RN, CIPP - System Executive for Privacy Compliance



February 17, 2014



ANGELLE SANDER
BAYLOR COLLEGE OF MEDICINE
PHYSICAL MEDICINE & REHABILITATION

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**H-29571 - IMPACT OF NEUROCOGNITION, GENDER ROLE CONFLICT, AND SELF-IDENTITY ON
PSYCHOSOCIAL ADJUSTMENT TO TRAUMATIC BRAIN INJURY**

APPROVAL VALID FROM 2/17/2014 TO 2/3/2015

Dear Dr. SANDER

The Institutional Review Board for Human Subject Research for Baylor College of Medicine and Affiliated Hospitals (BCM IRB) is pleased to inform you that the research protocol and consent form(s) named above were approved.

The study may not continue after the approval period without additional IRB review and approval for continuation. You will receive an email renewal reminder notice prior to study expiration; however, it is your responsibility to assure that this study is not conducted beyond the expiration date.

Please be aware that only IRB-approved informed consent forms may be used when written informed consent is required.

Any changes in study or informed consent procedure must receive review and approval prior to implementation unless the change is necessary for the safety of subjects. In addition, you must inform the IRB of adverse events encountered during the study or of any new and significant information that may impact a research participants' safety or willingness to continue in your study.

The BCM IRB is organized, operates, and is registered with the United States Office for Human Research Protections according to the regulations codified in the United States Code of Federal Regulations at 45 CFR 46 and 21 CFR 56. The BCM IRB operates under the BCM Federal Wide Assurance No. 00000286, as well as those of hospitals and institutions affiliated with the College.

Sincerely yours,

A handwritten signature in blue ink that reads "Gabriel Habib". The signature is written in a cursive style.

GABRIEL HABIB, M.D.
Institutional Review Board for Baylor College of Medicine and Affiliated Hospitals



UNIVERSITY of HOUSTON
DIVISION OF RESEARCH

February 21, 2014

Ms. Monique Pappadis
c/o Dr. Patrick Leung
Child & Family for Innovative Research

Dear Ms. Monique Pappadis,

The University of Houston Committee for the Protection of Human Subjects (1) reviewed your research proposal entitled "IMPACT OF NEUROCOGNITION, GENDER ROLE CONFLICT, AND SELF-IDENTITY ON PSYCHOSOCIAL ADJUSTMENT TO TRAUMATIC BRAIN INJURY" on February 21, 2014, according to institutional guidelines.

The Committee has given your project approval to begin the day following the current protocol's expiration, or immediately if already expired.

Reapplication will be required:

1. Annually
2. Prior to any change in the approved protocol
3. Upon development of unexpected problems or unusual complications

Thus, if you will still be collecting data under this project on **February 1, 2015**, you must reapply to this Committee for approval before this date if you wish to prevent an interruption of your data collection procedures.

If you have any questions, please contact Alicia Vargas at (713) 743-9215.

Sincerely yours,



Dr. Daniel O'Connor, Chair
Committee for the Protection of Human Subjects (1)

PLEASE NOTE: (1) All subjects must receive a copy of the informed consent document. If you are using a consent document that requires subject signatures, remember that signed copies must be retained for a minimum of 3 years, or 5 years for externally supported projects. Signed consents from student projects will be retained by the faculty sponsor. Faculty are responsible for retaining signed consents for their own projects; however, if the faculty leaves the university, access must be possible for UH in the event of an agency audit. (2) Research investigators will promptly report to the IRB any injuries or other unanticipated problems involving risks to subjects and others.

Protocol Number: 12249-01

Full Review X Expedited Review

316 E. Cullen Building Houston, TX 77204-2015 (713) 743-9204 Fax: (713) 743-9577

COMMITTEES FOR THE PROTECTION OF HUMAN SUBJECTS

Appendix B
Informed Consent Forms (English and Spanish)

CONSENT FORM

Institutional Review Board for Baylor College of Medicine and Affiliated Hospitals Consent Form for Person with TBI (English)

H-29571 - IMPACT OF NEUROCOGNITION, GENDER ROLE CONFLICT, AND SELF-IDENTITY ON PSYCHOSOCIAL ADJUSTMENT TO TRAUMATIC BRAIN INJURY

Background

You are being asked to participate in this study because you have a traumatic brain injury (TBI). After a TBI, many people may notice changes in their bodies, in the way they think, or in the way they feel and act. These changes may affect different areas of your life, such as returning to work or having good relationships. It is important for us to better understand the changes after injury and how to adjust to these changes. This will help rehabilitation professionals develop programs to improve the quality of life of persons with TBI. This research is being done by Monique Pappadis under the co-supervision of Dr. Patrick Leung, at the University of Houston and Dr. Angelle Sander at Baylor College of Medicine and TIRR Memorial Hermann.

This research study is sponsored by Baylor College of Medicine, Memorial Hermann Hospital System, and the University of Houston

Purpose

The purpose of this study is to understand how individuals adjust to TBI and what affects their adjustment. Another purpose of this study is to determine whether people adjust differently based on their gender and/or race/ethnicity.

Procedures

The research will be conducted at the following location(s): Baylor College of Medicine, HCHD: Harris County Hospital District, HCHD: Harris County Hospital District Ben Taub, Memorial Hermann Hospital System, TIRR: The Institute for Rehabilitation and Research, University of Houston.

If you agree to participate in this study, we will ask you to give us permission to obtain your medical records from the hospital where you received care for your injury. Your name, date of birth, address, phone number, and social security number (if applicable) are needed to obtain medical records from hospitals. The following information will be obtained from your medical record and recorded specifically for this project: admission and discharge dates, type of TBI (how it was caused and how severe it was); CT/MRI results; and documentation of loss of consciousness. You will be interviewed in your home by a research staff member at a time that is convenient for you. If you do not feel comfortable with the researcher coming to your home, you can go to the research center to complete this study. During the visit, you will be asked to complete an interview to share your experience with having a TBI. You will also complete tests of

thinking abilities (such as memory and concentration). You will also complete questionnaires about your injury, how you view yourself, your social roles (behaviors and responsibilities you have in social situations), how you deal with problems since your injury, and how you feel since after your TBI. You may be selected to participate in a recorded interview to see how you view yourself after injury. However, you may choose not to participate in the recorded interview. All recordings will be kept confidential and will not include information that is associated with you, such as your name, date of birth, or address. You will only be identified by a research participant number. It is estimated that the recorded interview will take approximately 30 minutes to complete. Completing the tests on thinking abilities and the questionnaires will take approximately 1 to 1.5 hours. Therefore, it is estimated that this study will take approximately 1.5 to 2 hours to complete. However, it may take more or less time than what is estimated.

The interview will consist of questions about how you view yourself since after your injury, any changes you have noticed, and specific goals you have. The purpose of recording this interview is to make sure that the researchers can remember everything that you say and can correctly understand your experiences. It is possible that you may be contacted by phone after the initial interview to clarify information. Again, your name and other identifying information will not be mentioned during the recorded interview. All interviews are confidential and password protected. We will keep the recorded interviews until the study is over, and will destroy them at the end of the study. Choosing not to have your interview recorded will not affect your participation in this study.

Please indicate below if you agree to have your interview(s) recorded:

☐ I agree to have my initial and follow-up interviews recorded.

☐ I agree that the recorded interview(s) can be used in publication/presentations.

☐ I do not agree that the recorded interview(s) can be used in publication/presentations.

☐ I do not wish to have any interviews recorded.

Research related health information

You can see and get a copy of your research related health information. Your research doctor may be able to provide you with part of your information while the study is in progress and the rest of your information at the end of the study.

Potential Risks and Discomforts

There is minimal risk or discomfort from participating in this study. Every effort will be made to conduct the assessment and interview at a time that is convenient for you. You will be given breaks as necessary during the assessment. You may experience frustration or fatigue while completing interviews or questionnaires for this study. However, every effort will be made to minimize any discomfort you may experience. If you experience any emotional discomfort when answering questions, a psychologist will

be available either in person or over the phone. If needed, you will also receive a referral for mental health services and be given information on services that may help you. Because some protected health information is obtained for this study, there is also a possible risk of loss of confidentiality. However, all information obtained during the interview will be kept confidential and not released to anyone not associated with the study. Information will be kept in locked file cabinets and all electronic data will be stored in password protected databases.

Study staff will update you in a timely way on any new information that may affect your decision to stay in the study.

Potential Benefits

The benefits of participating in this study may be: to share your experiences after the injury and how it has affected your life. You may benefit from asking questions regarding your injury and being referred for appropriate services as needed. You may also benefit from receiving information on services that may help you, such as transportation, medical, financial, and mental health services. This research may help other researchers better understand how individuals adjust to TBI and what factors are important in improving adjustment. This understanding may lead to new and better treatments to help individuals adjust to TBI. In addition, treatments to meet the needs of women, men, and different racial/ethnic groups may be developed. However, you may receive no benefit from participating.

Alternatives

You may choose to not participate in this study.

Subject Costs and Payments

You will not be asked to pay any costs related to this research.

However, you will receive \$30.00 after completing all tests, interviews, and questionnaires associated with this study.

Subject's Rights

Your signature on this consent form means that you have received the information about this study and that you agree to volunteer for this research study.

You will be given a copy of this signed form to keep. You are not giving up any of your rights by signing this form. Even after you have signed this form, you may change your mind at any time. Please contact the study staff if you decide to stop taking part in this study.

If you choose not to take part in the research or if you decide to stop taking part later, your benefits and services will stay the same as before this study was discussed with

you. You will not lose these benefits, services, or rights.

Your Health Information

We may be collecting health information that could be linked to you (protected health information). This protected health information might have your name, address, social security number or something else that identifies you attached to it. Federal law wants us to get your permission to use your protected health information for this study. Your signature on this form means that you give us permission to use your protected health information for this research study.

If you decide to take part in the study, your protected health information will not be given out except as allowed by law or as described in this form. Everyone working with your protected health information will work to keep this information private. The results of the data from the study may be published. However, you will not be identified by name.

People who give medical care and ensure quality from the institutions where the research is being done, the sponsor(s) listed in the sections above, representatives of the sponsor, and regulatory agencies such as the U.S. Department of Health and Human Services will be allowed to look at sections of your medical and research records related to this study. Because of the need for the investigator and study staff to release information to these parties, complete privacy cannot be guaranteed.

The people listed above will be able to access your information for as long as they need to, even after the study is completed.

If you decide to stop taking part in the study or if you are removed from the study, you may decide that you no longer allow protected health information that identifies you to be used in this research study. Contact the study staff to tell them of this decision, and they will give you an address so that you can inform the investigator in writing. The investigator will honor your decision unless not being able to use your identifiable health information would affect the safety or quality of the research study.

The investigator, ANGELLE SANDER, and/or someone he/she appoints in his/her place will try to answer all of your questions. If you have questions or concerns at any time, or if you need to report an injury related to the research, you may speak with a member of the study staff: ANGELLE SANDER at 713-797-7101 and/or MONIQUE PAPPADIS at 713-797-7107. You may also contact PATRICK LEUNG, faculty sponsor at 713-743-8111.

Members of the Institutional Review Board for Baylor College of Medicine and Affiliated Hospitals (IRB) can also answer your questions and concerns about your rights as a research subject. The IRB office number is (713) 798-6970. Call the IRB office if you would like to speak to a person independent of the investigator and research staff for complaints about the research, if you cannot reach the research staff, or if you wish to talk to someone other than the research staff.

We will be accessing your Memorial Hermann medical record and collecting portions of these data to include name, date of birth, address, phone number, type of TBI (how it was caused and its severity); CT/MRI results; and documentation of loss of consciousness for the research study.

This authorization to release your protected health information will not expire.

The results of the data from the study may be published. However, you will not be identified by name or other identifiable information.

Once the study is completed and there is no longer a need for your identifiable information, it will be destroyed.

Your signature below indicates that you have read the above and authorize the staff of Memorial Hermann to disclose such information referenced above. You have the right to withdraw this authorization in writing at any time, except to the extent that action has been taken during the period of authorization. You have also been informed that when this information is used or disclosed in accordance with this authorization, it may be subject to re-disclosure by the researcher and may no longer be protected.

In the event of injury resulting from this research, Baylor College of Medicine, Memorial Hermann Hospital System, TIRR Memorial Hermann, University of Houston, and/or the Harris County Hospital District (Ben Taub General Hospital and Quentin Mease Community Hospital) are not able to offer financial compensation nor to absorb the costs of medical treatment. However, necessary facilities, emergency treatment and professional services will be available to you, just as they are to the general community.

