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The Occupational Therapy Guide for Enabling Meaningful Social Participation Post-TBI

Vanessa Johnson

Hope Nelson

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by

Vanessa Johnson, MOTS and Hope Nelson, MOTS

Advisor: Dr. Sonia Zimmerman, Ph.D., OTR/L, FAOTA

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Faculty Advisor

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Hope L Reber
Signature

4/9/2021
Date

Vanessa Johnson
Signature

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With Gratitude – Vanessa Johnson & Hope Nelson

Abstract

Title: *The Occupational Therapy Guide for Enabling Meaningful Social Participation Post-TBI*

Introduction: The purpose of this scholarly project was to create a guide for occupational therapists to enable meaningful social participation throughout the rehabilitation phases with adults who have sustained a moderate or severe traumatic brain injury (TBI). The *Guide* discusses and presents assessments and interventions recommended for each phase of the rehabilitation process.

Methodology: A literature review was completed to understand traumatic brain injury, and the role occupational therapists have in addressing social participation with clients who are post-TBI. Sources included: textbooks, online databases, and government websites. The Canadian Model of Occupational Performance and Engagement (CMOP-E) was selected as the occupational therapy theoretical model to guide the development of the project. In addition to a unique focus on the role of the individual's spirituality, the CMOP-E presents enablement skills for the occupational therapist to use during intervention that enable the client to engage in meaningful occupations.

Results: The literature review revealed adults with a moderate or severe traumatic brain injury have deficits in skills required for successful and meaningful communication, often resulting in difficulty maintaining and establishing new relationships. However, while completing the literature review, the lack of occupational therapy literature regarding social participation with clients who are post-TBI was evident. Therefore, *The Occupational Therapy Guide for Enabling Meaningful Socialization Post-TBI* was created to assist in addressing the importance of social participation by occupational

therapists within acute care, inpatient rehabilitation, outpatient rehabilitation, and community rehabilitation settings.

Conclusion: Occupational therapists possess the skills and knowledge to assist adults to successfully return to community life following TBI. By addressing the skills required to engage in meaningful socialization, occupational therapists can help the client to successfully and appropriately communicate their needs, wants, and desires with their loved ones, as well as people within their communities. By utilizing *The Occupational Therapy Guide for Enabling Meaningful Socialization Post-TBI*, an occupational therapist can provide insight to both the client, and loved ones, regarding ways to address deficits, as well as increase overall satisfaction in occupations

Chapter I

Introduction

Problem

According to the Centers for Disease Control and Prevention (CDC), approximately 2.5 million traumatic brain injury (TBI) related emergency room visits occurred in 2014 (CDC, 2019). Sustaining a moderate or severe TBI can have a life-long effect on an individual's cognitive function, motor function, sensation, and behavior (Harrison-Felix et al., 2015). The cognitive deficits that adults with a TBI experience impact the ability to perform daily routines, roles, and hinder overall life satisfaction (Radomski, Anheluk, Bartzen, & Zola, 2016). Cognitive deficits often impact social relationships, which can lead to deprivation in the occupation of social participation (Hess & Perrone-McGovern, 2016; Radomski et al., 2016). According to Finch, French, Ou & Flemming, "TBI can have long-lasting effects on psychosocial functioning, affecting engagement in social communication activities" (2016, p.889). This information supports the need for social participation to be included in occupational therapy intervention in all phases of rehabilitation when an adult has sustained a moderate or severe TBI. A literature review of engagement in social participation within the TBI population indicated a noticeable gap regarding the importance of occupational therapists addressing social participation with individuals who are post-TBI.

Purpose

The purpose of *The Occupational Therapy Guide for Enabling Meaningful Socialization Post-TBI* is to enhance an occupational therapist's ability to address and incorporate social participation when working with the TBI population, in all phases of the rehabilitation process. The *Guide* presents client factors and social skills to be considered for each rehabilitation setting. Additionally, recommendations for assessments, enablement skills and interventions are provided to be utilized in conjunction with the OT's clinical reasoning and clinical judgement skills. To be effective, the occupational therapist is responsible for determining the applicableness of each recommendation, and for adapting the recommendations to remain client-centered while carrying out intervention.

Theoretical Model

The Canadian Model of Occupational Performance and Engagement (CMOP-E) was utilized to develop *The Occupational Therapy Guide for Enabling Meaningful Socialization Post-TBI* due to the extensive focus on enablement skills and spirituality. According to the CMOP-E, the person lies at the center of the model, consisting of affective, physical and cognitive factors (Townsend & Polatajko, 2013). Additionally, at the center of the person is spirituality, which is the meaning and purpose behind an individual's engagement in occupations. Spiritually is unique to each individual, as the individual will gain a sense of meaning, purpose, and connectedness through the context of their environment.

When an occupational therapist determines an individual's personal factors and sense of spirituality, they can draw upon enablement skills to increase occupational

performance and engagement (Townsend & Polatajko, 2013). According to the CMOP-E then ten enablement skills are: adapt, advocate, coach, collaborate, consult, coordinate, design/build, educate, engage, and specialize (Townsend et al., 2013). When used appropriately, enablement skills are beneficial for both the occupational therapist and individual, to enable meaningful and successful engagement in occupations.

The CMOP-E is appropriate for the TBI population due to the client-centeredness, and emphasis on enabling an individual within his or her environment, by engaging in occupations. The person and the personal factors are constantly influenced by their occupational engagements and environment (Townsend & Polatajko, 2013). Within the individual's environment, the CMOP-E highlights the necessity to address social change specifically if occupational disparities are present. Individuals in the TBI population experience numerous occupational disparities across all occupations, therefore providing client-centered intervention is imperative for each rehabilitation phase. Additionally, using the concept of spirituality, as defined by the CMOP-E, increases the level of client-centeredness. Addressing spirituality, or the meaning and motivation behind engagement, in every occupational therapy session is an essential aspect of therapy, to promote feelings of satisfaction, self-worth, and confidence (Polatajko et al., 2013a). This concept is especially important to address with the adult TBI population due to the deficits experienced post-TBI, and the possibility of decreased self-worth and confidence.

The CMOP-E concepts were utilized to structure The *Guide* in a logical and sequential manner, to increase ease for the user. The *Guide* initially presents an overview of CMOP-E concepts to be incorporated throughout each phase. Within each phase of

rehabilitation, the personal, occupational, and environmental aspects influencing social participation are presented.

Key Terms/Concepts

- **Community Reintegration**: The process of an occupational therapist assisting an individual in a community-based rehabilitation setting to functionally and successfully reintegrate into their community (Nadeau, 2016).
- **Rehabilitation phases**: The four most common rehabilitation phases include: acute care rehabilitation, inpatient rehabilitation, outpatient rehabilitation, and community rehabilitation.
- **Social participation**: The American Occupational Therapy Association defines social participation as, "an individual's ability to engage in social activities that result in successful interactions at the personal and community levels" (2014, p. S21).
- **Social participation**: Involving actions of at least two people in which they participate in situated activities where verbal and nonverbal skills enable the individuals to express themselves (Finch, Copley, Cornwell, & Kelly, 2016).
- **Social skills**: self-awareness, listening and empathizing, perception of social cues and others intentions and effective communication (Cole, 2011).
- **Traumatic brain injury (TBI)**: An injury that occurs when a sudden trauma, or external force, damages the brain and interrupts typical brain function (Dixon, 2017).
    - **Moderate TBI diagnostic criteria**: Normal or abnormal CT imaging, loss of consciousness for 30 minutes to 24 hours, more than 24 hours of an

altered consciousness or mental state post-traumatic amnesia for 1-7 days, a 9-12 on the Glascow Coma Scale (GSC) (O'Neil et al., 2013).

- **Severe TBI diagnostic criteria**: Normal or abnormal CT imaging, loss of consciousness for more than 24 hours, more than 24 hours of an altered consciousness or mental state, post-traumatic amnesia for more than 7 days, and less than 9 on the GSC (O'Neil et al., 2013).