Any questions regarding rights as a research subject may also be addressed to the University of Houston Committee for the Protection of Human Subjects (713-743-9204). All research projects that are carried out by investigators at the University of Houston are governed by requirements of the University and the federal government

FORMULARIO DE CONSENTIMIENTO

En cumplimiento de HIPPA

Institutional Review Board for Baylor College of Medicine and Affiliated Hospitals (IRB)

Comité Examinador Institucional del Colegio de Medicina de Baylor y Hospitales Afiliados

CONSENTIMIENTO DEL PACIENTE PARA PARTICIPAR EN UN ESTUDIO DE INVESTIGACIÓN

H-29571- EL IMPACTO DE LA NEUROCOGNICIÓN, EL CONFLICTO CON EL ROL DE GÉNERO Y LA AUTO-IDENTIDAD EN LA ADAPTACIÓN PSICOSOCIAL DE LESIÓN CEREBRAL TRAUMÁTICA

I. Antecedentes

Se le pide que usted participe en este estudio porque usted tiene una lesión cerebral traumática (TBI, por sus siglas en inglés.) Después de una TBI, muchas personas se pueden dar cuenta de los cambios en su cuerpo, o en la manera de pensar, sentirse y actuar. Estos cambios pueden afectar a diferentes áreas de su vida, tales como regresar al trabajo o tener buenas relaciones con otros. Es importante que entendamos mejor los cambios después de la lesión y cómo las personas se adaptan a estos cambios. Pueden ayudarles a los profesionales de rehabilitación a desarrollar los programas para mejorar la calidad de vida de las personas con TBI. Esta investigación por la Sra. Monique Pappadis está conducida bajo la supervisión del Dr. Patrick Leung de la Universidad de Houston y la Dra. Angelle Sander del Colegio Baylor de Medicina y el hospital TIRR Memorial Hermann.

Este estudio de investigación está patrocinado por el Colegio Baylor de Medicina, el Sistema Hospitalario de Memorial Hermann y la Universidad de Houston.

Propósito

El propósito de este estudio es para entender mejor cómo personas se adapta a la lesión TBI y qué influencia su adaptación. Otro propósito de este estudio es para determinar si personas se adapta diferente dependiendo de su género y/o raza/etnia.

Procedimientos

Usted será uno/a de aproximadamente 100 personas que participa en este estudio.

La investigación conducirá en las siguientes localidades: El Colegio Baylor de Medicina, HCHD: El Distrito Hospitalario del Condado de Harris, HCHD: El Hospital Ben Taub del Distrito Hospitalario del Condado de Harris, el Sistema Hospitalario de Memorial Hermann, TIRR: El Instituto para la Rehabilitación e Investigación y la Universidad de Houston.

Si usted está de acuerdo de participar en este estudio, Pediremos que usted nos dé el permiso para obtener su historial médico del hospital en donde usted ha recibido el cuidado para su lesión. Para obtener su historial médico de los hospitales, necesitamos su nombre, fecha de nacimiento, dirección, número de teléfono y su número de seguro social (si aplica). La siguiente

información será conseguida de su historial médico y apuntada específicamente para este proyecto: las fechas de ingreso hospitalario y de alta prevista, tipo de lesión TBI (cómo consiguió su lesión y qué grave fue); los resultados radiográficos del CT o MRI; y la documentación de la pérdida de conocimiento. Usted será entrevistado/a en su hogar por un miembro del personal de investigación durante la hora que se le conviene a usted. Si usted no se siente cómodo/a que el/la investigador(a) viene a su casa, usted puede ir al centro de investigación para completar este estudio. Durante la visita, le pedirán a completar una entrevista para revelar su experiencia con teniendo una TBI. También, usted va a completar algunos exámenes de sus habilidades de pensar (tales como, la memoria y atención). Usted completará cuestionarios sobre su lesión, cómo se ve usted mismo/a, sus roles de género (comportamientos y responsabilidades que tiene en situaciones sociales), cómo se enfrenta con los problemas desde su lesión y cómo se siente después de la lesión. Es posible que usted será seleccionado/a para tomar parte en una entrevista grabada para saber cómo se ve usted mismo/a después de la lesión. Sin embargo, usted tiene el derecho de no tomar parte en la entrevista grabada. Todas las entrevistas serán confidenciales y no va a incluir su información relacionada a usted, tales como su nombre, fecha de nacimiento o dirección. Usted sólo va a ser identificado por su número de participación en este estudio. El tiempo total estimado para completar la entrevista grabada es aproximadamente 30 minutos. Completar las exámenes de sus habilidades de pensar y los cuestionarios va a tomar aproximadamente 1 a 1.5 horas. Por lo tanto, el tiempo total estimado para su participación en este estudio es aproximadamente 1.5 a 2 horas.

La entrevista se incluye las preguntas sobre cómo ve usted mismo/a desde la lesión, los cambios que ha notado y sus metas específicos que tiene. El propósito de grabar la entrevista es asegurarse que los investigadores pueden recordar todo lo que dice usted y pueden entender correctamente sus experiencias. Es posible que sea contactado/a por teléfono después de la entrevista inicial para clarificar la información dada durante la entrevista. De nuevo, su nombre y otra información relacionada con usted no serán mencionados durante la entrevista grabada. Todas las entrevistas serán confidenciales y protegidas por una contraseña. Vamos a mantener las entrevistas grabadas hasta que el estudio sea completo y vamos a destruirlas al final del estudio. No tener las entrevistas grabadas, no va a afectar su participación en este estudio.

Por favor indique si está de acuerdo en tener su(s) entrevista(s) grabada(s):

- _____ Estoy de acuerdo en tener mis entrevistas inicial y complementaria grabadas.
- ☐ Estoy de acuerdo que mi entrevista grabada puede ser utilizada en publicaciones o presentaciones.
 - ☐ No estoy de acuerdo que mi entrevista grabada puede ser utilizada en publicaciones o presentaciones.
- _____ No deseo tener mis entrevistas grabadas.

Usted puede ver y obtener una copia de su información de su salud relacionada a este estudio de investigación. Su doctor del estudio podrá darle parte de su información mientras que el estudio está en progreso y el resto de su información se le dará cuando el estudio sea completo.

Riesgos Potenciales y Molestias

Hay un riesgo mínimo o una incomodidad de participar en este estudio. Cada esfuerzo será hecho para conducir la evaluación y entrevista a la hora que sea más conveniente para usted.

Usted recibirá descansos cuando sean necesarios durante la evaluación. Puede experimentar los sentimientos de frustración o fatiga cuando complete la entrevista o cuestionarios del estudio. Sin embargo, cada esfuerzo será hecho para minimizar cualquier incomodidad que se sienta. Si usted sufre de cualquier incomodidad emocional cuando contesta las preguntas, un(a) psicólogo(a) estará disponible para usted por teléfono o en persona. Si es necesario, usted recibirá una referencia para los servicios de salud mental y puede recibir información sobre los servicios que le pueden ayudar a usted. Porque usamos parte de su información de salud protegida en este estudio, también existe la posibilidad de que haya un riesgo de pérdida de confidencialidad. Sin embargo, toda su información obtenida durante la entrevista será confidencial y no puede ser divulgada a cualquier persona que no sea relacionada con este estudio. La información será guardada en algunos gabinetes cerrados con llave y los datos electrónicos estarán en una base de datos que está protegida por una contraseña.

El personal del proyecto de investigación le comunicará oportunamente cualquier información reciente que pueda afectar la salud y bienestar o la participación en el estudio.

II. Beneficios Potenciales

Los beneficios de participar en este estudio pueden ser: revelar sus experiencias después de la lesión y cómo le ha tenido un efecto en su vida. También puede ser un beneficio en hacer preguntas acerca de su lesión y recibir una referencia para servicios apropiados, si es necesario. El recibir información de servicios, tales como el transporte y los servicios médicos, financieros y de salud mental, puede ser un beneficio para usted. La investigación les puede ayudar a los investigadores a entender mejor cómo personas se adaptan a la lesión TBI y cuáles son los factores importantes para mejorar la adaptación. Este conocimiento puede tener como resultado tratamientos nuevos y mejores para ayudarles a las personas a adaptarse a la lesión TBI. Además, tratamientos pueden ser desarrollados para satisfacer las necesidades de mujeres, hombres y los grupos distintos de raza/etnia.

Sin embargo, es posible que usted no pueda recibir beneficios de participar.

III. Alternativas

Tiene la decisión a participar o no en este estudio.

IV. Gastos y Pagos del sujeto

No hay gastos por su participación en este estudio. Usted recibirá \$30.00 después de completar todos los exámenes, entrevistas y los cuestionarios asociados con este estudio.

V.

VI. Derechos del Sujeto

Su firma en este formulario de consentimiento indica que ha recibido toda la información sobre el estudio y que acepta participar en él.

Se le proporcionará una copia del formulario para su información. Al firmarlo, no renuncia a sus derechos de ninguna manera. Puede suspender su participación en cualquier momento, aun después de haber firmado el formulario. Póngase en contacto con el personal del proyecto de investigación si decide no seguir participando en el estudio.

Si usted escoge no tomar parte en la investigación o si usted decide parar su participación más tarde, sus beneficios y servicios permanecerán igual que antes, de que este estudio fue discutido con usted. Usted no perderá estos beneficios, servicios ni derechos.

Información de su Salud

Estaremos reuniendo información de salud personal (es información de salud protegida por la ley) que va ser ligada a usted. La información de salud personal incluye su nombre, domicilio, número de seguro social o cualquier otro dato de identificación. La ley nos exige obtener su permiso para utilizar la información de salud protegida en este proyecto de investigación. Al firmar este formulario, usted nos autoriza a usar dicha información en el estudio.

Si decide no participar en el estudio, la información de salud protegida se divulgará únicamente según lo establecido por la ley o como se detalla en este formulario. Quienes manejan información de salud protegida harán lo posible por mantener su privacidad. Es probable que los resultados obtenidos en este estudio se publiquen; pero no se revelará su identidad.

Las personas que proporcionan asistencia médica y aseguran la calidad del cuidado en los hospitales donde se lleva a cabo el estudio, los patrocinadores mencionados anteriormente, los representantes del patrocinador y las entidades de supervisión o regulación, como el Departamento de Salud y Servicios Humanos de los EE.UU., tienen derecho a evaluar ciertas partes de su historial médico y los registros relacionados con este estudio. Dada la necesidad de que el investigador y el personal del proyecto de investigación proporcionen información a las partes antes mencionadas, no se puede garantizar la privacidad total.

Los individuos mencionados anteriormente tendrán acceso a la información siempre y cuando la necesiten, aun después de terminado el estudio.

Si decide suspender su participación en el estudio, o si su participación queda suspendida, usted tiene derecho a prohibir que se siga usando en el estudio la información protegida. Póngase en contacto con el personal del proyecto de investigación para informarles de su decisión; se le proporcionará la dirección del investigador del estudio a quien debe notificar por escrito. El investigador respetará su decisión, a menos que el no poder utilizar su información de salud afecte la seguridad y la calidad del proyecto de investigación.

La investigadora, ANGELLE SANDER, o la persona que éste designe, hará lo posible por contestar a todas sus preguntas. Si tiene alguna duda o inquietud, o si debe notificar una complicación relacionada con el estudio, puede comunicarse en cualquier momento con el personal del proyecto de investigación: ANGELLE SANDER al (713) 797-7101 y/o MONIQUE PAPPADIS al (713) 797-7107. También puede comunicarse con PATRICK LEUNG, de la facultad de la Universidad de Houston al (713) 743-8111.

Los miembros del Comité Examinador Institucional (IRB) del Colegio de Medicina de Baylor y los hospitales afiliados también le responderán preguntas o dudas sobre sus derechos como sujeto de la investigación. El número telefónico de la oficina del Comité de ética en investigación clínica es (713) 798-6970. Llame a la oficina del IRB si usted quiere hablar con una persona independiente a la investigadora y el personal de investigación para reclamos acerca de la investigación, o si usted no puede contactar al personal de investigación, o si usted desea hablar con alguien que no sea el personal de investigación.

Tendremos acceso a su registro médico del hospital Memorial Hermann y colectando parte de los datos que incluyen su nombre, fecha de nacimiento, dirección, número de teléfono, tipo de lesión TBI (cómo consiguió su lesión y qué grave fue), los resultados radiográficos del CT o MRI y la documentación de la pérdida de conocimiento para el estudio de investigación.

Esta autorización para divulgar información médica que está protegida por la ley no vence.

Los resultados de este estudio pueden ser publicados. Sin embargo, no se revelará su nombre u otra información identificable.

Cuando el estudio sea completo y no existe una necesidad de tener su información identificable, la destruimos.

Su firma debajo indica que usted ha leído la información anterior y da la autorización al personal del hospital Memorial Hermann para divulgar cierta información referida más arriba. Tiene el derecho de revocar en escrito esta autorización en cualquier momento, a excepción de que la acción ya fuese realizada durante el período de autorización. Usted ha sido informado/a que cuando esta información sea utilizada o es revelada según esta autorización, la información puede ser susceptible a la revelación por el/la investigador(a) y pueda que ya no sea protegida.

En caso de resultar de una lesión del estudio, Colegio de Medicina de Baylor, el Sistema Hospitalario de Memorial Hermann, TIRR Memorial Hermann, la Universidad de Houston, y/o el Distrito Hospitalario del Condado de Harris (Hospitales Ben Taub y Quentin Mease) no pueden ofrecer compensación financiera ni cubrir los gastos del tratamiento médico. Sin embargo, facilidades necesarias, tratamientos de emergencia, y servicios profesionales serán disponibles a usted, como son por la comunidad general.

Cualesquiera preguntas que usted tenga sobre sus derechos como participantes pueden ser contestados por el Comité de la Universidad de Houston para la Protección de los Sujetos Humanos (713-743-9204.) Todos los proyectos de investigación que sean conducidos por los investigadores de la Universidad de Houston son gobernados por los requisitos de la Universidad y el gobierno federal.

Su firma en este formulario de consentimiento indica que usted ha leído este formulario de consentimiento (o se lo han leído), que sus preguntas han sido contestadas a su satisfacción, y que usted está de acuerdo de voluntariamente tomar parte en este estudio de investigación. Usted recibirá una copia de este formulario de consentimiento.

| | |
|--|-----------|
| <hr/> | <hr/> |
| Sujeto | Fecha |
| <hr/> | <hr/> |
| Investigador(a) o Persona designado para obtener consentimiento | Fecha |
| <hr/> | <hr/> |
| Testigo (si es aplicable) | Fecha |
| <hr/> | <hr/> |
| Traductor (si es aplicable) | Fecha |

Appendix C

Recruitment Script

Recruitment Script for Psychosocial Adjustment to TBI Study

If individual **HAS** participated in previous research:

"I would like to thank you for your past participation in our research projects at the Brain Injury Research Center at TIRR Memorial Hermann. Previously, you have given us permission to contact you about any future projects."

If individual **HAS NOT** participated in previous research:

Hi, my name is _____ and I am calling from the Brain Injury Research Center at TIRR Memorial Hermann. I am calling because you received care at Memorial Hermann or Ben Taub General Hospital for an injury to the brain. I would like to tell you about a new project that we are doing and to see if you might be interested in participating. May I?

For all:

After a traumatic brain injury (or TBI), individuals may notice changes in their physical abilities, thinking, moods and feeling, or the way they behave after injury. Changes after a TBI may affect different areas of your life, such as working, going to school, your relationships, and the way you feel about yourself and life. The new project is about understanding how individuals adjust to TBI and what factors influences their adjustment. This information will help rehabilitation professionals improve treatments and develop new interventions to improve how individuals cope with TBI.

Your participation would involve completing an interview to share your experience with having a TBI. You will also complete some tests of thinking skills (such as memory and concentration). Then you will complete questionnaires about your injury, how you view yourself, your roles, how you deal with problems, and how you feel since after your TBI. If it is convenient for you, you may complete the study at your home. You may also come to the research center if you are more comfortable doing so. It may take about 1.5 to 2 hours to complete the assessment; however, it may take more or less time depending on you. You will receive \$30 for your participation in this study. This is to reimburse you for your time and effort while participating. This study is part of dissertation work conducted under the co-supervision of Dr. Patrick Leung at the University of Houston.

This is a research study and your participation is voluntary. Would you be interested in participating?

(If yes, continue with assessing orientation. Then schedule a convenient time for consenting and participation. If not available to schedule, inform them that they will be contacted shortly to schedule assessment.)

(If no, thank them for their time and document the decline.)

Appendix D

Measures

UAB Spain Rehabilitation Center: The Orientation Log (O-Log)
(Jackson & Novack, 1994)

DEMOGRAPHIC INFORMATION:

Name: _____ Medical Record #: _____

Age: _____ DOB: _____ Sex: _____ Marital Status: _____ Race: _____

Education (years): _____ Occupation: _____

Rehabilitation diagnosis and brief medical history: _____

Current medications: _____

ADMINISTRATION AND SCORING:

The Orientation Log (O-Log) is designed to be a quick quantitative measure of orientational status for use at bedside with rehabilitation inpatients. Place, time, and situational (Etiology/Event + Pathology/Deficits) domains are assessed. Patient responses are scored according to the following criteria:

- 3 = correct spontaneously or upon first free recall attempt;
- 2 = correct upon logical cueing (e.g., "That was yesterday, so today must be ...");
- 1 = correct upon multiple choice or phonemic cuing; and
- 0 = incorrect despite cueing, inappropriate response, or unable to respond.

Incorrect responses should be followed by cuing at the next highest level. In the place domain, "Hospital" in any context is sufficient for Kind of Place. In the domain of time, Month, Date, Year, and Day of Week must be exact; however, Clock Time can be correct to within 30 minutes (plus or minus). Patients are allowed to look at a clock without penalty when responding to the Clock Time item. For situation, the patient must be oriented to both Etiology/Event (e.g., "What brought you into the hospital?") and Pathology/Deficits (e.g., "What kind of injuries did you have?" or "How did the stroke affect you?"). Situational responses must demonstrate awareness of head/brain injury and how the injury was sustained (e.g., MVA, fall, assault, GSW). Add scores down each column and plot total.

Demographic and Injury-Related Questions

ID#: 4-digit (e.g., **7** # # #) Parent Study #:

Date of Assessment:

Date of Injury: circle: 3 mos. to <1 year 1 or 2 year ≥ 3 years

Acute Hospital: (1=BTGH, 2=MHHS, 3=Other)

Rehab Hospital: (1=QM, 2=TIRR, **888**=Not Applicable)

Acute Admission: Acute Discharge:

Rehab Admission: Rehab Discharge:

Primary Language: (**0** = English, **1** = Spanish)

Gender: (**1** = Female, **0** = Male)

Age: Date of Birth:

Education: (# of years, Associate's degree = **14** years; Bachelor's degree = **16** years; Master's degree = **18** years; Doctorate degree = **20** years)

Race/ Ethnicity: (**0**=White, **1**=Black/African-American, **2**=Latin/Hispanic)

Occupation:

Born in U.S.: (**1** = yes, **0** = no)

Which generation: (1 = 1st generation, 2 = 2nd generation or greater, **888** = not applicable)

of years in U.S.: **888** = not applicable

Religion: (0 = None, 1 = Christian, 3 = Jewish, 4 = Jehovah's Witness, 5 = Mormon, 6 = Muslim, 7 = Seventh Day Adventist, 8 = Eastern (Buddhist, Tao, etc.), 9 = Other)

Actively Practicing Religion: (1 = Yes, 0 = No)

Marital: (0 = Never married, 1 = Married or Common Law, 2 = Divorced, 3 = Separated, 4 = Widowed, 5 = Cohabiting, 6 = Other, **999** = Unknown)

Productivity: (1 = Employed, 2 = Student, 3 = Homemaker, 4 = (Volunteer / Avocation Pursuits), 5 = Nonproductive, **888** = not applicable, **999** = Unknown)

Household Income: (1 = below \$10K, 2 = \$10K - \$20K, 3 = \$20,001 - \$30K, 4 = \$30,001 - \$40K, 5 = \$40,001 - \$50K, 6 = \$50,001 - \$100K, 7 = >\$100K, **999** = Unknown)

Best GCS Eye: Best GCS Motor: Best GCS Verbal:

ER GCS Total: (GCS scores range from **3-15**; **888** = non-applicable; **999** = unknown or missing)

Best Day One GCS Total:

Mechanism of injury: (1 = MVA; 2 = MCA; 3 = Falls/Jumps; 4 = Assault; 5 = Auto-ped; 6 = GSW; 7 = Sports-related; 8 = Hit by Object; 9 = Other; 888 = not applicable; 999=unknown)

Presence of Frontal lesion: (1 = right; 2 = left; 3 = bilateral; 4 = none; 888 = not applicable; 999 = unknown)

Presence of Non-frontal lesion: (1 = right; 2 = left; 3 = bilateral; 4 = none; 888 = not applicable; 999 = unknown)

Presence of diffuse injury: (1 = right; 2 = left; 3 = bilateral; 4 = none; 888 = not applicable; 999 = unknown)
(on CT/MRI Report)

History of TBI: (0=No, 1=Yes)

RAVLT Instructions (English)

Learning Trials

T1. I am going to read a list of words. Listen carefully, for when I stop, you are to say back as many as you can remember. It doesn't matter in what order you repeat them. Just try to remember as many as you can.

[Read each word clearly, at the rate of one word per second. Record their responses in the order they are given.]

After client indicates that he/she can recall no more words, say:

T2. Now I'm going to read the same list again, and once again when I stop, I want you to tell me as many words as you can remember, including words you said the first time. It doesn't matter in what order you say them, just say as many words as you can remember, whether or not you said them before.

[Repeat list: Read each word clearly, at the rate of one word per second. Record responses.]

T3., T4, T5. Repeat the preceding instructions as needed for Trials III through V. After Trial V, present List B after giving appropriate instructions:

B. Now I'm going to read a second list of words. This time, again, you are to say back as many words of this second list as you can remember. Again, the order in which you say the words does not matter. Just try to remember as many as you can.

After recall for this list (B) is completed, Trial VI is administered. For this trial, the client is asked to again recall List A, *but the list is not read again*. Say:

T6. Now tell me all the words you remember from the first list.

After 20-30 minutes:

Delayed Recall Trial (T7)

A short while ago I read a list of words to you several times, and you were trying to learn these words. Tell me the words from this list again. [Clarify that it is the first list].

Recognition Memory

I am going to read a list of words to you, one at a time. If the word was on the first list, say "Yes," and if it wasn't, say "No."

RAVLT

| <i>List A</i> | <i>A1</i> | <i>A2</i> | <i>A3</i> | <i>A4</i> | <i>A5</i> | <i>List B</i> | <i>B1</i> | <i>A6</i> | <i>A7</i> | |
|---------------|-----------|-----------|-----------|-----------|-----------|---------------|-----------|-----------|-----------|---------|
| Drum | | | | | | Desk | | | | Drum |
| Curtain | | | | | | Ranger | | | | Curtain |
| Bell | | | | | | Bird | | | | Bell |
| Coffee | | | | | | Shoe | | | | Coffee |
| School | | | | | | Stove | | | | School |
| Parent | | | | | | Mountain | | | | Parent |
| Moon | | | | | | Glasses | | | | Moon |
| Garden | | | | | | Towel | | | | Garden |
| Hat | | | | | | Cloud | | | | Hat |
| Farmer | | | | | | Boat | | | | Farmer |
| Nose | | | | | | Lamb | | | | Nose |
| Turkey | | | | | | Gun | | | | Turkey |
| Color | | | | | | Pencil | | | | Color |
| House | | | | | | Church | | | | House |
| River | | | | | | Fish | | | | River |
| # Correct | | | | | | | | | | |

RAVLT
30-WORD RECOGNITION MEMORY TEST

_____ TEACHER

_____ COFFEE

_____ RIVER

_____ ROAD

_____ BRIDGE

_____ FARMER

_____ PEN

_____ FOREHEAD

_____ KERCHIEF

_____ HOUSE

_____ MOON

_____ COLOR

_____ BEET

_____ CURTAIN

_____ FLOOR

_____ SOLDIER

_____ DRUM

_____ HAT

_____ TURKEY

_____ MINUTE

_____ NOSE

_____ SCHOOL

_____ BELL

_____ FACE

_____ GARDEN

_____ CLASSROOM

_____ PARENT

_____ CHILDREN

_____ BROOMSTICK

_____ GUN

WHO-UCLA AVLT Instructions (Spanish)

Learning Trials

T4. Yo voy a leerle una lista de palabras. Por favor escuche cuidadosamente, porque cuando yo termine, quiero que me diga todas las palabras que usted pueda recordar. Puede decírmelas en cualquier orden. Dígame todas las palabras que pueda recordar.

[Lea cada una de las palabras a una velocidad de una palabra cada segundo. Registre las respuestas.]

Cuando el cliente indique que no recuerda más palabras, diga:

T5. Ahora voy a leerle la misma lista de palabras, y cuando yo termine, quiero que me diga todas las palabras que usted pueda recordar, incluyendo todas las palabras que usted me dijo la primera vez. No importa el orden que me diga, sólo me diga todas las palabras que pueda recordar, no importa si me dijo la primera vez.

[Repita la lista: Lea claramente las palabras a una velocidad de una palabra cada Segundo. Registre las respuestas.]

T6., T4, T5. Repita las instrucciones para el Ensayo 3 a 5. Después del Ensayo 5, presente la lista B después de decir las instrucciones:

B. Ahora voy a leerle una segunda lista de palabras. Esta vez, de nuevo, quiero que me diga todas las palabras de esta segunda lista que pueda recordar, en cualquier orden. Intente de recordar todas las palabras que pueda.

Después de que la lista B sea completo, continúe con el Ensayo 6. Para este Ensayo, le pida al cliente que recuerde la primera lista, pero no repita la lista. Diga:

T7. Ahora, dígame todas las palabras que usted pueda recordar de la primera lista.

Después de 20-30 minutos:

Delayed Recall Trial (T7)

Yo le he leído muchas veces una lista de palabras, y estaba tratando de recordar esas palabras. De nuevo, dígame todas las palabras de esta lista.
[Clarifique que está hablando de la primera lista].

Recognition Memory

Yo voy a leerle una lista de palabras, una palabra a la vez. Si la palabra estaba en la primera lista, diga "Sí", y si no lo estaba, diga "No."