Overview of Chapters

The chapters in this scholarly project include a literature review, methodology, product, and summary. Chapter II explores the literature concerning traumatic brain injury (TBI), the impact of TBI on physical, cognitive, and emotional functioning, social participation as an occupation, the sequential recovery phases, and occupational therapy's role. Chapter III provides explanation regarding the creation of an occupational therapy guide through the use of the current literature and Canadian Model of Occupational Performance and Engagement (CMOP-E). Chapter IV presents a brief overview of *The Occupational Therapy Guide for Enabling Meaningful Socialization Post-TBI.* The entirety of the *Guide* can be located in Appendix A. Chapter V consists of a conclusion, limitations, recommendations, and overall findings of this scholarly project.

Chapter II

Literature Review

According to the Centers for Disease Control and Prevention (CDC), in 2014, approximately 2.5 million emergency room visits were related to traumatic brain injury (TBI) (CDC, 2019). TBI, also known as an acquired brain injury (ABI), occurs when a sudden trauma, or external force, damages the brain and interrupts typical brain function (Dixon, 2017; Pervez, Kitagawa & Chang, 2018). Flanagan (2015) reported that although TBI related deaths are decreasing overall, the prevalence of traumatic brain injuries is not. Advances in medicine and increased awareness of the life-long impact of TBI have resulted in individuals who experience such injuries, to seek medical attention and report incidences more frequently (Flanagan, 2015). The advances in medical knowledge regarding impairments following a TBI places an emphasis on the need for rehabilitation services following TBI, in order to combat the potential symptoms and deficits that can persist throughout an individual's lifespan (Flanagan, 2015; Powell, Rich, & Wise, 2016; Wheeler, Acord-Vira, & Davis, 2016).

Classification of a TBI is determined as mild, moderate or severe, and is based on the cause and location of the injury (i.e. penetrating vs. closed), computed tomography (CT) scan, Glasgow Coma Scale (GCS) and symptomatology (Dixon, 2017; Frazier, 2018). The GCS is an objective assessment used to determine an individual's functional status based on bodily responses, using a scale that ranges from 1 (worst) to 15 (best)

(Teasdale & Jennett, 1974). According to Teasdale and Jennett (1974), "three aspects of behavior are independently measured- motor responsiveness, verbal performance, and eye opening" (p.81). This scale is used to provide consistent data for medical professionals. According to the GCS, a mild TBI is defined as scoring 13-15, moderate 9-12, and severe less than 9 (Andriessen et al., 2011). A CT scan is several x-ray images taken from multiple angles, combined, to help provide a more thorough image to determine location of a bleed in or around the brain (Mayo Clinic Staff, 2020). The Mayo Clinic Staff (2020) reported that although CT scans have many uses, the ability to complete a scan quickly to provide medical professionals with diagnosis for a TBI is highly valuable. In addition to the knowledge gathered from interpreted CT scans, location of the injury, and GCS, the person's age and symptomatology are also factors which are heavily relied on to determine the next steps in the patient's medical care and prognosis (Bramlett & Dietrich, 2015; Dixon, 2017; Lewis & Horn, 2013).

Traumatic Brain Injuries: Causes, Diagnosis and Symptoms

While there are numerous causes of traumatic brain injuries, the three most common incidents leading to TBI in the United States are falls, being struck by, or against an object, and motor vehicle crashes (CDC, 2019). Potential changes that an adult may experience post-TBI include impairments in physical, cognitive, emotional, and behavioral functioning (Dixon, 2017; Lewis & Horn, 2013; Nadeau, 2016). Mild traumatic brain injuries are often separated, medically speaking, from moderate to severe TBIs due to differences in causes, symptomatology, and impact on overall functioning.

A mild traumatic brain injury (mTBI), often referred to as a concussion, is most commonly "caused by a blunt head trauma, and/or acceleration or deceleration force to

the head, and refers to the initial impact of the injury" (Dixon, 2017, p. 216). Cooksley and colleagues (2018) reported that the most common symptoms experienced post-mTBI are headaches, fatigue, and feeling down. Symptoms following mild TBI may last anywhere from several weeks, to months, or even throughout an individual's entire lifetime (Cooksley et al., 2018; Dixon, 2017) Although such symptoms may seem mild, individuals still experience changes in daily life activities such as self-cares, feeling fatigued more easily and frequently at work, and home management (Cooksley et al., 2018; Nadeau, 2016).

According to O'Neil and associated (2013), to be diagnosed with a mTBI upon arrival at an emergency department or health care clinic a person must meet the following criteria: a CT scan showing no changes in structure of brain, loss of consciousness for 0-30 minutes, altered mental state and amnesia for less than 24 hours, and a 13-15 on the GSC. Although different for everyone, once determined an individual has a mTBI, dependent on their state of mental/physical functioning, they are typically released from the hospital within 1-3 days with recommendations to "rest their brain" (O'Neil, 2013).

Moderate or severe TBIs are often the result of falls, assaults, blunt trauma or motor vehicle accidents (Dixon, 2017). Symptomatology is similar between moderate and severe TBIs as both present with several impairments in the individual's physical (i.e. headache, fatigue), cognitive (i.e. memory, concentration), emotional (i.e. irritability, motivation), behavioral (i.e. impulsive) and psychosocial (i.e. interpersonal, dating skills) well-being (Bramlett & Dietrich, 2015; Dixon, 2017; Gutman & Leger, 1997; Powell et al., 2016). Impairments caused by moderate or severe TBI often result in loss of independence, and an overall decrease in daily life activities, which can ultimately lead to

new behaviors and decreased engagement in socially satisfying activities (D'Cruz, Howie, & Lentin, 2016; Dixon, 2017; Williams, Wood, Alderman, & Worthington, 2020). Williams and associates (2020) reported that new behaviors commonly observed in individuals post-TBI often include increased aggression, decreased motivation, and lack of appropriate judgement and awareness in social situations.

According to O'Neil and associates (2013), to be diagnosed with a moderate or severe TBI an individual may have normal or abnormal CT imaging, loss of consciousness for 30 minutes to 24 hours (moderate), more than 24 hours (severe), more than 24 hours of an altered consciousness or mental state, post-traumatic amnesia for 1-7 days (moderate), or more than 7 days (severe), a 9-12 (moderate) or less than 9 (severe) on the GSC.

Impact on Physical, Cognitive, and Emotional Functioning

Physical, cognitive, and emotional functioning are all aspects of individuals' lives that impact their ability to be successful day to day. As an adult, important and valued life activities often include being independent, working, managing a household, raising children, engaging in leisure activities socially, and having successful and meaningful relationships. Erler and colleagues (2018) completed a longitudinal study of 1,974 community-dwelling adults who had sustained a TBI and reported physical functioning, over cognitive and emotional functioning, has the largest influence on an adult person's participation in society after sustaining a TBI. Despite this conclusion, experiencing impairments in one functional aspect, such as physical functioning, typically impacts another, which makes it important to understand the impact of TBI on physical, cognitive, and emotional functioning, separately from one another.

Physical.

While not every individual experiences a physical deficit following a TBI, many do. Physical functioning may be impacted following a traumatic brain injury from either the accident which caused the injury itself, such as a broken leg, neck, etc., or, neurological trauma which impacts the brain's ability to communicate with a person's body (Bramlett & Dietrich, 2015). Regardless of how function is lost physically, simple self-care tasks such as bathing, dressing, eating, etc., may become difficult, leading to frustration and feelings of loss of independence. In a scenario where a person's physical deficit is due to musculoskeletal injury, orthopedic surgeons, nurses, and doctors will be involved in a patient's care to provide appropriate and effective intervention for the injury.

Additionally, motion sensitivity, balance and coordination deficits, sensory sensitivity, and/or vision changes are often a result of a TBI (Cooksley et al., 2018; Dixon, 2017). Deficits in these areas can contribute to increased anxiety, fatigue, and overall frustration, leading to an overall decrease in motivation to participate in activities throughout a day. In translation, deficits such as the previously noted can contribute to several difficulties with tasks needed to engage in driving, leisure activities, socializing, and working.

Cognitive.