**WHO-UCLA AVLT
30-WORD RECOGNITION MEMORY TEST (Spanish)**

| | |
|-----------------|---------------|
| _____ espejo | _____ labios |
| _____ MARTILLO | _____ árbol |
| _____ PUÑAL | _____ BRAZO |
| _____ vela | _____ nariz |
| _____ bicicleta | _____ sol |
| _____ HACHA | _____ camión |
| _____ RELOJ | _____ OJO |
| _____ SILLA | _____ pez |
| _____ AVIÓN | _____ OREJA |
| _____ tortuga | _____ MOTO |
| _____ CABALLO | _____ culebra |
| _____ pierna | _____ butaca |
| _____ PERRO | _____ bus |
| _____ mesa | _____ CAMA |
| _____ GATO | _____ CARRO |

GENDER ROLE CONFLICT SCALE -I (GRCS-I)
Male Version

Instructions: In the space to the left of each sentence below, write the number that most closely represents the degree that you Agree or Disagree with the statement. There is no right or wrong answer to each statement; your own reaction is what is asked for.

| | | | | | | | | | | | |
|--|------------------------|--|---|--|---|--|---|--|---|--|---------------------------|
| | Strongly Agree 6 | | 5 | | 4 | | 3 | | 2 | | Strongly Disagree 1 |
|--|------------------------|--|---|--|---|--|---|--|---|--|---------------------------|

1. ____ Moving up the career ladder is important to me.
2. ____ I have difficulty telling others I care about them.
1. ____ Verbally expressing my love to another man is difficult for me.
4. ____ I feel torn between my hectic work schedule and caring for my health.
5. ____ Making money is part of my idea of being a successful man.
6. ____ Strong emotions are difficult for me to understand.
7. ____ Affection with other men makes me tense.
8. ____ I sometimes define my personal value by my career success.
9. ____ Expressing feelings makes me feel open to attack by other people.
10. ____ Expressing my emotions to other men is risky.
11. ____ My career, job, or school affects the quality of my leisure or family life.
12. ____ I evaluate other people's value by their level of achievement and success.
13. ____ Talking about my feelings during sexual relations is difficult for me.
14. ____ I worry about failing and how it affects my doing well as a man.
15. ____ I have difficulty expressing my emotional needs to my partner.

16. ____ Men who touch other men make me uncomfortable.
17. ____ Finding time to relax is difficult for me.
18. ____ Doing well all the time is important to me.
19. ____ I have difficulty expressing my tender feelings.
20. ____ Hugging other men is difficult for me.
21. ____ I often feel that I need to be in charge of those around me.
22. ____ Telling others of my strong feelings is not part of my sexual behavior.
23. ____ Competing with others is the best way to succeed.
24. ____ Winning is a measure of my value and personal worth.
25. ____ I often have trouble finding words that describe how I am feeling.
26. ____ I am sometimes hesitant to show my affection to men because of how others
might perceive me.
27. ____ My needs to work or study keep me from my family or leisure more than
would like.
28. ____ I strive to be more successful than others.
29. ____ I do not like to show my emotions to other people.
30. ____ Telling my partner my feelings about him/her during sex is difficult for me.
31. ____ My work or school often disrupts other parts of my life (home, family, health
leisure.
32. ____ I am often concerned about how others evaluate my performance at work or
school.
33. ____ Being very personal with other men makes me feel uncomfortable.
34. ____ Being smarter or physically stronger than other men is important to me.

35. ____ Men who are overly friendly to me make me wonder about their sexual preference (men or women).
36. ____ Overwork and stress caused by a need to achieve on the job or in school, affects/hurts my life.
37. ____ I like to feel superior to other people.

GENDER ROLE CONFLICT SCALE -I (GRCS-I) - Spanish
Versión Masculina

Instrucciones: En el espacio a la izquierda de cada declaración, escriba el número que mejor represente el grado en que está de acuerdo o en desacuerdo con la declaración. No hay una respuesta correcta o incorrecta de cada declaración, su opinión es lo que se pide a usted.

| | | | | | | |
|--|---|---|---|---|---|------------------|
| Completamente Completamente De acuerdo | | | | | | En desacuerdo |
| 6 | 5 | 4 | 3 | 2 | 1 | |

1. ____ Avanzar en la carrera profesional es importante para mí.
2. ____ Tengo dificultad de decirle a otros que me preocupo por ellos.
3. ____ Expresar verbalmente mi amor o preocupación por otro hombre es difícil para mí.
4. ____ Me siento dividido entre mi agitado horario de trabajo y el cuidado de mi salud.
5. ____ Ganar dinero es mi idea de ser un hombre exitoso.
6. ____ Se me dificulta entender las emociones fuertes.
7. ____ Ser afectivo con otro hombre me pone tenso.
8. ____ En ocasiones defino mi valor personal según mi éxito profesional.
9. ____ El expresar mis sentimientos me hace sentir expuesto al ataque de otras personas.
10. ____ Es riesgoso expresar mis emociones a otro hombre.
11. ____ Mi carrera, trabajo, o escuela afecta la calidad de mi tiempo libre o vida familiar.
12. ____ Yo mido el valor de otras personas según su nivel de logros y éxitos.
13. ____ Para mí es difícil hablar (de mis sentimientos) durante el sexo.
14. ____ Me preocupa fracasar y cómo eso afecta mi estatus de hombre.
15. ____ Se me dificulta expresar mis necesidades emocionales a mi pareja.
16. ____ Hombres que tocan a otros hombres me hacen sentir incómodo.
17. ____ Es difícil encontrar tiempo para relajarme.
18. ____ Siempre es importante para mí que hago las cosas bien.
19. ____ Tengo dificultad para expresar mis sentimientos tiernos.
20. ____ Se me dificulta abrazar a otro hombre.
21. ____ A menudo siento que necesito ser encargado de aquellos que me rodean.

22. ____ Decirle a otros sobre mis sentimientos fuertes hacia ellos no es la forma de mi comportamiento sexual.
23. ____ Competir con otros es la mejor manera de tener éxito.
24. ____ Ganar sirve para medir mi valor y dignidad personal.
25. ____ Frecuentemente tengo problemas para encontrar las palabras que describan cómo me siento.
26. ____ En ocasiones he dudado mostrar cariño a los hombres por cómo otros puedan percibirme.
27. ____ Mis necesidades para trabajar o estudiar, me mantienen alejado de mi familia o tiempo de ocio más de lo que quisiera.
28. ____ Yo me esfuerzo para tener más éxito que los demás.
29. ____ A mi no me gusta mostrar mis emociones a otras personas.
30. ____ Se me dificulta decirle a mi pareja sobre mis sentimientos hacia él/ella durante el sexo.
31. ____ Frecuentemente mi trabajo o escuela interfiere con otros aspectos de mi vida (hogar, familia, salud, ocio).
32. ____ Frecuentemente me preocupa cómo otros puedan evaluar mi desempeño en el trabajo o escuela.
33. ____ Ser personal con otros hombres me hace sentir incómodo.
34. ____ Es importante para mí ser más inteligente o más fuerte físicamente que otros hombres.
35. ____ Los hombres que son extremadamente amigables conmigo me hacen preguntarme sobre sus preferencias sexuales.
36. ____ El exceso de trabajo y el estrés que me produce la necesidad de tener logros en el trabajo o la escuela afectan/lastiman mi vida.
37. ____ Me gusta sentirme superior a otras personas.

GENDER ROLE CONFLICT SCALE -I (GRCS-I) Female Version

Instructions: In the space to the left of each sentence below, write the number which most closely represents the degree that you Agree or Disagree with the statement. There is no right or wrong answer to each statement; your own reaction is what is asked for.

| | | | | | |
|------------------------|---|---|---|---|---------------------------|
| Strongly Agree 6 | 5 | 4 | 3 | 2 | Strongly Disagree 1 |
|------------------------|---|---|---|---|---------------------------|

1. ____ Moving up the career ladder is important to me.
2. ____ I have difficulty telling others I care about them.
3. ____ Verbally expressing my love to another woman is difficult for me.
4. ____ I feel torn between my hectic work schedule and caring for my health.
5. ____ Making money is part of my idea of being a successful woman.
6. ____ Strong emotions are difficult for me to understand.
7. ____ Affection with other women makes me tense.
8. ____ I sometimes define my personal value by my career success.
9. ____ Expressing feelings makes me feel open to attack by other people.
10. ____ Expressing my emotions to other women is risky.
11. ____ My career, job or school affects the quality of my leisure or family life.
12. ____ I evaluate other people's value by their level of achievement and success.
13. ____ Talking (about my feelings) during sexual relations is difficult for me.
14. ____ I worry about failing and how it affects my doing well as a woman.
15. ____ I have difficulty expressing my emotional needs to my partner.
16. ____ Women who touch other women make me uncomfortable.
17. ____ Finding time to relax is difficult for me.

| | | | | | |
|------------------------|---|---|---|---|---------------------------|
| Strongly Agree 6 | 5 | 4 | 3 | 2 | Strongly Disagree 1 |
|------------------------|---|---|---|---|---------------------------|

18. ___ Doing well all the time is important for me.
19. ___ I have difficulty expressing my tender feelings.
20. ___ Hugging other women is difficult for me.
21. ___ I often feel that I need to be in charge of those around me.
22. ___ Telling others of my strong feelings is not part of my sexual behavior.
23. ___ Competing with others is the best way to succeed.
24. ___ Winning is a measure of my value and personal worth.
25. ___ I often have trouble finding words that describe how I am feeling.
26. ___ I am sometimes hesitant to show my affection to women because of how others might perceive me.
27. ___ My needs to work or study keep me from my family or leisure more than I would like.
28. ___ I strive to be more successful than others.
29. ___ I do not like to show my emotions to other people.
30. ___ Telling my partner my feelings about him/her during sex is difficult for me.
31. ___ My work or school often disrupts other parts of my life (home, family, health, leisure).
32. ___ I am often concerned about how others evaluate my performance at work or school.
33. ___ Being very personal with other women makes me feel uncomfortable.
34. ___ Being smarter or physically stronger than other women is important to me.

| | | | | | |
|------------------------|---|---|---|---|---------------------------|
| Strongly Agree 6 | 5 | 4 | 3 | 2 | Strongly Disagree 1 |
|------------------------|---|---|---|---|---------------------------|

35. ____ Women who are overly friendly to me make me wonder about their sexual preference (men or women).
36. ____ Overwork and stress, caused by a need to achieve on the job or in school, affects/hurts my life.
37. ____ I like to feel superior to other people.

GENDER ROLE CONFLICT SCALE -I (GRCS-I) - Spanish
Versión Femenina

Instrucciones: En el espacio a la izquierda de cada declaración, escriba el número que mejor represente el grado en que está de acuerdo o en desacuerdo con la declaración. No hay una respuesta correcta o incorrecta de cada declaración, su opinión es lo que se pide a usted.

| | | | | | | |
|--|---|---|---|---|---|------------------|
| Completamente Completamente De acuerdo | | | | | | En desacuerdo |
| 6 | 5 | 4 | 3 | 2 | 1 | |

1. ____ Avanzar en la carrera profesional es importante para mí.
2. ____ Tengo dificultad de decirle a otros que me preocupo por ellos.
3. ____ Expresar verbalmente mi amor o preocupación por otra mujer es difícil para mí.
4. ____ Me siento dividida entre mi agitado horario de trabajo y el cuidado de mi salud.
5. ____ Ganar dinero es mi idea de ser una mujer exitosa.
6. ____ Se me dificulta entender las emociones fuertes.
7. ____ Ser afectiva con otra mujer me pone tensa.
8. ____ En ocasiones defino mi valor personal según mi éxito profesional.
9. ____ El expresar mis sentimientos me hace sentir expuesta al ataque de otras personas.
10. ____ Es riesgoso expresar mis emociones a otra mujer.
11. ____ Mi carrera, trabajo, o escuela afecta la calidad de mi tiempo libre o vida familiar.
12. ____ Yo mido el valor de otras personas según su nivel de logros y éxitos.
13. ____ Para mí es difícil hablar (de mis sentimientos) durante el sexo.
14. ____ Me preocupa fracasar y cómo eso afecta mi estatus de mujer.
15. ____ Se me dificulta expresar mis necesidades emocionales a mi pareja.
16. ____ Mujeres que tocan a otras mujeres me hacen sentir incómoda.
17. ____ Es difícil encontrar tiempo para relajarme.
18. ____ Siempre es importante para mí que hago las cosas bien.
19. ____ Tengo dificultad para expresar mis sentimientos tiernos.
20. ____ Se me dificulta abrazar a otra mujer.
21. ____ A menudo siento que necesito ser encargada de aquellos que me rodean.
22. ____ Decirle a otros sobre mis sentimientos fuertes hacia ellos no es la forma de mi comportamiento sexual.
23. ____ Competir con otros es la mejor manera de tener éxito.

24. ____ Ganar sirve para medir mi valor y dignidad personal.
25. ____ Frecuentemente tengo problemas para encontrar las palabras que describan cómo me siento.
26. ____ En ocasiones he dudado mostrar cariño a las mujeres por cómo otros puedan percibirme.
27. ____ Mis necesidades para trabajar o estudiar, me mantienen alejada de mi familia o tiempo de ocio más de lo que quisiera.
28. ____ Yo me esfuerzo para tener más éxito que los demás.
29. ____ A mi no me gusta mostrar mis emociones a otras personas.
30. ____ Se me dificulta decirle a mi pareja sobre mis sentimientos hacia él/ella durante el sexo.
31. ____ Frecuentemente mi trabajo o escuela interfiere con otros aspectos de mi vida (hogar, familia, salud, ocio).
32. ____ Frecuentemente me preocupa cómo otros puedan evaluar mi desempeño en el trabajo o escuela.
33. ____ Ser personal con otras mujeres me hace sentir incómoda.
34. ____ Es importante para mí ser más inteligente o más fuerte físicamente que otras mujeres.
35. ____ Las mujeres que son extremadamente amigables conmigo me hacen preguntarme sobre sus preferencias sexuales.
36. ____ El exceso de trabajo y el estrés que me produce la necesidad de tener logros en el trabajo o la escuela afectan/lastiman mi vida.
37. ____ Me gusta sentirme superior a otras personas.