Cognition involves thinking skills, and is necessary to be independent with day-to-day tasks and to be involved with others, both socially and emotionally. Cognitive impairments may include, but are not limited to, metacognition and social cognition dysfunction, attention difficulties and hypersensitivity to external stimuli (Hess &

Perrone-McGovern, 2016; Williams et al., 2020). For example, sustaining conversation, getting restful sleep, interpreting non-verbal cues from others, empathizing, and making decisions can become difficult for individuals post-TBI. Depending upon a person's stage of life, problems in these areas may present with difficulty at work, in personal and professional relationships, and overall engagement in important life activities (D'Cruz, Howie, & Lentin, 2016).

Aphasia, or difficulty understanding and expressing speech, is a common cognitive deficit experienced by TBI survivors, which impacts general communication with others (O'Keeffe, Dunne, Nolan Cogley, & Davenport, 2020). After a TBI, experiencing these impairments is often scary and frustrating because of the changes noticed during routine tasks and communication. In a research study completed by Cooksley and colleagues (2018), headaches, brain fog and difficulty remembering things are major components impacting productivity at work, when compared to productivity before injury. In turn, the impact of a person's injury on their work productivity may contribute to increased financial and emotional stress (Cooksely et al., 2018), which should be addressed as an individual is recovering and rehabilitating following a TBI.

Emotional.

Emotional functioning may be impacted in several ways after someone has sustained a traumatic brain injury. In an interpretive phenomenological analysis carried out by O'Keeffe, and colleagues (2020), attitudes, emotional awareness, guilt, and loss are common feelings expressed by those struggling to live life post-TBI. These emotional struggles often impact a person's ability to communicate with their loved ones, to work professionally, and to reason logically, due to distraction of emotion.

Changes in emotional functioning such as increased agitation, and mood disorders, (Cooksley et al., 2018) often lead to aggressive behaviors as a result (Flanagan, 2015), which can make caring for a patient and/or loved one challenging. Such emotional changes may be present due to the physical and cognitive deficits that are being experienced by the individual, which makes it important to understand the overall impact of a traumatic brain injury on someone's daily life.

Health Care Intervention

Due to the complexity and wide range of severity of traumatic brain injuries, the health professionals on an individual's care team may vary. The most common disciplines involved in the intervention phase are neurology, nursing, psychiatry and psychology, occupational therapy, physical therapy, and speech language pathology (Beaulieu et al., 2015; Kreitzer et al., 2019; Nadeau, 2016). After initially presenting to an emergency department due to a TBI, depending upon severity, a person moves through different stages of health care such as an inpatient hospital stay, inpatient rehabilitation stay, outpatient rehabilitation, and finally community re-integration. Throughout the entire intervention process, typically beginning in an acute inpatient setting, a case manager or social worker is likely to be following along to ensure once an individual is ready to leave the hospital, they have a safe and appropriate place to be discharged to and the means to get there (Greenwald, 2010).

Emergency Department

When a patient presents to an emergency department (ED) after sustaining a TBI, depending upon severity, they are assessed by a neurology doctor and nursing, images of their brain are taken, and the main goal of their healthcare is medical stability. Once

medically stable, which could be after one hour, or several days, an individual would be transferred to a neuro floor, which would be considered an acute inpatient hospital stay. Depending on length of stay in the ED, classification of TBI may be made prior to transfer to a different unit, or may still be in the process due to several medical examinations, testing, and timing (Dixon et al., 2020).

Acute Inpatient Hospital

In an acute inpatient hospital stay, orders for occupational therapy, speech language pathology (SLP), and physical therapy (PT) are made, in addition to continuation of care by nursing, neurology, and imaging, if needed (Greenwald, 2010). If behavioral symptoms arise and are noted by a professional on the patient's team, psychiatry or behavioral health will be asked to assess the patient, as well.

Occupational therapists are involved to address cognition, physical symptoms, and overall functionality while engaging in basic daily self-cares (AOTA, 2017). Speech language pathologists commonly target deficits in swallowing, orientation and memory, and language expression and comprehension (Beaulieu et al., 2015). Physical therapists target deficits in movement, vestibular function, and motor functions when working with individuals post-TBI (Quatman-Yates et al., 2020). It is common for occupational therapy, speech therapy and physical therapy's scopes of practice to overlap at times, leaving room for much collaboration and creativity while providing intervention to a patient. Independent from one another, the different therapies follow a patient throughout their recovery, discontinuing care when they feel there is no longer a need for their service.

Inpatient Rehabilitation

Inpatient rehabilitation is where a person will transfer once they are medically stable, and are able to tolerate a more intensive amount of therapy, PT, OT, SLP, daily, to start rehabilitating skills that were lost due to their TBI. The goal of this step in recovery is to assist the patient to gain skills back, or find new ways to be as independent as possible (BIAUSA, 2020). Depending upon a person's deficits, speech, physical, and occupational therapies are not always involved, but occasionally they are. For example, if a patient is not in need of speech therapy services in the acute inpatient setting, they will likely not be seen by SLP in inpatient rehabilitation, which means more time will be dedicated to physical and occupational therapy.

Outpatient Rehabilitation

Once an individual has reached the point in their recovery to be transitioned to outpatient rehabilitation, the individual mainly is seen by therapy services to continue to increase their independence and level of functionality. Therapy duration and intensity increases in this setting due to the patient's medical stability and increased endurance. This involves functional goals to increase an individual's ability to engage in tasks such as activities of daily living (ADLs), instrumental activities of daily living (IADLs), functional communication, mobility, independence, safety, and socialization (Greenwald, 2010).

Community Reintegration

Lastly, after a significant amount of time engaging in rehabilitation and seeking medical attention, a person must begin the steps of reintegrating into society and their community. This part of the recovery process looks different for everyone, because no brain injury is the same. Community integration commonly encompasses three main

areas: employment and/or education, independent living, and social activity, with the ultimate goal being full participation in society (Nadeau, 2016; Sander, Clark, & Pappadis, 2010).

Callaway, Sloan, and Winkler (2005), senior occupational therapists who have substantial clinical experience with the neurotrauma population, reported on the role of occupational therapy in "supporting and fostering friendships" following TBI (p.257). The area of social activity, specifically friendships and intimacy, has been found to be underrepresented in the outpatient rehabilitation phase when preparing for community integration (Callaway, Sloan, & Winkler, 2005; Sander, Clark, & Pappadis, 2010). These finding raise concerns considering the significant amount of literature dedicated to the psychosocial deficits that individuals with a TBI experience, as well as evidence supporting the necessity of including interventions that improve socialization (Cassel et al., 2019; Togher et al., 2014; Tran et al., 2018). Jacinta Douglas, a health professional with qualifications in speech pathology and clinical neuropsychology disciplines has done extensive research regarding adults with an acquired brain injury and their ability to engage in social participation (La Trobe University Scholars, 2020). Douglas (2019), stated, "early attention to supporting friendships is warranted and demands systematic consideration from the perspective of proactive and ongoing intervention" (p.18).

Social Participation

The American Occupational Therapy Association (AOTA) (2014) defines social participation as "an individual's ability to engage in social activities that result in successful interactions at the personal and community levels" (p. S21). Social participation also referred to as social communication or social interaction has

alternatively been described as involving actions of at least two people in which they participate in situated activities where verbal and nonverbal skills enable the individuals to express themselves (Finch, Copley, Cornwell, & Kelly, 2016; Wiley & Alexander, 1986). The relationships an individual forms during social participation are an important aspect of an individual's wellbeing which contributes to one's social validation and self-worth (Douglas, 2019; Palmer & Herbert, 2016). Douglas (2019), who has done extensive research involving social communication deficits within the TBI population, reported that social participation is one of the most commonly reported sources of life meaning.

Social participation is complex and requires an individual to possess basic social skills in order to be successful. There are four major social skills that are considered vital to social participation: self-awareness, listening and empathizing, perception of social cues and other people's intentions, and effective communication (Cole, 2011; Milders, 2019).

Self-Awareness

Self-awareness is the ability to focus attention on oneself to understand and respond to one's own emotion and mental states (Cassel, McDonald, Kelly, & Togher, 2019; Morin, 2006). Through self-awareness derives the ability to take in others' perspectives and ultimately recognize social feedback and adjust accordingly (Bivona et al., 2014). Deficits in self-awareness have been linked to decreased social and behavioral skills as well as reduced quantity and quality of relationships for individuals who have sustained a traumatic brain injury (Trudel, Tryon, & Purdum, 1998). Geytenbeek, Fleming, Doig & Ownsworth (2017) found that individuals with impaired self-awareness

had significantly poorer relationships than those who had no impaired self-awareness. The results also showed that those specifically with severe traumatic brain injuries were found to have higher rates of impaired self-awareness than those with a mild or moderate TBI (Geytenbeek et al., 2017).

Deficits in self-awareness can present in many different ways, such as the inability to recognize problems, decreased awareness of how one's own behavior or words negatively affect others, and reduced ability to make an accurate assessment of their emotional, cognitive, or behavioral changes (Bivona et al., 2014).

Listening and Empathizing

Spikeman et al., (2013) found that individuals with a moderate to severe TBI had significant deficits in emotion recognition compared to healthy individuals. Theory of Mind (ToM) is the "metalizing ability to infer others' beliefs and intentions" (Channon, Pellijef, & Rule, 2005). Since individuals post-TBI have impaired theory of mind, they experience difficulty imagining what another person is experiencing and what they may be feeling; therefore, making them unable to empathize with other people's situations (Knox & Douglas, 2009; McDonald & Flanagan, 2004). A deficit in expressing empathy can manifest as insensitive, self-centered, absent, or withdrawn leading to problems in interpersonal relationships (Bay, Blow & Yan, 2012; Sousa et al., 2011).

Perception of Social Cues and Others' Intentions

Nonverbal communication is an important aspect of social interaction because it assists individuals in interpreting and understanding the social cues that are being provided throughout each social interaction (Cole, 2011; Spikman et al., 2013). Nonverbal communication portrays an individual's emotional tone, meaning, and true

feelings. Examples of nonverbal behavior are facial expressions, posture, gestures, eye contact, and tone of voice (Cole, 2011). Spikman et al. (2013), findings indicated that individuals who have experienced a moderate to severe TBI commonly have deficits in recognition of nonverbal communication, specifically facial affect. This can lead to misinterpretation of conversations, difficulty comprehending sarcasm or irony, and recognizing social cues (Finch, Copley, Cornwell, & Kelly, 2016).

Effective Communication

Effective communication involves combining skills involved in self-awareness, listening and empathizing, and perceiving social cues, and utilizing them effectively. An individual can effectively communicate if they are able to start conversations, express emotions appropriately, and ask questions that are socially acceptable (Cole, 2011). Cognitive communication and psychosocial deficits are commonly seen in individuals with a TBI that make every day social interactions difficult (Grayson, Brady, Togher & Ali, 2020; Tran et al., 2018). Some of these deficits include but are not limited to over talkativeness, slow response, attention, and working memory (Saxton et al., 2013; Togher et al., 2014). The negative impact that communication deficits have on familial relationships and friendships can contribute to other psychosocial dysfunction such as depression, anxiety, and isolation (Tran et al., 2018).

Individuals with traumatic brain injuries experience many psychosocial deficits which lead to difficulty engaging in social participation, including social isolation and loss of friendships (Cassel et al., 2019; Tran et al., 2018). Social isolation and loss of friendships can lead to negative outcomes such as depression and anxiety (Hess & Peronne-McGovern, 2016). Clearly, social participation is an important aspect to

community integration as part of the rehabilitation process for the traumatic brain injury population. Occupational therapists are well-equipped to address this important element of rehabilitation. Occupational therapists have the medical knowledge of afflictions and deficits, the value of the subjective and uniqueness of the TBI experience, and the viewpoint of social participation being a vital occupation in everyday life.

Occupational Therapy's Role

Occupational therapy is a health care profession that promotes the highest level of independence for individuals through engagement in meaningful and necessary activities (Nadeau, 2016; Powell et al., 2016). Individuals who sustain any injury that results in a loss of function, experience different types and amounts of impairment, impacting several different activities, which accentuates the need for an individualized therapy process (Dixon, 2017; Nadeau, 2016; Radomski, Anheluk, Bartzen, & Zola, 2016). Occupational therapists use a holistic lens to analyze individuals' abilities, and work in collaboration with the individual to determine their goals for everyday life (Nadeau, 2016).

Occupations include activities of daily living (ADLs), instrumental activities of daily living (IADLs), rest and sleep, education, work, play, leisure, and social participation (AOTA, 2014). The American Occupational Therapy Association (AOTA) (2014) defines an occupation as, "Daily life activities in which people engage" (p.S43). Occupations include both activities that people need to do, and want to do. Regardless of a person's want or need to complete certain tasks, daily life activities are impacted when an individual experiences a health problem. In order to successfully engage in necessary and/or desired occupations, such as social participation, several performance skills are needed.

Performance skills are classified into three categories, motor, process, and social interaction skills. AOTA defines performance skills as, "observable elements of action that have an implicit functional purpose; skills are considered a classification of actions, encompassing multiple body capacities (body functions and structures) and, when combined, underlie the ability to participate in desired activities" (2014, p.S25). Several skills within each category may be impacted when body systems are altered due to a moderate or severe TBI. For example, when a person experiences symptoms associated with aphasia, a cognitive performance skill that may be impacted would be producing speech that is easily understood by others. Another example, a motor performance skill deficit, would be experiencing difficulty coordinating hands bilaterally to work together to grasp a cup and drink out of it.

Targeting deficits in the performance skills that have been impacted by a TBI is the ultimate goal of rehabilitation. By targeting specific skills, the hope is to enable a person to participate in activities that they want and need to engage in. Adults who have had a moderate to severe traumatic brain injury are at risk to experience life-long symptoms, affecting their overall lifestyle (Dixon, 2017). While remaining client centered, the unique role of occupational therapy can help to build a bridge to recovery, and increase life satisfaction following an injury, such as a TBI.

Although primary occupations differ from person to person, as adults, every-day occupations typically include ADLs, IADLs, rest and sleep, work, and social participation. In the acute stage, activities such as self-cares and functional mobility are typically of primary concern when addressing deficits immediately following a TBI (AOTA, 2017). Following the acute stage of recovery from TBI, an occupational

therapist will likely begin to address IADLs and other occupations such as work tasks and social/leisure engagement (Callaway, Sloan, & Winkler, 2005; Nadeau, 2016). Occupations are at the center of OT practice, and are the primary basis of what intervention focuses on throughout a patient's course of therapy. Occupational therapists have the opportunity to address decreased engagement and occupational deficits in several different healthcare and community settings (Nadeau, 2016).

Course of Intervention

Occupational therapy practitioners provide intervention in a variety of settings. During an individual's acute hospital stay for a TBI, initial contact with occupational therapy is typically made. In an acute setting, OT focuses on overall medical stability, and the client's ability to participate in ADLs and move within their environment safely. During an acute stay, following an OT evaluation, a discharge recommendation is made by the healthcare team, as well as an occupational therapist individually. Several factors including overall medical status, severity of TBI, client factors, and rehabilitation potential are considered, to determine the best fit for each client to maximize progress (Lewis & Horn, 2013).

The settings in which early rehabilitation typically begins for individuals who have been diagnosed with a moderate to severe TBI include acute care, inpatient rehabilitation, sub-acute rehabilitation, outpatient rehabilitation, or skilled nursing facilities (Powell et al., 2016). Interventions within early rehabilitation settings typically focus on ADLs, strengthening, cognitive reorientation, and functional mobility. Since the patient is viewed as medically stable during this stage, rehabilitation is intensive and longer in duration, to start increasing functionality.

Once the injury is stabilized, and rehabilitation discharges the patient, the individual typically goes back to living in his/her community. From here, patients are often referred to some sort of continuation of therapy, to address deficits that still remain in areas such as social participation, mental health, and functionality needed for work tasks. Residential programs for individuals experiencing symptoms focus on "higher level motor, social, and cognitive skills in order to prepare the person with a brain injury to return to independent living and potentially to work" (BIAUSA, 2020).