Bem Sex Role Inventory
(Bem, 1981)
Copyright

Awareness Questionnaire – Traducida en Español
(Profesional Clínica)

Clinician Name: _____

Patient#: _____ Date: _____

- 1- Mucho peor
- 2- Un poco peor
- 3- Aproximadamente igual
- 4- Un poco mejor
- 5- Mucho mejor

1. ¿Cómo es la habilidad actual del paciente para vivir de forma independiente en comparación con antes de la lesión?
2. ¿Cómo considera que es la habilidad del paciente para manejar dinero/economía con respecto a antes de la lesión?
3. ¿Cómo se lleva el paciente con otras personas ahora en comparación con antes de la lesión?
4. ¿Cómo realiza el paciente las pruebas de atención o tareas que requieren atención en comparación con antes de la lesión?
5. ¿Puede realizar el paciente las cosas que quiere del mismo modo que antes de la lesión?
6. En relación a la vista, ¿Cómo ve el paciente con respecto a antes de la lesión?
7. En relación del oído, ¿Cómo oye el paciente con respecto a antes de la lesión?
8. En relación a su movilidad, ¿Cómo es el paciente en comparación con antes de la lesión?
9. ¿Cómo es la coordinación del paciente con relación a antes de la lesión?
10. ¿Cómo es la orientación del paciente en espacio, persona y tiempo con respecto a antes de la lesión?
11. ¿Cómo es la concentración del paciente ahora en comparación con antes de la lesión?
12. ¿Qué tal el paciente expresa sus pensamientos a otros ahora en comparación con antes de la lesión?
13. ¿Cómo es la memoria del paciente ahora en comparación con antes de la lesión?
14. ¿Qué tal el paciente se le da planificar las cosas ahora en comparación con antes de la lesión?
15. ¿Cómo es el paciente de organizado ahora en comparación con antes de la lesión?
16. ¿Qué tal el paciente controla sus sentimientos ahora en comparación con antes de la lesión?
17. ¿Qué tal el paciente se adapta emocionalmente ahora en comparación con antes de la lesión?

Awareness Questionnaire – Traducida En Español
(Paciente)

Name: _____ Patient #: _____ Date: _____

- 1- Mucho peor
- 2- Un poco peor
- 3- Aproximadamente igual
- 4- Un poco mejor
- 5- Mucho mejor

1. ¿Cómo es su habilidad actual para vivir de forma independiente en comparación con antes de la lesión?
2. ¿Cómo considera que es su habilidad para manejar dinero/economía con respecto a antes de la lesión?
3. ¿Cómo se lleva con otras personas ahora en comparación con antes de la lesión?
4. ¿Cómo realiza las pruebas de atención o tareas que requieren atención en comparación con antes de la lesión?
5. ¿Puede realizar las cosas que quiere del mismo modo que antes de la lesión?
6. En relación a la vista, ¿Cómo ve con respecto a antes de la lesión?
7. En relación del oído, ¿Cómo oye con respecto a antes de la lesión?
8. En relación a su movilidad, ¿Cómo es en comparación con antes de la lesión?
9. ¿Cómo es su coordinación con relación a antes de la lesión?
10. ¿Cómo es su orientación en espacio, persona y tiempo con respecto a antes de la lesión?
11. ¿Cómo es su concentración ahora en comparación con antes de la lesión?
12. ¿Qué tal expresa sus pensamientos a otros ahora en comparación con antes de la lesión?
13. ¿Cómo es su memoria ahora en comparación con antes de la lesión?
14. ¿Qué tal se le da planificar las cosas ahora en comparación con antes de la lesión?
15. ¿Cómo es de organizado ahora en comparación con antes de la lesión?
16. ¿Qué tal controla sus sentimientos ahora en comparación con antes de la lesión?
17. ¿Qué tal se adapta emocionalmente ahora en comparación con antes de la lesión?

Sense of Self Scale (SOSS)

Below are a number of statements concerning your personal attitudes and characteristics. Please read each statement and consider the extent to which you agree or disagree with it. Then respond to the statement as accurately as possible by using the following scale to indicate how much you agree with it.

- 1 – strongly disagree
- 2 – disagree somewhat
- 3 – neither agree nor disagree
- 4 – agree somewhat
- 5 – strongly agree

1. I wish I were more consistent in my feelings. ____
2. It's hard for me to figure out my own personality, interests, and opinions. ____
3. I often think how fragile my existence is. ____
4. I have a pretty good sense of what my long-term goals are in life. ____
5. I sometimes wonder if people can actually see me. ____
6. Other people's thoughts and feelings seem to carry greater weight than my own. ____
7. I have a clear and definite sense of who I am and what I'm all about. ____
8. It bothers me that my personality doesn't seem to be well-defined. ____
9. I'm not sure that I can understand or put much trust in my thoughts and feelings. ____
10. Who am I? is a question that I ask myself a lot. ____
11. I need other people to help me understand what I think or how I feel. ____
12. I tend to be very sure of myself and stick to my own preferences even when the group I am with expresses different preferences. ____

Sense of Self Scale (SOSS) – Spanish version

Debajo hay varias declaraciones relacionadas a sus actitudes y características personales. Por favor, lea cada una de las declaraciones e indique si está de acuerdo o en desacuerdo con cada una, utilizando la siguiente escala para indicar qué grado está de acuerdo con la frase.

- 1 – completamente en desacuerdo
- 2 – más bien en desacuerdo
- 3 – ni de acuerdo ni en desacuerdo
- 4 – más bien de acuerdo
- 5 – completamente de acuerdo

1. Deseo estar más de acuerdo con mis sentimientos. ____
2. Es difícil explicarme mi propia personalidad, intereses y opiniones. ____
3. Frecuentemente, pienso en la fragilidad de mi existencia. ____
4. Tengo una buena idea en la vida de lo qué son mis metas a largo plazo. ____
5. A veces me pregunto si la gente me ve en actualidad. ____
6. Los pensamientos y sentimientos de otros parecen tener más valor que los míos. ____
7. Tengo un sentido claro y definido de quién soy y lo qué soy. ____
8. Me molesta que mi personalidad no parece ser muy definida. ____
9. No estoy seguro/a que puedo entender o tener confianza en mis pensamientos y sentimientos. ____
10. Me pregunto mucho, ¿quién soy yo? ____
11. Necesito que la gente me ayude a entender qué pienso y cómo me siento. ____
12. Tiendo a estar muy seguro/a de mí mismo/a y mantiene mis propias preferencias, aun cuando el grupo con quien estoy se expresa preferencias distintas. ____

Head Injury Semantic Differential Scale (HISD II) Past self-concept

Describe yourself in the past (6 months before your traumatic brain injury).

| | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---------------------------|
| Bored | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Interested |
| Happy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unhappy |
| Helpless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | In control |
| Worried | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Relaxed |
| Dissatisfied | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Satisfied |
| Attractive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unattractive |
| Hopeful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Despondent (Unhopeful) |
| Lacking confidence | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Selfconfident |
| Stable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unstable |
| Of value | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Worthless |
| Aggressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unaggressive |
| Calm | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Irritable |
| Caring | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unfeeling |
| Incapable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Capable |
| Independent | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dependent |
| Inactive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Active |
| Uncooperative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Cooperative |
| Talkative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Withdrawn |
| Friendly | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unfriendly |
| Impatient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Patient |

Head Injury Semantic Differential Scale (HISD II)
Present self-concept

Describe yourself in the present (since your traumatic brain injury).

| | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---------------------------|
| Bored | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Interested |
| Happy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unhappy |
| Helpless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | In control |
| Worried | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Relaxed |
| Dissatisfied | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Satisfied |
| Attractive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unattractive |
| Hopeful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Despondent (Unhopeful) |
| Lacking confidence | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Selfconfident |
| Stable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unstable |
| Of value | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Worthless |
| Aggressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unaggressive |
| Calm | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Irritable |
| Caring | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unfeeling |
| Incapable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Capable |
| Independent | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dependent |
| Inactive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Active |
| Uncooperative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Cooperative |
| Talkative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Withdrawn |
| Friendly | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unfriendly |
| Impatient | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Patient |

Head Injury Semantic Differential Scale (HISD II)
Past self-concept (Concepto de sí mismo en el pasado)

Describábase en el pasado (6 meses antes de su lesión cerebral traumática).

| | | | | | | | | |
|----------------|---|---|---|---|---|---|---|----------------|
| Aburrido/a | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Interesado/a |
| Feliz | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Infeliz |
| Impotente | 1 | 2 | 3 | 4 | 5 | 6 | 7 | En control |
| Preocupado/a | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Relajado/a |
| Insatisfecho/a | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Satisfecho/a |
| Atractivo/a | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Poco atractivo |
| Optimista | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Pesimista |
| Inseguridad | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Seguro/a |
| Estable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Inestable |
| De valor | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Inútil |
| Agresivo/a | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Pacífico/a |
| Tranquilo/a | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Irritable |
| Compasivo/a | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Insensible |
| Incapaz | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Capaz |
| Independiente | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dependiente |
| Inactivo | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Activo |
| Nada servicial | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Servicial |
| Hablador(a) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Reservado/a |
| Amigable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Antipático/a |
| Impaciente | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Paciente |

Head Injury Semantic Differential Scale (HISD II)
Present self-concept (Concepto actual de sí mismo)

Describábase en este momento (desde su lesión cerebral traumática).

| | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|--------------|
| Aburrido/a | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Interesado/a |
| Feliz | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Infeliz |
| Impotente | 1 | 2 | 3 | 4 | 5 | 6 | 7 | En control |
| Preocupado/a | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Relajado/a |
| Insatisfecho/a | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Satisfecho/a |
| Atractivo/a atractivo | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Poco |
| Optimista | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Pesimista |
| Inseguridad | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Seguro/a |
| Estable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Inestable |
| De valor | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Inútil |
| Agresivo/a | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Pacífico/a |
| Tranquilo/a | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Irritable |
| Compasivo/a | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Insensible |
| Incapaz | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Capaz |
| Independiente | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Dependiente |
| Inactivo | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Activo |
| Nada servicial | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Servicial |
| Hablador(a) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Reservado/a |
| Amigable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Antipático/a |
| Impaciente | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Paciente |

Brief COPE

Following are some ways of coping with the stress in your life. We want to know how you have coped since having a traumatic brain injury (TBI).

1 = I didn't do this at all
 2 = I did this a little bit
 3 = I did this a medium amount
 4 = I did this a lot

| | | | | |
|--|---|---|---|---|
| 1. I turned to work or other activities to take my mind off things. | 1 | 2 | 3 | 4 |
| 2. I concentrated my efforts on doing something about the situation I'm in. | 1 | 2 | 3 | 4 |
| 3. I said to myself "this isn't real." | 1 | 2 | 3 | 4 |
| 4. I used alcohol or other drugs to make myself feel better. | 1 | 2 | 3 | 4 |
| 5. I got emotional support from others. | 1 | 2 | 3 | 4 |
| 6. I gave up trying to deal with it. | 1 | 2 | 3 | 4 |
| 7. I took action to try to make the situation better. | 1 | 2 | 3 | 4 |
| 8. I refused to believe that it has happened. | 1 | 2 | 3 | 4 |
| 9. I said things to let my unpleasant feelings escape. | 1 | 2 | 3 | 4 |
| 10. I used alcohol or other drugs to help me get through it. | 1 | 2 | 3 | 4 |
| 11. I tried to see it in a different light, to make it seem more positive. | 1 | 2 | 3 | 4 |
| 12. I tried to come up with a strategy about what to do. | 1 | 2 | 3 | 4 |
| 13. I got comfort and understanding from someone. | 1 | 2 | 3 | 4 |
| 14. I gave up the attempt to cope. | 1 | 2 | 3 | 4 |
| 15. I looked for something good in what is happening. | 1 | 2 | 3 | 4 |
| 16. I made jokes about it. | 1 | 2 | 3 | 4 |
| 17. I did something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping. | 1 | 2 | 3 | 4 |
| 18. I accepted the reality of the fact that it has happened. | 1 | 2 | 3 | 4 |
| 19. I expressed my negative feelings. | 1 | 2 | 3 | 4 |
| 20. I tried to find comfort in my religion or spiritual beliefs. | 1 | 2 | 3 | 4 |
| 21. I learned to live with it. | 1 | 2 | 3 | 4 |

| | | | | |
|--|---|---|---|---|
| 22. I thought hard about what steps to take. | 1 | 2 | 3 | 4 |
| 23. I prayed or meditated. | 1 | 2 | 3 | 4 |
| 24. I made fun of the situation. | 1 | 2 | 3 | 4 |

Brief COPE

Las siguientes son algunas maneras de enfrentarse y adaptarse a situaciones difíciles en su vida. Estamos interesados en saber como usted se enfrentó y adaptó a la lesión cerebral traumática (TBI, por sus siglas en inglés).

- 1 = No hice esto en lo absoluto
 2 = Hice esto un poco
 3 = Hice esto con cierta frecuencia
 4 = Hice esto con mucha frecuencia

| | | | | |
|---|---|---|---|---|
| 1. Yo me enfoqué en el trabajo u otras actividades para distraer mi mente. | 1 | 2 | 3 | 4 |
| 2. Yo concentré mis esfuerzos para hacer algo acerca de la situación en la que estaba. | 1 | 2 | 3 | 4 |
| 3. Yo me dije a mi mismo(a), esto no es real. | 1 | 2 | 3 | 4 |
| 4. Yo usé alcohol u otras drogas para sentirme mejor. | 1 | 2 | 3 | 4 |
| 5. Yo recibí apoyo emocional de otras personas. | 1 | 2 | 3 | 4 |
| 6. Yo me di por vencido(a) de tratar de lidiar con esto. | 1 | 2 | 3 | 4 |
| 7. Yo tomé acción para poder mejorar la situación. | 1 | 2 | 3 | 4 |
| 8. Yo rehusé creer que esto hubiera pasado. | 1 | 2 | 3 | 4 |
| 9. Yo dije cosas para dejar escapar mis sentimientos desagradables. | 1 | 2 | 3 | 4 |
| 10. Yo usé alcohol u otras drogas para que me ayudaran a pasar por esto. | 1 | 2 | 3 | 4 |
| 11. Yo traté de verlo con un enfoque distinto para que pareciera más positivo. | 1 | 2 | 3 | 4 |
| 12. Yo traté de crear una estrategia para saber qué hacer. | 1 | 2 | 3 | 4 |
| 13. Yo recibí apoyo y comprensión de alguien. | 1 | 2 | 3 | 4 |
| 14. Yo dejé de hacerle frente a la situación en la que estaba. | 1 | 2 | 3 | 4 |
| 15. Yo busqué algo bueno en lo que estaba pasando. | 1 | 2 | 3 | 4 |
| 16. Yo hice bromas acerca de esto. | 1 | 2 | 3 | 4 |
| 17. Yo hice algo para pensar menos en esto, como ir al cine, ver T.V., leer, soñar despierto(a), dormir, o ir de compras. | 1 | 2 | 3 | 4 |
| 18. Yo acepté la realidad de que esto haya pasado. | 1 | 2 | 3 | 4 |
| 19. Yo expresé mis pensamientos negativos. | 1 | 2 | 3 | 4 |
| 20. Yo traté de encontrar apoyo en mi religión o mis creencias espirituales. | 1 | 2 | 3 | 4 |
| 21. Yo aprendí a vivir con esto. | 1 | 2 | 3 | 4 |

| | | | | |
|---|---|---|---|---|
| 22. Yo pensé mucho cuales eran los pasos a tomar. | 1 | 2 | 3 | 4 |
| 23. Yo recé o medité. | 1 | 2 | 3 | 4 |
| 24. Yo hice gracia de la situación. | 1 | 2 | 3 | 4 |

Acceptance of Disability (AD) Scale

VII. Section I. For the following section of this questionnaire, please read each statement and then circle the alternative that best represents your answer.

1. My brain injury will prevent me from doing the things that I want.

Disagree Very Much Disagree Agree Agree Very Much

2. I feel good about the overall progress I have made since my brain injury.

Disagree Very Much Disagree Agree Agree Very Much

3. My brain injury has changed those aspects of my life, which I care most about (e.g., relationships, career, independence).

Disagree Very Much Disagree Agree Agree Very Much

4. A person who has a brain injury is no different than anyone else.

Disagree Very Much Disagree Agree Agree Very Much

5. Overall, I feel that my life is really good.

Disagree Very Much Disagree Agree Agree Very Much

6. I feel that I cannot do what I want.

Disagree Very Much Disagree Agree Agree Very Much

7. My brain injury affects my goals more than anything else.

Disagree Very Much Disagree Agree Agree Very Much

8. I feel that I can live a full and normal life.

Disagree Very Much Disagree Agree Agree Very Much

9. My brain injury is so overwhelming to me that I cannot enjoy anything.

Disagree Very Much Disagree Agree Agree Very Much

10. It is important for me to accept myself as I am.

Disagree Very Much

Disagree

Agree

Agree Very Much

11. I feel I am able to offer a lot to other people.

Disagree Very Much

Disagree

Agree

Agree Very Much

12. My brain injury has disrupted my life greatly.

Disagree Very Much

Disagree

Agree

Agree Very Much

13. Because of my brain injury, I could never be as good as someone without a head injury.

Disagree Very Much

Disagree

Agree

Agree Very Much

14. My brain injury does not interfere with achieving what I want to do.

Disagree Very Much

Disagree

Agree

Agree Very Much

15. Life is full of so many things that having a brain injury does not bother me.

Disagree Very Much

Disagree

Agree

Agree Very Much

16. Because of my brain injury, I will never be the same person again.

Disagree Very Much

Disagree

Agree

Agree Very Much

17. Since my brain injury, I am unable to do the things I did before.

Disagree Very Much

Disagree

Agree

Agree Very Much

18. Since my brain injury, others tell me that I have problems that I don't notice.

Disagree Very Much

Disagree

Agree

Agree Very Much

19. Since my brain injury, I am willing to use new ways to help me overcome my limitations.

Disagree Very Much

Disagree

Agree

Agree Very Much

20. I feel OK talking about my brain injury to other people.

| Disagree Very Much | Disagree | Agree | Agree Very Much |
|---|----------|-------|-----------------|
| 21. A person with a brain injury can enjoy many things in life. | | | |
| Disagree Very Much | Disagree | Agree | Agree Very Much |

Acceptance of Disability (AD) Scale - Spanish

VIII. Sección I. Para la sección siguiente de este cuestionario, Lea por favor cada declaración y haga un círculo de la alternativa que es la mejor representación de su respuesta.

1. La lesión del cerebro traumática me impide hacer las cosas que deseo.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

2. Me siento bien sobre el progreso total que he hecho desde mi lesión del cerebro.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

3. Mi lesión del cerebro ha cambiado los aspectos de vida que más me importan a mí (v.g., relación, carrera, independencia.)

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

4. Una persona quien tiene una lesión del cerebro no es diferente de cualquier otra persona.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

5. Sobre todo, siento que mi vida realmente es buena.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

6. Siento que no puedo hacer lo que deseo.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

7. Mi lesión del cerebro afecta mis metas más que nada.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

8. Me siento que puedo vivir una vida completa y normal.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

9. Mi lesión del cerebro me abruma mucho que no puedo gozar de nada.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

10. Para mí, es importante que me acepto como soy.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

11. Me siento que puedo ofrecer mucho a otros.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

12. Mi lesión del cerebro ha interrumpido mi vida mucho.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

13. A causa de mi lesión del cerebro, nunca podría ser tan bueno como alguien sin lesión del cerebro.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

14. Mi lesión del cerebro no interfiere en lograr lo que yo deseo hacer.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

15. La vida está llena de tantas cosas que teniendo una lesión del cerebro no me molesta.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

16. A causa de mi lesión del cerebro, nunca más seré la misma persona.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

17. Desde mi lesión del cerebro, no puedo hacer las cosas que hacía antes.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

18. Desde mi lesión del cerebro, otros me dicen que tengo problemas que no me doy cuenta.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

19. Desde mi lesión del cerebro, estoy dispuesto/a a utilizar maneras nuevas de ayudarme a superar mis limitaciones.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

20. Me siento bien hablando de mi lesión del cerebro a otros.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

21. Una persona con lesión del cerebro, puede gozar de muchas cosas en la vida.

Completamente en desacuerdo En desacuerdo De acuerdo Completamente de acuerdo

P4 Screener
By Kurt Kroenke, MD
Have you had thoughts of actually hurting yourself?
NO YES

4 Screening Questions

1. Have you ever attempted to harm yourself in the past?

NO

YES

2. Have you thought about how you might actually hurt yourself?

NO

YES →

[How? _____]

3. There's a big difference between having a thought and acting on a thought. How likely do you think it is that you will act on these thoughts about hurting yourself or ending your life some time over the next month?

a. Not at all likely

b. Somewhat likely

c. Very likely

4. Is there anything that would prevent or keep you from harming yourself?

NO

YES →

[What? _____]

Shaded ("Risk") Response

| Risk Category | Items 1and 2 | Items 3 and 4 |
|---------------|---------------------------|---------------------------|
| Minimal | Neither is shaded | Neither is shaded |
| Lower | At least 1 item is shaded | Neither is shaded |
| Alto | | At least 1 item is shaded |

P4 Screener (Spanish)
¿Ha tenido pensamientos de hacerse daño?

NO

SÍ

4 Preguntas para
evaluar el potencial de

5. ¿Alguna vez ha tratado de hacerse daño en el pasado?

NO

SÍ

6. ¿Ha pensado en cómo usted podría hacerse daño en realidad?

NO

SÍ

[¿Cómo? _____]

7. Hay una gran diferencia entre tener un pensamiento y actuar en él. ¿Cuál es la probabilidad de que usted va a actuar en estos pensamientos de hacerse daño o terminar su vida en algún momento durante el próximo mes?

- a. No es probable _____
b. Algo probable _____
c. Muy probable _____

8. ¿Existe algo que podría prevenir o impedirle a usted hacerse daño?

NO

SÍ → [¿Qué? _____]

Respuesta ("Riesgo") Sombreada

| Categoría de Riesgo | Artículos 1y 2 | Artículos 3 y 4 |
|---------------------|---------------------------------------|---------------------------------------|
| Mínimo | Ninguno es sombreado | Ninguno es sombreado |
| Bajo | Por lo menos un artículo es sombreado | Ninguno es sombreado |
| Alto | | Por lo menos un artículo es sombreado |

PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems?
(Use "✓" to indicate your answer)

| | Not at all | Several days | More than half the days | Nearly every day |
|---|------------|--------------|-------------------------|------------------|
| 1. Little interest or pleasure in doing things | 0 | 1 | 2 | 3 |
| 2. Feeling down, depressed, or hopeless | 0 | 1 | 2 | 3 |
| 3. Trouble falling or staying asleep, or sleeping too much | 0 | 1 | 2 | 3 |
| 4. Feeling tired or having little energy | 0 | 1 | 2 | 3 |
| 5. Poor appetite or overeating | 0 | 1 | 2 | 3 |
| 6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down | 0 | 1 | 2 | 3 |
| 7. Trouble concentrating on things, such as reading the newspaper or watching television | 0 | 1 | 2 | 3 |
| 8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual | 0 | 1 | 2 | 3 |
| 9. Thoughts that you would be better off dead or of hurting yourself in some way | 0 | 1 | 2 | 3 |

FOR OFFICE CODING 0 + _____ + _____ + _____
=Total Score: _____

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

| | | | |
|--|--|--|---|
| Not difficult at all <input type="checkbox"/> | Somewhat difficult <input type="checkbox"/> | Very difficult <input type="checkbox"/> | Extremely difficult <input type="checkbox"/> |
|--|--|--|---|

Developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke and colleagues, with an educational grant from Pfizer Inc. No permission required to reproduce, translate, display or distribute.

| TBI Model Systems | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Nombre: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fecha: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cuestionario Sobre La Salud Del Paciente (PHQ-9) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p><u>Durante las últimas 2 semanas, ¿con qué frecuencia le han molestado los siguientes problemas?</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: center;">Nunca</th> <th style="width: 10%; text-align: center;">Varios días</th> <th style="width: 10%; text-align: center;">Más de la mitad de los días</th> <th style="width: 10%; text-align: center;">Casi todos los días</th> </tr> </thead> <tbody> <tr> <td>a Tener poco interés o placer en hacer las cosas</td> <td style="text-align: center;"><div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">0</div></td> <td style="text-align: center;"><div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">1</div></td> <td style="text-align: center;"><div style="border: 1px solid black; width: 20px; height: 20px; display: flex; 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| f Sentir falta de amor propio – o que sea un fracaso o que decepcionara a sí mismo/a o a su familia | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">0</div> | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">1</div> | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">2</div> | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">3</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| g Tener dificultad para concentrarse en cosas tales como leer el periódico o mirar la televisión | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">0</div> | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">1</div> | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">2</div> | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">3</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| h Se mueve o habla tan lentamente que otra gente se podría dar cuenta – o de lo contrario, está tan agitado/a o inquieto/a que se mueve mucho más de lo acostumbrado | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">0</div> | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">1</div> | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">2</div> | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">3</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| i Se le han ocurrido pensamientos de que sería mejor estar muerto/a o de que se haría daño de alguna manera | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">0</div> | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">1</div> | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">2</div> | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">3</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Si usted se identificó con cualquier problema en este cuestionario, ¿cuán difícil se le ha hecho cumplir con su trabajo, atender su casa, o relacionarse con otras personas debido a estos problemas?</p> <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 5%; text-align: center;"><div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">0</div></td> <td style="width: 95%;">Nada en absoluto</td> </tr> <tr> <td style="text-align: center;"><div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">1</div></td> <td>Algo difícil</td> </tr> <tr> <td style="text-align: center;"><div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">2</div></td> <td>Muy difícil</td> </tr> <tr> <td style="text-align: center;"><div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">3</div></td> <td>Extremadamente difícil</td> </tr> </tbody> </table> | | | | | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">0</div> | Nada en absoluto | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">1</div> | Algo difícil | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">2</div> | Muy difícil | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">3</div> | Extremadamente difícil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">0</div> | Nada en absoluto | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">1</div> | Algo difícil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">2</div> | Muy difícil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">3</div> | Extremadamente difícil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

GAD-7

Over the last 2 weeks, how often have you been bothered by the following problems?