Throughout the entire recovery process for individuals following a TBI, occupational therapists are a part of their healthcare team. Occupational therapists have professional skills that enable them to provide an appropriate evaluation and assessment of how an individual is performing necessary tasks, in relation to the demands of the environment surrounding them (Nadeau, 2016). By determining the demands of a client's surroundings, an occupational therapist will use clinical reasoning to determine which intervention path is going to be effective and efficient for their client's situation and occupational desires.

Interventions

In 2016, three systematic reviews were completed by occupational therapists regarding the effectiveness of interventions used with the adult traumatic brain injury population. Although these three reviews are not all inclusive of intervention possibilities, the results provide a thorough picture of the variety of interventions that can be used in occupational therapy practice. Interventions are provided individually or in groups, and are occupation or activity-based, preparatory or educational, and on behalf of

the patient, may involve advocating for oneself or receiving assistance to do so (AOTA, 2014).

A systematic review completed by Powell, Rich, and Wise (2016) concluded the following interventions were effective interventions for adults post-TBI to improve everyday activities and social participation: multidisciplinary and interdisciplinary treatment approaches, community-based rehabilitation programs, treatment approaches using client-centered goals and relevant contexts, social skills training and peer mentoring interventions, and lastly, community mobility interventions. These interventions are aimed to address process and social interaction performance skills to increase self-awareness of one's deficits, and improve basic social and communication skills by providing relevant and realistic therapy in groups as well as individually (Powell et al., 2016). Specifically, skills such as positioning, moving, attending, continuing and sequencing, noticing, accommodating, and replying are performance skills that will be addressed within these interventions (AOTA, 2014). Occupational therapists have the clinical expertise to have a hand in each of these intervention programs and/or approaches; however, little research has been done specifically on OT when providing the interventions (Powell et al., 2016).

Interventions to improve occupational performance for individuals with psychosocial, behavioral, and emotional impairments post-TBI were studied by Wheeler, Acord-Vira, and Davis (2016). Six types of interventions were identified that improve occupational functioning. The six interventions were: education, peer mentoring, goal-directed therapy, physical activity, skills training, and cognitive–behavioral therapy (CBT) (Wheeler, Acord-Vira, & Davis, 2016). By providing such interventions,

individuals have the opportunity to be exposed to situations that may inflict anxiety or the need for coping skills in a safe environment (Wheeler, Acord-Vire, & Davis, 2016). Social interaction performance skills are targeted within these interventions with hopes to address psychosocial, behavioral, and emotional impairments, which, when addressed, will impact individuals' abilities to engage in social participation.

Radomski and colleagues (2016) completed a systematic review to study interventions that address cognitive impairments and improve occupational performance after a TBI. The following listing of interventions appropriate for OT practice was reported: "interventions to address problems with executive function, attention, or self-awareness, interventions to address problems with memory, interventions to address multiple cognitive domains using general compensatory approaches, interventions to address multiple cognitive domains using computer-based brain training" (Radomski et al., 2016, p.1). Occupational performance in social participation and life satisfaction is likely to improve when awareness of deficits and the need for remediation of performance skills is determined (Radomski et al., 2016).

When referring to cognitive intervention, Radomski and colleagues (2016) concluded that, "occupational therapy practitioners are well positioned to lead this area of service delivery in their interdisciplinary clinical settings" (p.6). Once an occupational therapist determines an individual's performance skill deficits, client-centered interventions are provided based on therapy goals. Impairments in cognition, behavior, emotional, and psychosocial functioning have a profound impact on the important performance skills needed to engage with others socially, ultimately leading to an impact on meaningful relationships, which hinders overall life satisfaction (Erler et al., 2018,

O'Keeffe et al., 2020; Radomski et al., 2016). Impacted relationships and social engagement may lead to deprivation in overall occupational engagement (Hess & Perrone-McGovern, 2016; Radomski et al., 2016).

Summary

Adults who sustain a moderate to severe traumatic brain injury often experience deficits in physical, cognitive, and emotional functioning, impacting their level of independence, ability to care for oneself, complete daily tasks, and engage in meaningful relationships (Nadeau, 2016). While engagement in social participation has been found to be significantly impacted by TBI, there is a lack of professional literature within occupational therapy demonstrating how occupational therapy can address social participation needs during the rehabilitation process (Powell et al., 2016; Radomski et al, 2016). Individuals with a TBI face social isolation and loss of friendships leading to social deprivation and loneliness (Cassel et al., 2019; Tran et al., 2018). The common occurrence of social isolation and loss of friendships demonstrates the importance of addressing social participation and socialization throughout the duration of rehabilitation. Retaining an individual's skills and building new skills will contribute to success within her or his meaningful relationships. Occupational therapists are well-equipped to be a part of the rehabilitation team and address deficits that significantly impact an individual's ability to successfully engage in social participation post-TBI.

Problem Statement

Although there is research which provides evidence for use of certain interventions with the TBI population to address skills needed to engage in social participation, there is limited professional literature clearly describing how occupational

therapy can contribute to the process, and address the experience of occupational engagement dysfunction (Powell, Rich, & Wise, 2016; Radomski et al., 2016). The aim of this scholarly project is to provide guidance for the occupational therapist to enable meaningful engagement in social participation within the traumatic brain injury population. This will be accomplished by developing a guide for occupational therapists that includes assessments, client-centered interventions, and further information regarding ways to include loved ones in the rehabilitation process, while addressing the occupation of social participation. The person's affective, cognitive, and physical aspects of functioning, as well as the continuum of rehabilitation settings, will be taken into consideration when addressing intervention during the traumatic brain injury rehabilitation process.

Chapter III

Methodology

The goal of this scholarly project is to create a guide for occupational therapists (OT) to utilize when working with clients who have sustained a moderate to severe traumatic brain injury (TBI). The *Occupational Therapy Guide for Enabling Meaningful Socialization Post-TBI* is intended to be used by OTs to promote engagement in social participation, throughout all levels of the rehabilitation process. The purpose of the literature review was to gain a thorough understanding of the multiple impacts TBI has on adults, determine the importance of social participation in adults' lives, and to identify the role occupational therapists could have in facilitating and encouraging social participation within the rehabilitation process. Throughout the process of this scholarly project, several textbooks, websites, and online databases were used to search and locate literature.

The literature review was initiated by searching online databases including: CINAHL Complete, PubMed, OTSeeker, Embase, and PsycINFO. Other sources which were consulted throughout the process included the American Journal of Occupational Therapy, Centers for Disease Control and Prevention, and psychology-based resources. The key terms utilized to locate literature included: TBI, adults, occupational therapy, relationships, partners, significant others, cognitive function, social participation, and

socialization. The use of these key words yielded limited evidence-based research regarding occupational therapy, social participation, and clients who are post-TBI.

The literature review findings concluded that while engagement in social participation has been found to be significantly impacted by TBI, there is a lack of professional literature within occupational therapy demonstrating how OTs can address social participation, as an occupation and the needs during the rehabilitation process (Powell et al., 2016; Radomski et al, 2016). Therefore, this guide is designed to provide insight into client-centered, social participation interventions, and ways to address the meaning of this occupation, within each phase of the traumatic brain injury (TBI) rehabilitation process.

Comparisons of several occupation-based models were made to determine the correct fit for *The Guide*. The different occupational-based models that were assessed included the Person-Environment-Occupation (PEO) Model, Model of Human Occupation (MOHO), and the Canadian Model of Occupational Performance and Engagement (CMOP-E). The CMOP-E (Townsend & Polatajko, 2013) was selected due to the emphasis on enablement and spirituality. The purpose of this guide is to enable OTs to effectively address the skills required to be successful in the occupation of social participation, throughout all phases of the rehabilitation process for a client who is post-TBI. Utilizing different enablement skills in each rehabilitation setting will allow the occupational therapist to build an effective therapeutic relationship with the client to facilitate conversation regarding the client's spirituality. Spirituality is a large aspect of the client's desire and motivation to engage in all phases of rehabilitation. It is highly recommended that the OT address clients' spirituality continually throughout the

rehabilitation process, to promote feelings of satisfaction, self-worth, and confidence (Polatajko et al., 2013a).

The Occupational Therapy Guide was structured based on the three main components of the CMOP-E, the person, environment, and occupation, to provide a comprehensive overview of client factors in each phase of rehabilitation. The use of these concepts contributed to developing the guide in a logical order that follows the core concepts of the occupation-based model, as well as the occupational therapy practice process: evaluation, intervention, and targeted outcomes (AOTA, 2014). Analysis of the personal, occupational, and environmental aspects that impact an individual's engagement in social occupations is provided for each phase of recovery. Occupational therapy evaluations deemed appropriate for addressing social participation are listed and briefly explained, in addition to the Canadian Occupational Performance Measure (COPM). This information is then complemented by several social skills which are recommended to be addressed during each specific rehabilitation phase, as well as examples of intervention ideas to enhance social skills following a TBI. The interventions discussed are ways to address the spirituality component of the client, and increase meaningful socialization while combating post-TBI symptoms at the same time. The contents of chapter IV include an occupational therapy guide to enable meaningful socialization for adults who are post traumatic brain injury. Chapter V consists of a conclusion, limitations, recommendations, and overall findings of this scholarly project.

Chapter IV

Product

The purpose of *The Occupational Therapy Guide to Enable Meaningful Socialization Post-TBI* is intended to be utilized by occupational therapists that practice with adults who have sustained a moderate or severe traumatic brain injury (TBI) in acute care, inpatient, outpatient, and community rehabilitation settings. The guide first presents foundational knowledge including an overview of social participation, the guiding theoretical model, enablement skills, spirituality, and assessment. Then, the guide is separated into each phase of rehabilitation, acute, inpatient, outpatient, and community, and specific assessments and client-centered social participation interventions are presented for recommendations for each phase of the TBI rehabilitation process.

The Occupational Therapy Guide is intended to assist OTs by providing recommendations and suggestions of client factors, assessments, and interventions within each rehabilitation phase. The *Guide* is not intended to be utilized as a step by step instruction manual. To determine the level of appropriateness for each individual, it is encouraged that occupational therapists utilize their clinical reasoning and clinical judgement skills in conjunction with the recommendations. To be effective, the occupational therapist is responsible for determining adaptations and/or modifications of the recommendations to remain client-centered while providing intervention.

The Canadian Model of Occupational Performance and Engagement (CMOP-E) is the occupational therapy theoretical model to guide the development of *The Occupational Therapy Guide to Enable Meaningful Socialization Post-TBI*. In addition to a unique focus on the role of the individual's spirituality, the CMOP-E presents enablement skills for the occupational therapist to use during intervention that enable the individual to engage in meaningful occupations. An overview and description of enablement skills are presented in addition to enablement skill(s) that are recommended for occupational therapists to utilize throughout each rehabilitation phase. A copy of *The Occupational Therapy Guide to Enable Meaningful Socialization Post-TBI* can be located in Appendix 1.

Chapter V

Conclusion

The purpose of this scholarly project was to develop a guide for occupational therapists to address meaningful socialization after an adult has sustained a moderate to severe traumatic brain injury (TBI). There is evidence to suggest deficits in social skills for adults who have sustained a TBI, resulting in social isolation, loss of previous friendships, and difficulty establishing new relationships (Cassel et al., 2019; Tran et al., 2018). There is a considerable gap in the occupational therapy literature addressing social participation in the adult traumatic brain injury population. The *Occupational Therapy Guide for Enabling Meaningful Socialization Post-TBI* was created to guide and enable occupational therapists (OT) in the various phases of rehabilitation. The Canadian Model of Occupational Performance and Engagement (CMOP-E) was utilized to develop the structure of *The Occupational Therapy Guide*. The CMOP-E encompasses three main concepts, the person, occupation, and environment (Polatajko et al., 2013b). These three concepts were recognized in each phase of rehabilitation to establish personal, occupational, and environmental factors that could potentially impact an individual during that specific phase of rehabilitation.

Limitations and Recommendations

There are a number of limitations and recommendations following the completion of *The Occupational Therapy Guide for Enabling Meaningful Socialization Post-TBI*.

The first limitation is that the guide has not been implemented by a registered occupational therapist. It is recommended that it be presented to several occupational therapists working in each of the rehabilitation settings presented to review and provide comment based professional practice experience prior to implementing into practice, to reveal whether or not the guide is effective in enabling social participation for the TBI population. Constructive feedback regarding the *Guide's* usability and effectiveness should be elicited from OTs, adults with TBI, and their loved ones, prior to revision. The guide would then be revised based on the feedback and recommendations provided by first-hand users.

The second limitation is that the *Guide* solely addresses the occupation of social participation. When an adult has sustained a moderate or severe TBI, it is quite likely that the individual will experience deficits and decreased participation in several occupations. While engagement in social participation requires several skills that are transferable to other activities, the *Guide* is not all encompassing of client factors that may impact additional occupations. It is recommended that the occupational therapist uses the information in this guide while addressing all occupations, to increase generalization of skills.

The third limitation is that there are only four intervention recommendations presented in each rehabilitation phase. The four intervention recommendations in each rehabilitation phase may not be applicable to every adult's needs and functional levels in the TBI population. In addition, implementing the suggested interventions may be unrealistic within a facility due to resource availability and time restrictions. In order to resolve this limitation, it is recommended that the *Guide* continue to be developed and

improved to provide more intervention recommendations to best enable occupational therapists when working with the TBI population.

Conclusion

The Occupational Therapy Guide for Enabling Meaningful Socialization Post-TBI is intended to be a resource for occupational therapists to utilize when addressing social participation within the TBI population. The *Guide* provides client factors, assessments, and interventions that assist OTs in enabling social participation for the individuals, within each rehabilitation phase of the TBI recovery process. There is a lack of professional literature regarding the role occupational therapy has in addressing social participation with adults who have sustained a TBI. The *Guide* will allow occupational therapists to be better equipped to address meaningful social participation as well as increase the amount in which they provide intervention directly targeting social participation.

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Appendix 1

The Occupational Therapy Guide for Enabling Meaningful Socialization Post-TBI

Vanessa Johnson, MOTS & Hope Nelson, MOTS

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Introduction

This guide is intended to be used by occupational therapists that practice with adults who have sustained a moderate or severe traumatic brain injury (TBI) in acute care, inpatient, outpatient, or community rehabilitation settings. The guide discusses and presents assessments and client-centered social participation interventions recommended for each phase of the TBI rehabilitation process. Occupational therapists possess the skills and knowledge to assist adults to successfully return to community life following TBI.

An analysis of the personal, occupational, and environmental aspects that impact an individual's engagement in social occupations, following a moderate or severe TBI, is presented in a table for each phase of recovery. Following the table, several social skills are recommended for the occupational therapist to address during each specific rehabilitation phase, as well as assessments and descriptions of intervention ideas to rehabilitate social skill deficits following a TBI.

The Canadian Model of Occupational Performance and Engagement (CMOP-E) was selected as the occupational therapy theoretical model to guide the development of *The Occupational Therapy Guide to Enable Meaningful Socialization Post-TBI*. In addition to a unique focus on the role of the individual's spirituality, the CMOP-E presents enablement skills for the occupational therapist to use during intervention that enable the individual to engage in meaningful occupations. An overview and description of enablement skills are presented on page 5, in addition to enablement skill(s) that are recommended for occupational therapists to utilize throughout each rehabilitation phase.

Social Participation

The American Occupational Therapy Association (AOTA) (2014) defines social participation as, "an individual's ability to engage in social activities that result in successful interactions at the personal and community levels" (p. S21). While numerous skills are needed to successfully engage in social participation, this manual will focus on four specific social skills: self-awareness, listening and empathizing, perception of social cues and other people's intentions, and effective communication.

1. Self-awareness: The ability to focus attention on oneself to understand and respond to one's own emotion and mental states (Cassel, McDonald, Kelly, & Togher, 2019; Morin, 2006).

2. Listening and Empathizing: Listening is the ability to hear what one is saying and respond to what is being said. Empathy is the ability to understand another's point of view and respond to their feelings (Sousa et al., 2011).

3. Perception of Social Cues and Other's Intentions: The ability to take in others' perspectives and ultimately recognize social feedback and adjust accordingly (Bivona et al., 2014).