Not
at all

Several
days

More than
half the
days

Nearly
every day

(Use "✓" to indicate your answer)

| | | | | |
|--|---|---|---|---|
| 1. Feeling nervous, anxious or on edge | 0 | 1 | 2 | 3 |
| 2. Not being able to stop or control worrying | 0 | 1 | 2 | 3 |
| 3. Worrying too much about different things | 0 | 1 | 2 | 3 |
| 4. Trouble relaxing | 0 | 1 | 2 | 3 |
| 5. Being so restless that it is hard to sit still | 0 | 1 | 2 | 3 |
| 6. Becoming easily annoyed or irritable | 0 | 1 | 2 | 3 |
| 7. Feeling afraid as if something awful might happen | 0 | 1 | 2 | 3 |

(For office coding: Total Score T ____ = ____ + ____ + ____)

Developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke and colleagues, with an educational grant from Pfizer Inc. No permission required to reproduce, translate, display or distribute.

| TBI Model Systems | | | | |
|--|---|---|---|---|
| Nombre: | <input style="width: 100%;" type="text"/> | | | |
| Fecha: | <div style="display: flex; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> <div style="font-size: 20px;">/</div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> <div style="font-size: 20px;">/</div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> </div> | | | |
| <div style="border: 1px solid black; padding: 5px; display: inline-block;"> La Escala del Trastorno de Ansiedad Generalizada (GAD-7) </div> | | | | |
| <p><u>Durante las últimas 2 semanas, ¿con qué frecuencia le han molestado los siguientes problemas?</u></p> | | | | |
| | Nunca | Varios días | Más de la mitad de los días | Casi todos los días |
| a Sentirse nervioso/a, intranquilo/a o con los nervios de punta | <input style="width: 30px;" type="text" value="0"/> | <input style="width: 30px;" type="text" value="1"/> | <input style="width: 30px;" type="text" value="2"/> | <input style="width: 30px;" type="text" value="3"/> |
| b No poder dejar de preocuparse o no poder controlar la preocupación | <input style="width: 30px;" type="text" value="0"/> | <input style="width: 30px;" type="text" value="1"/> | <input style="width: 30px;" type="text" value="2"/> | <input style="width: 30px;" type="text" value="3"/> |
| c Preocuparse demasiado por diferentes cosas | <input style="width: 30px;" type="text" value="0"/> | <input style="width: 30px;" type="text" value="1"/> | <input style="width: 30px;" type="text" value="2"/> | <input style="width: 30px;" type="text" value="3"/> |
| d Dificultad para relajarse | <input style="width: 30px;" type="text" value="0"/> | <input style="width: 30px;" type="text" value="1"/> | <input style="width: 30px;" type="text" value="2"/> | <input style="width: 30px;" type="text" value="3"/> |
| e Estar tan inquieto/a que es difícil permanecer sentado/a tranquilamente | <input style="width: 30px;" type="text" value="0"/> | <input style="width: 30px;" type="text" value="1"/> | <input style="width: 30px;" type="text" value="2"/> | <input style="width: 30px;" type="text" value="3"/> |
| f Molestarse o ponerse irritable fácilmente | <input style="width: 30px;" type="text" value="0"/> | <input style="width: 30px;" type="text" value="1"/> | <input style="width: 30px;" type="text" value="2"/> | <input style="width: 30px;" type="text" value="3"/> |
| g Sentir miedo como si algo terrible pudiera pasar | <input style="width: 30px;" type="text" value="0"/> | <input style="width: 30px;" type="text" value="1"/> | <input style="width: 30px;" type="text" value="2"/> | <input style="width: 30px;" type="text" value="3"/> |
| <p>Si usted se identificó con cualquier problema en este cuestionario, ¿cuán difícil se le ha hecho cumplir con su trabajo, atender su casa, o relacionarse con otras personas debido a estos problemas?</p> | | | | |
| <input style="width: 30px;" type="text" value="0"/> | Nada en absoluto | | | |
| <input style="width: 30px;" type="text" value="1"/> | Algo difícil | | | |
| <input style="width: 30px;" type="text" value="2"/> | Muy difícil | | | |
| <input style="width: 30px;" type="text" value="3"/> | Extremadamente difícil | | | |

Appendix E
Curriculum Vitae

CURRICULUM VITAE

Monique Renae (Mills) Pappadis, M.Ed., CHES, CCRP

Brain Injury Research Center at TIRR Memorial Hermann

1333 Moursund

Houston, TX 77030

(713) 797-7107

Monique.Pappadis@memorialhermann.org

EDUCATION

- 2008 - 2014 Ph.D. Candidate, Graduate College of Social Work, University of Houston
Scheduled Graduation May 2014
Dissertation: *A mixed methods investigation on the impact of neurocognition, gender role conflict, and self-identity on psychosocial adjustment to traumatic brain injury*. Chairperson: Patrick Leung, Ph.D.
- 2008 M.Ed., Health Education, University of Houston
Thesis: *Effects of an educational intervention on knowledge, acceptance of disability, and subjective well-being among ethnic minorities with traumatic brain injury (TBI)*
Chairperson: Dennis W. Smith, Ph.D.
- 2003 Post-baccalaureate B.S., Psychology, University of Houston
- 2003 B.S., Biology, University of Houston

INTERNATIONAL EDUCATION/ TRAINING

- Summer 2002 Public Health Program, Pontificia Universidad Católica Madre y Maestra
Santiago, Dominican Republic
Community Health Practicum – Conducted health assessments and educated residents on domestic violence, breast cancer, and AIDS.
Clinical Field Rotation – Assisted medical staff at a rural clinic in Montellano, Dominican Republic.
Community Service – Worked with a medical anthropologist by conducting health assessments of a Haitian community. Educated residents about breast cancer by conducting educational talks.

AWARDS AND HONORS

| | |
|----------------|--|
| 2013 | 2 nd Place poster award for American Congress of Rehabilitation Medicine (ACRM) presented at the 2013 ACRM – Annual Conference, Orlando, FL, November 14, 2013 (1 st Author) |
| 2013 | 3 rd Place poster award for American Congress of Rehabilitation Medicine (ACRM) presented at the 2013 ACRM – Annual Conference, Orlando, FL, November 14, 2013 (Co-Author) |
| 2012 | Fahs-Beck for Research and Experimentation Scholar, The New York Community Trust, July 2012 |
| 2012 - Present | Phi Beta Delta – Delta Iota chapter – University of Houston |
| 2012 | Phi Alpha Honor Society Scholarship – University of Houston |
| 2012 | Santa Clara Valley Brain Injury Conference Best Scientific Poster Award |
| 2010 | University of Hong Kong Student Award for Outstanding Abstract - 2010 Joint World Conference on Social Work and Social Development: The Agenda |
| 2010 | International Education Fee Scholarship-Houston Junior Chamber of Commerce Scholarship (IEFS-HJCC) – University of Houston |
| 2010 | Phi Alpha Honor Society Honorable Mention Award – University of Houston |
| 2009 | David Strauss, Ph.D., Memorial Award for outstanding poster presentation The American Congress of Rehabilitation Medicine Brain Injury Interdisciplinary Special Interest Group (BI-ISIG) |
| 2007 - Present | Golden Key International Honour Society – University of Houston |
| 2007 | College of Education Department of Health and Human Performance - Competitive Graduate Student Research Award, University of Houston |
| 2006 - 2008 | Kappa Delta Pi (International Honor Society in Education) Health and Human Performance Representative |

NATIONAL SCIENTIFIC PARTICIPATION

| | |
|----------------|---|
| 2013 – Present | Editorial Board Member, <i>Health Psychology Report</i> |
|----------------|---|

| | |
|----------------|---|
| 2011 – Present | Member, ACRM BI-ISIG (Brain Injury Special Interest Groups) Community-based Treatment and Women's Issues Taskforce |
| 2010 – Present | Investigator, TIRR Research Council |
| 2009 – Present | Member, ACRM Early Career Course Planning Committee |
| 2009 – Present | Editor-in-Chief, <i>Perspectives on Social Work</i> , University of Houston |
| 2009 – 2011 | Planning Committee Member, Doctoral Social Work Student Research Symposium, Graduate College of Social Work – University of Houston |
| 2008 – 2009 | Editorial Board Member, <i>Perspectives on Social Work</i> , University of Houston |

CERTIFICATIONS

| | |
|----------------|--|
| 2011 – Present | Medical Reserve Corps Volunteer, Harris County Gateway to Care |
| 2007 - Present | Certified Clinical Research Professional (CCRP) |
| 2007 - Present | Certified Health Education Specialist (CHES) |

PROFESSIONAL EXPERIENCE

2004 - Present

Research Assistant II/ Pre-doctoral Fellow, Brain Injury Research Center at TIRR Memorial Hermann

Rehabilitation & Research Training Center on Developing Strategies to Foster Community Integration and Participation for Individuals with TBI Grant (2009-Present)

Recruit Spanish-speaking persons with TBI for a project on case coordination and resource facilitation of vocational rehabilitation services. Conduct neuropsychological assessments and psychosocial interviews in participants' homes. Perform case management and resource facilitation. Conduct statistical analyses for center's projects as needed. Assist in manuscript writing. Locate and perform outreach services to community organizations serving Spanish-speaking clientele. Train staff at community organization regarding the needs of persons with TBI and how to integrate them into existing programs. Translate consent forms, assessment materials, and training and dissemination materials into Spanish. Assist in the translation of training project website, newsletter, and its updates into Spanish: www.tbicommunity.org.

Texas Traumatic Brain Injury Model System of TIRR Grant (2007- Present)

Recruit and consent participants for the Texas Traumatic Brain Injury (TBI) Model System of TIRR longitudinal study and collaborative project on sexuality after TBI. Coordinate and conduct follow-up structured interviews post-injury with study

participants. Oversee data collection of follow-up study research assistants. Code and enter data into the TBI Model System National Database. Assist in the translation and/or selection of Spanish language assessments for the National Traumatic Brain Injury Model System. Conduct sexuality assessments for the Sexuality after TBI project. Conduct statistical analyses and assist in manuscript writing.

Rehabilitation & Research Training Center on Community Integration of Persons with TBI Grant (2004-2009)

Screened, recruited, and consented patients with TBI admitted to the Neurosurgery service at Ben Taub General Hospital (BTGH) for three research protocols. Tracked patients for six months after discharge from BTGH. Conducted psychosocial interviews and behavioral assessments in participants' homes. Collected, scored, and coded data into database for analysis. Conducted statistical analyses for center's projects. Assisted in manuscript writing. Conducted three-month telephone follow-up calls for a substance abuse project. Designed and maintained database for two research protocols. Translated consent forms and assessment materials into Spanish. Translated training project website, newsletter, and its updates into Spanish: www.tbicommunity.org.

2002 - 2005

Telemetry Patient Care Technician, Memorial Hermann NW Hospital

Transcribed and processed physician orders as Unit Secretary. Answered calls for the telemetry unit. Monitored, interpreted, and reported EKG cardiac rhythms of patients for the hospital as Monitor Technician. Monitored and recorded vital signs for telemetry patients as Patient Care Assistant. Assisted nurses with direct patient care. Translated for physicians, social workers, and nurses for DNR orders, surgical procedures, or as needed.

TEACHING EXPERIENCE

2012 – Present

Adjunct Professor, SOCW 7305: Evaluation of Practice, Graduate College of Social Work, University of Houston and SOCW 7350: Overrepresentation of Minority Males in the Criminal Justice System (Co-teach with Rev. William Lawson).

2012 ***Guest Lecturer***, PSYC 6340: Neuropsychological Rehabilitation, "Cultural Competence in Rehabilitation Research." Department of Psychology, University of Houston under direction of Allison Clark, Ph.D.

2011-2012

Guest Lecturer, SOCW 8326: Advanced Multivariate Statistics, "Structural Equation Modeling" and "Exploratory and Confirmatory Factor Analysis." Graduate College of Social Work, University of Houston under direction of Professor Patrick Leung, Ph.D.

2010 – 2012

Graduate Teaching Assistant, Research and Knowledge Building in Social Work Practice, Graduate College of Social Work, University of Houston under direction of Professor Patrick Leung, Ph.D.

GRANT SUPPORT

07/2012 – 12/31/2013

“New paradigm: A mixed methods study on the impact of neurocognition, gender role conflict, and self identity on psychosocial adjustment to traumatic brain injury.”

Role: Principal Investigator

FAHS-BECK Fund for Research and Experimentation

Total Direct Costs: \$5,000

10/2013 – 04/2015

“Perception of Resource Availability and Accessibility in Spanish-speaking Persons with TBI and Their Caregivers.”

Role: Principal Investigator

TIRR Rehabilitation Innovations

Total Direct Costs: \$10,000

PEER-REVIEWED PUBLICATIONS

Sander, A. M., Maestas, K. L., Nick, T. G., **Pappadis, M. R.**, Hammond, F. M., & Hanks, R. (2013). Predictors of Sexual Functioning and Satisfaction One Year Following Traumatic Brain Injury: A TBI Model Systems Multicenter Study. *Journal of Head Trauma Rehabilitation*, 28(3), 186-94.

Pappadis, M. R., Sander, A. M., Leung, P., & Struchen, M. A. (2012). The impact of perceived environmental barriers on community integration in persons with traumatic brain injury. *Acta Neuropsychologica*, 10(3), 385-97.

Lequerica, A. H., Chiaravalloti, N. D., Sander, A. M., **Pappadis, M. R.**, Arango-Lasprilla, J. C., Hart, T., Baños, J. H., Márquez De La Plata, C.D., Hammond, F. M., & Sherman, T. E. (2012). The Community Integration Questionnaire: Factor structure across racial/ethnic groups in persons with traumatic brain injury. *Journal of Head Trauma Rehabilitation*. Advance online publication.

Sander, A.M., Maestas, K.L., **Pappadis, M.R.**, Sherer, M., Hammond, F.M., & Hanks, R. (2012). Sexual functioning one year following traumatic brain injury: Findings from a prospective traumatic brain injury model systems collaborative study. *Archives of Physical Medicine and Rehabilitation*, 93(8), 1331-7.

- Pappadis, M. R.**, Sander, A. M., Struchen, M. A., Leung, P., & Smith, D. W. (2011). Common misconceptions about traumatic brain injury among ethnic minorities with TBI. *Journal of Head Trauma Rehabilitation*, 26(4), 301-311.
- Sander, A. M., **Pappadis, M. R.**, Clark, A. N., & Struchen, M. A. (2011). Perceptions of community integration in an ethnically diverse sample. *Journal of Head Trauma Rehabilitation*, 26(2), 158-69.
- Struchen, M. A., **Pappadis, M. R.**, Sander, A. M., Burrows, C. S., & Myszka, K. A. (2011). Examining the contribution of social communication abilities and affective/behavioral functioning to social integration outcomes for adults with traumatic brain injury. *Journal of Head Trauma Rehabilitation*, 26(1), 30-42.
- Clark, A. N., Sander, A. M., **Pappadis, M. R.**, Evans, G., Struchen, M. A., & Chiou-Tan, F. Y. (2010). Caregiver characteristics and their relationship to health service utilization in minority patients with first episode stroke. *NeuroRehabilitation*, 27(1), 95-104.
- Sander, A. M., Clark, A., & **Pappadis, M. R.** (2010). What is community integration anyway?: Defining meaning following traumatic brain injury. *Journal of Head Trauma Rehabilitation*, 25(2), 121-7.
- Sander, A. M., **Pappadis, M. R.**, Davis, L. C., Clark, A. N., Evans, G., Struchen, M. A., et al. (2009). Relationship of race/ethnicity and income to community integration following traumatic brain injury: Investigation in a non-rehabilitation trauma sample. *NeuroRehabilitation*, 24(1), 15-27.
- Struchen, M. A., **Pappadis, M. R.**, Kurtz, D. M., Clark, A. N., Davis, L. C., & Sander, A. M. (2008). Perceptions of communication abilities for persons with traumatic brain injury: Utility of the La Trobe Communication Questionnaire. *Brain Injury*, 22(12), 940-951.
- Struchen, M. A., Clark, A.N., Sander, A. M., **Mills, M. R.**, Evans, G. and Kurtz, D. (2008). Relation of executive functioning and social communication measures to functional outcomes following traumatic brain injury. *NeuroRehabilitation*, 23(2), 185-198.

PRESENTATIONS

- Pappadis, M. R.** (2014, January). *Self-awareness of deficits and realistic goal-setting among Black American males with traumatic brain injury*. Abstract for oral presentation at the 2014 Annual Conference of The Society for Social Work and Research (SSWR), January 15 – 19, San Antonio, Texas.
- Pappadis, M. R.**, Struchen, M. A., Mazzei, D. M., & Sander, A. M. (2013, November). *A preliminary model of social integration and emotional functioning for persons with TBI*.

Abstract for poster presentation at the 2013 American Congress of Rehabilitation Medicine – American Society of Neurorehabilitation (ACRM-ASNR) Joint Educational Conference, November 12 – 16, Orlando, Florida.

Davis, L., Sander, A., Bogaards, J., & **Pappadis, M. R.** (2013, November). *MPAI-4 discrepancy ratings of abilities predict memory and executive functioning performance after traumatic brain injury*. Abstract for poster presentation at the 2013 American Congress of Rehabilitation Medicine – American Society of Neurorehabilitation (ACRM-ASNR) Joint Educational Conference, November 12 – 16, Orlando, Florida.

Pappadis, M.R., & Sander, A. M. (2012, July). *Perspectives of survivors of traumatic brain injury (TBI): Positive and negative influences on quality of life and self-concept*. Abstract presented for oral presentation at the Social Work Social Development 2012: Action and Impact conference, July 8-12, Stockholm, Sweden.

Pappadis, M. R., Sander, A. M., & Mazzei, D. M. (2012, March). *Soy diferente: Experiences of Spanish-speaking persons with traumatic brain injury*. Poster presented at the 2012 Race, Ethnicity, and Disabilities: State of the Science Conference, March 1-2, Arlington, VA.

Lequerica, A. H., Chiaravalloti, N. D., Sander, A. M., **Pappadis, M. R.**, Arango-Lasprilla, J. C., Hart, T., Baños, J. H., Márquez De La Plata, C.D., Hammond, F. M., & Sherman, T. E. (2012). *The Community Integration Questionnaire: Factor structure across racial/ethnic groups in persons with traumatic brain injury*. Poster presented at the 2012 Santa Clara Valley Brain Injury Conference, February 23 – 25, San Jose, CA.

Pappadis, M. R. (2011, December). *Am I still the same person?: Psychosocial adjustment to traumatic brain injury*. Presented at the 2011 Social Work Research Conference, December 2-3, Houston, TX.

Pappadis, M. R. (2011, June). Culturally competent data collection: Addressing culture and language to improve data quality. In J. Wright's: *TBI Data Collection in the 21st Century: Advances and Issues*. Symposium conducted at the 3rd Federal Interagency Conference on Traumatic Brain Injury, Washington, D.C.

Pappadis, M. R., Sander, A. M., & Struchen, M. A. (2010). *Impact of traumatic brain injury on quality of life and self-concept: Perspectives of survivors in an ethnically diverse sample*. Poster presented at the 2010 American Congress of Rehabilitation Medicine – American Society of Neurorehabilitation (ACRM-ASNR) Joint Educational Conference, October 21 – 23, Montreal, Quebec, Canada.

Pappadis, M. R. (2010, September 16). *Qualitative research: Immersing yourself in the experience*. Presented at TIRR Memorial Hermann, Houston, TX.

Pappadis, M. R., Sander, A. M. & Struchen, M.A. (2010). *Perceived environmental barriers of persons with traumatic brain injury*. Presented at the 2010 Joint World Conference on Social Work and Social Development: The Agenda, June 10-14, 2010, Hong Kong, People's Republic of China.

Pappadis, M. R., Sander, A. M., & Struchen, M. A. (2009, October). *Validity of the Acceptance of Disability Scale for persons with traumatic brain injury in an ethnically diverse sample*. Poster presented at the annual meeting of the American Congress of Rehabilitation Medicine – American Society for Neurorehabilitation Joint Educational Conference, Denver, Colorado.

Pappadis, M. R., Sander, A. M., & Struchen, M. A. (2009, October). *Relationship of perceived attitudinal barriers and community integration to psychosocial adjustment to disability in persons with traumatic brain injury*. Poster presented at the annual meeting of the American Congress of Rehabilitation Medicine – American Society for Neurorehabilitation Joint Educational Conference, Denver, Colorado.

Sander, A. M., **Pappadis, M. R.,** & Struchen, M. A. (2009, October). *Perceptions of community integration in an ethnically diverse sample*. Poster presented at the annual meeting of the American Congress of Rehabilitation Medicine – American Society for Neurorehabilitation Joint Educational Conference, Denver, Colorado.

Pappadis, M. R. (2009, September). *A TBI education program for persons from diverse backgrounds*. Presented at the Community Integration of Persons with Traumatic Brain Injury, Advances in Research and Implications for Treatment Conference, Houston, Texas.

Pappadis, M. R., Struchen, M. A., Sander, A. M., Leung, P., & Smith, D. W. (2009, March). *Common misconceptions about traumatic brain injury (TBI) among ethnic minorities with TBI*. Poster presented at the first International Conference on Culture, Ethnicity, and Brain Injury Rehabilitation, Arlington, Virginia.

Pappadis, M. R., Struchen, M. A., Sander, A. M., Davis, L. C., Mazzei, D. M., Leung, P., et al. (2009, March). *Effectiveness of an educational intervention on common TBI misconceptions among ethnic minorities*. Poster presented at the first International Conference on Culture, Ethnicity, and Brain Injury Rehabilitation, Arlington, Virginia.

Sander, A. M., **Pappadis, M. R.,** & Struchen, M. A. (2009, March). *Racial/ethnic differences in community integration activities*. Poster presented at the first International Conference on Culture, Ethnicity, and Brain Injury Rehabilitation, Arlington, Virginia.

Balkan, B., Cummings, T., Leal, R., **Pappadis, M. R.,** Rose, A., & Walijarvi, C. (2009, March 5). *Interdisciplinary and multidisciplinary research: Concepts and practice*. Presented at the Fifth Annual Doctoral Social Work Student Research Symposium of the University of Houston G.C.S.W. Doctoral Program and G.C.S.W. Alumni Association, Houston, TX.

- Sander, A. M., **Pappadis, M. R.**, Davis, L. C., Clark, A. N., Evans, G., Struchen, M. A., et al. (2008, October). *Race/ethnicity, income, and community integration: Investigation in a non-rehabilitation sample*. Poster presented at the American Congress of Rehabilitation Medicine – American Society for Neurorehabilitation Joint Educational Conference, Toronto, Ontario.
- Sander, A. M., **Pappadis, M. R.**, Clark, A. N., Struchen, M. A., Tan, F. C., Rintala, D., et al. (2008, October). *Relationship of health beliefs to health service utilization in minority persons with first episode stroke*. Poster presented at the American Congress of Rehabilitation Medicine – American Society for Neurorehabilitation Joint Educational Conference, Toronto, Ontario.
- Struchen, M. A., Clark, A. N., Sander, A. M., **Mills, M. R.**, Evans, G., & Kurtz, D. (2008, February). *Executive functioning, social communication, and functional outcome after traumatic brain injury*. Poster presented at the 36th annual meeting of the International Neuropsychological Society, Waikoloa, Hawaii.
- Sander, A. M., Clark, A. N., Nakase-Richardson, R., Sherer, M., Malec, J. F., Davis, L. C., **Mills, M. R.**, & Struchen, M. A. (2008, February). *Family functioning and community integration following traumatic brain injury*. Poster presented at the 36th annual meeting of the International Neuropsychological Society, Waikoloa, Hawaii.
- Struchen, M. A., Sander, A. M., Clark, A. N., Kurtz, D. M., **Mills, M. R.**, & Davis, L. C. (2007, February). *Concurrent validity of the script analysis measure as a test of executive functioning for persons with traumatic brain injury*. (2007, February). Poster presented at the 35th annual meeting of the International Neuropsychological Society, Portland, OR.
- Struchen, M. A., Sander, A. M., Clark, A. N., Kurtz, D. M., Davis, L. C., & **Mills, M. R.** (2007, February). *Reliability and discriminant validity of the Script Analysis Measure for persons with traumatic brain injury*. (2007, February). Poster presented at the 35th Annual Meeting of the International Neuropsychological Society, Portland, OR.

HEALTH EDUCATION PUBLICATIONS

- Sander, A. M., Moessner, A. M., Kendall, K. S., **Pappadis, M. R.**, Hammond, F. M. & Cyborski, C. M. (2010). *Sexual functioning and satisfaction after traumatic brain injury: An educational manual*. Houston, TX: Baylor College of Medicine.
- Struchen, M. A., Roebuck, T. M., **Pappadis, M. R.**, & Ferguson, J. E. (2008). *I have a what?!: A guide for coping with mild TBI*. Houston, TX: Baylor College of Medicine.

Struchen, M. A., **Pappadis, M. R.**, Ferguson, J. E., & Roebuck, T. M. (2008). *I have a what?!: A guide for coping with moderate-to-severe TBI*. Houston, TX: Baylor College of Medicine.

PROFESSIONAL ASSOCIATIONS

American Association for Health Education (AAHE)

American Congress of Rehabilitation Medicine (ACRM) – Brain Injury Interdisciplinary
Special Interest Group (BI-ISIG)

American Public Health Association (APHA) – International Health

National Council of La Raza (NCLR) – Health

Society of Clinical Research Associates (SOCRA)

Society for Social Work and Research (SSWR)