4. Effective Communication: This includes initiating conversations, asking appropriate questions, comprehending and expressing verbal and non-verbal communication and expressing ideas and feelings in an acceptable manner. Overall, successfully applying the three aforementioned skills (Cole, 2011).

These four social skills are vital for successful social participation. Individuals who have suffered a traumatic brain injury may experience deficits in one or all of these social skills. Therefore, this manual will provide a guide of which social skills are appropriate to address in each phase of recovery and examples of interventions that can be completed to enhance that social skill.

Overview of the Guiding Theoretical Model

The Canadian Model of Occupational Performance and Engagement (CMOP-E) encompasses three main concepts, the person, occupation, and environment (Polatajko et al., 2013b). The CMOP-E concepts help to guide an occupational therapist to engage in client-centered practice, and promote change by utilizing this specific model's enablement skills. Occupational performance and occupational engagement are a result

of the interaction between the person factors, occupation factors, and environmental factors (Polatajko et al., 2013b).

According to the CMOP-E, each person has three components: physical, cognitive, and affective. However, at the center of the person lies spirituality, which is the driving force for a person to carry out and engage in occupations (Polatajko et al., 2013b). Occupation is divided into three main groups: self-care, productivity, and leisure. Lastly, the CMOP-E divides the environment into four components: cultural, physical, institutional and social. With further evaluation of a client's personal components, their occupations, and environments, the occupational therapist will begin to develop a thorough understanding of how change can occur within the client. Synthesizing the information gained from evaluation, and establishing a therapeutic relationship with the individual will assist the OT to determine appropriate ways of providing intervention to increase engagement and satisfaction in social situations.

Enablement Skills

The CMOP-E (Townsend & Polatajko, 2013) defines enablement and enabling as, "the core competency of occupational therapy - what occupational therapists actually do - and draws on an interwoven spectrum of key and related enablement skills, which are value-based, collaborative, attentive to power inequities and diversity, and charged with visions of possibility for individual and/or social change" (p. 375). To be effective, enablement skills are not to be used in isolation, instead, multiple enablement skills are to be used in conjunction with one another at one time. Using specific enablement skills throughout the rehabilitation process with the TBI population will help to target the deficits of the person factors, occupation factors and environment factors as the intervention process evolves.

The ten key enablement skills are outlined in the table below. The specific enablement skills that are suggested to be used within each setting are provided throughout the guide. This chart will provide the occupational therapist with a quick reference regarding the why behind each skill. There are eight components to guide the use of enablement skills, specifically, in different phases of rehabilitation (Townsend et al., 2013).

1. Recommended to use more than one enablement skill at a time
2. Enablement skills change depending on the context of the individual
3. Occupational therapists shall desire "mutual and reciprocal collaboration" (p.116)

4. Enablement skills
5. Clearly articulate the skills you are trying to employ
6. Draw upon professional clinical judgement to guide use of enablement skills
7. The *educate* enablement skill includes educating occupational therapy students and other healthcare personnel
8. Enablement skills guide the process of occupational therapy while using the CMOP-E

Please refer to this table, as the occupational therapist feels necessary, in order to use each enablement skill correctly and effectively.

(Townsend et al., 2013)

Adapt	Use clinical reasoning skills to change, manipulate, and/or fit interventions to the client's physical, emotional, cognitive, social and spiritual abilities. Collaborate and coordinate interventions to target skills meaningful to the individual.
Advocate	Initiate conversation with client and family/friends regarding the individual's wants, needs, and desires. Be aware that some conversations may be difficult due to sensitive topics. Invest time into building rapport so that the individual can trust you with sensitive information. Know where to locate resources that provide information about policies, laws, etc. within the individual's environments.
Coach	Provide encouragement and work collaboratively with the individual by providing feedback. Encourage the client to take responsibility for identifying what they would like to receive from therapy. "A coach guides, mentors, and instructs others on ways to reframe their thinking and priorities for greater congruence between their sense of self and their actions" (p. 120).
Collaborate	**Always use this enablement skill.** Work together, with the individual, to establish an effective way to communicate with one another. Do not do things *to or for* the individual, rather do things *with* the individual. Collaborate with family members and friends of the individual, as well as other healthcare providers who work with the individual.
Consult	Listen carefully to individuals, families, healthcare professionals and colleagues. Use creativity to synthesize and summarize information when consulting others. Be thorough and prepared. "Consulting may

	involve making recommendations and suggestions based on an integration and synthesis of information, and professional reasoning" (p. 122).
Coordinate	Integrate all information including person, environment, and occupation factors, to ensure the therapy process runs smoothly. Use skills such as negotiating and mediating to facilitate organized resolutions for therapy and all aspects of your job tasks as an occupational therapist.
Design/Build	Using creativity to design, redesign, build, manipulate, fabricate, or construct items such as adaptive equipment, assistive technology, splints, orthotics, policies, programs, etc. If necessary, determine a plan for your design- this may include a schedule, goals, and other important aspects to complete the design/build.
Educate	Use education to "stimulate growth through engagement" whether that be with the individual or the individual's family/friends. Online resources are a great way to provide up-to-date research to the individual and individual's family/friends regarding their diagnosis, prognosis, coping skills, etc. Provide education on information you believe will "stick with" the individual, and/or facilitate successful carry-over of new skills within the individual. Different educational methods to be used: "observation, demonstration, practice, simulation, planning, and evaluation"(p. 125).
Engage	An occupational therapist is concerned with occupation - engaging individuals and/or their loved ones is a core enablement skill to capitalize on. Engaging an individual with the therapist, an activity, or an occupation, are all aspects of *engaging* as an enablement skill. By promoting independence and participation in occupations, we are engaging our clients in therapy.
Specialize	Draw upon particular training, education, therapeutic and clinical reasoning skills, etc. to individualize therapy with adults. This skill may not be "used" directly with an individual, rather during professional development time, to reflect client-centered occupational therapy practice.

Spirituality

According to the CMOP-E, spirituality lies at the center of the person. Spirituality does not have a definitive definition, rather the CMOP-E describes it as having a different meaning to each individual (Polatajko et al., 2013a). Determining an individual's perception of spirituality and building rapport from the beginning of the rehabilitation process, will contribute to ease when determining a client's motivational meaning behind occupational performance and engagement.

During each phase of rehabilitation, spirituality may look different for individuals. It is the responsibility of the occupational therapist to facilitate conversation and explore meaning, in regards to spirituality, throughout the rehabilitation process. Consistent conversation regarding motivation and meaning is an essential aspect of therapy, to promote feelings of satisfaction, self-worth, and confidence (Polatajko et al., 2013a).

Individuals will all value aspects of social participation in different ways, such as the amount of time, or what type of environment they desire to dedicate to socially engaging with others. If this is not a priority for them, then the occupational therapist will need to assist the individual in determining other aspects of social participation that contribute meaning within their lives. For example, this may involve addressing social skills that will allow them to effectively advocate their wants and needs to others. Therefore, utilizing formal and informal assessments to accurately identify meaningful aspects of social participation is vital to the rehabilitation process.

Assessment

The Canadian Occupational Performance Measure (COPM) is a client centered assessment which addresses deficits that are impacting an individual's everyday life (Polatajko et al., 2013b). The measure is occupation-based, can be used with adults, and includes assessment of skills needed for self-care, leisure, and productivity. This assessment was designed explicitly for the use of occupational therapists, when using the CMOP-E to guide their practice.

The COPM helps to determine goals a client has in the areas of self-care, leisure, and productivity. Not only does the COPM address performance deficits, but it also takes into consideration the person's level of satisfaction or importance a specific occupation has to the individual (Polatajko et al., 2013b). This information is obtained

via self-rating and is of great value to an occupational therapist in all phases of rehabilitation when determining intervention methods. In regards to social participation, each individual and/or family member will be the determinant of the way they view social participation as an occupation, and which goals they have for themselves. For example, social participation for one individual may fall under productivity, in comparison, to another individual who views social participation as leisure.

When using *The Occupational Therapy Guide for Enabling Meaningful Socialization Post-TBI*, it is recommended that the COPM be used in each rehabilitation phase due to the strong connection between the COPM and CMOP-E, and the client-centeredness it emphasizes. Administering the COPM, in addition to other occupation-based assessments, observations, and drawing upon clinical reasoning skills, the OT will be able to develop a holistic picture of the person and continue with the occupational therapy process.

***Please locate ways to obtain each assessment that are presented throughout the *Guide,* in Appendix 1.**

Acute Rehabilitation

Aspects Impacting Social Participation	
Person	Affective: Not responsive, emotional dysregulation, and frustration Physical: Mechanical ventilation, intubation, extubation, IV, arterial lines, catheters, surgical intervention, incontinent, fatigue, orthopedic dysfunction, headaches, and convulsions Cognitive: Not oriented to self, situation, date, year, location, etc., and limited attention span
Occupation	Self-Care: Unable to complete in its entirety leading to decreased personal hygiene - impacting socialization, having to require family/friends helping with simple self-care tasks Productivity: Focus is put on survival needs, eliminating tasks associated with providing others with support, possibly able to support self with simple self-care needs but requiring more support than able to provide to others Leisure: Likely not present, if present at all, likely used to increase performance abilities for IADLs, ADLs
Environment	Cultural: Subjective to each individual, how the individual interacts with medical professionals, what they expect/want/need from their family, values about what is important to them, and beliefs regarding life saving measures Social: Largely limited to health professionals on care team who assist in completing ADLs/IADLs (nursing, OT, PT, family, etc.), discussion of healthcare with health professionals (including patient in their own care), social constructs and expectations of the individual's abilities, relationships with hospital staff, medical staff and other patients Institutional: Subjective length of stay - (Ranges from several hours to several months), Limited control over when and where discharged based on medical readiness (usually doctor decides), insurance largely impacts services received and length of stay Physical: Consideration of where appropriate place is to be discharged, therapy tools (walkers, canes, adaptive equipment, etc.), community rooms, walking space, limited access to outdoor space due to health care workers schedule and availability, and the necessity for increased supervision and safety considerations

Skills Enabling Social Participation

In the acute rehabilitation stage, medical stabilization of the individual is the primary goal. Therefore addressing the social skills of self-awareness and effective communication are appropriate for this setting.

- *Self-Awareness:* Awareness of internal/external stimuli, controlling/reduce stimuli within environment, recognition of familiar objects/people, recognize emotional state

- *Effective Communication:* Educate family members and caregivers on the importance of slow, simple communication to decrease the amount of processing that is necessary for the brain. Introduce new means of communication (AAC device, whiteboard, etc.) if the patient is unable to verbalize needs, wants, desires, etc. Encourage the patient to communicate feelings regarding their current state of function.

Enablement skills: *Educate, Advocate, Engage, Collaborate*

Spirituality:

Spirituality during this phase of rehabilitation will vary depending on the individual's overall level of functioning, as well as their motivation to engage in therapy. Throughout assessment and intervention in acute rehabilitation, it is important to continuously monitor the individual's immediate and short-term goals. For example, an individual may value the ability to independently express medical concerns and/or needs, or, an individual may value the ability to discuss their current medical condition with a family member or friend.

Assessments:

The following recommended assessments are intended to be administered to an individual who has recently experienced a TBI. In this phase the individual may be in a coma or in the beginning stages of gradually awakening from a coma. Therefore, the assessments provide the occupational therapist with information to best educate the family and others on how to communicate with the individual during a time where the individual may be limited in their ability to socially interact.

Assessment	Description
Coma Recovery Scale-Revised	This is a standardized observational neurobehavioral assessment that consists of 6 subscales: 1) Auditory; 2) Visual; 3) Motor; 4) Oromotor; 5) Communication; 6) Arousal Functions. Administration of assessment is approximately 15-30 minutes.

Agitated Behavior Scale (ABS)	The ABS is an observational assessment to monitor agitation over a period of time and to measure progress during and after intervention. The purpose is to assess the extent to which the individual's behavior is interfering with functional activities. The scale consists of 14 items that describe behaviors and are to be rated from 1 to 4, 1 indicating absence of behavior and 4 indicating severe presence of behavior (Bogner et al. 2015).

Intervention:

Occupational therapy intervention during the acute stage of rehabilitation will be provided on an individual basis, due to the need for continuous monitoring of the client's medical stability. In the acute care setting, an occupational therapist works closely with other professions, such as nursing, speech and language pathologists, physical therapists, etc. Interventions in this stage may include, but are not limited to, activities of daily living (ADL) retraining, addressing cognitive deficits, and address goal setting for social engagement (AOTA, 2017). Include family, friends, significant others in this stage to increase motivation and to allow loved ones to see the deficits and impact TBI has had on the individual's life. Provided are 4 examples of interventions that could be used with an individual in this setting.

1. Education on TBI

Overview: ***Educating*** the client's loved ones, whether family or friends, is an important intervention to provide as an occupational therapist, to facilitate the beginning stages of helping them to understand what deficits they may observe short and long-term, in their loved one who has sustained a TBI. Synthesize the information from the *Acute Care Aspects Impacting Social Participation* chart to articulate how these deficits will impact ADLs, and their relationship with their loved one. This will not be an easy intervention to provide. Prepare to answer difficult questions, and have resources in mind to provide to the family/friends should they ask for some.

Location/Timing: This intervention can be provided at bedside with the client and family (if necessary due to medical device needs), or if the family/friends/individual would prefer you move to a different environment, a family room is a great option as well. Try to block off a 30 minute time period, without interruptions, to complete this session.

Skills being targeted: Self-awareness on behalf of both the individual and their loved ones is being targeted during this intervention. For optimal recovery for the client, full support and understanding is important for all involved in the care team. Educate on the importance of decreasing stimuli, slowing speed of talking, and decreasing amount of words being used in conversation, to decrease the amount of processing the client's brain is required to do to communicate.

Materials: Educational hand-outs about TBI and/or occupational therapy, if available at your site.

Prep-work: Creating, or compiling documents that you see may be useful for the individual/loved ones. Chart review. Communicate with the individuals, their friends and family, to see when a good time would be that everyone could be present during the session.

Ways to adapt: Provide this intervention over several different sessions if you can foresee the loved ones/individual not being able to take in a plethora of information in a 30-minute setting.

2. Scrapbook

Overview: This intervention involves the occupational therapist encouraging the family and friends to bring in photographs or scrapbooks that depict memories of them with the individual. Due to the fragile medical condition of the patient, loved ones may not know what to say or how to act around the patient. This activity will allow them to ***engage*** in structured conversation (even if the majority of the conversation is one-sided) with the individual by talking about familiar memories shared. Introducing this activity to the loved ones and individuals is an initial step to socially engaging with each other that provides structure.

Location/Timing: This intervention should be completed in an environment with low stimulation, this could be at the individual's bedside or in a quiet room. Family members are encouraged to be involved in this activity; however, it may be necessary to limit to 1-3 love ones. Block off a 30 minute time period to complete this session.

Skills being targeted: This activity addresses the individuals' self-awareness by introducing familiar people and memories with the intention of cognitively orienting themselves to person, place, and time.

Materials: Scrapbook or pictures of vacations, events, hobbies, and loved ones prior to the individual's injury.

Prep-work: Collaborate with family members and friends to bring in either a premade scrapbook or pictures of pre- injury memories. The therapist will need to educate the family members on slowing pace of speech and utilizing a calm and quiet tone when engaging in this activity, as well as not sharing too much to reduce the risk of overwhelming the individual. It is also important to prepare the loved ones for the possibility that the individual may have limited or no recollection of the memories displayed in the pictures.

Ways to adapt: One way to adapt this intervention is the number of family or friends participating in the activity. This activity may be overwhelming to the individual if there are several family members or friends participating, which can lead to an increase of noise or too many people talking at once. Therefore, this activity could initially be introduced with only one family member or friend involved.

3. Social Scavenger Hunt

Overview: The goal of this intervention is to provide opportunities for the individual to socially interact with hospital staff, health care professionals and/or visitors at the facility in which they are staying. This intervention will help the OT understand the level at which the individual is able to communicate, functionally. The therapist should set goals for the individual while they are moving about, however necessary, outside of their room. During this intervention, and all interventions provided, ***collaboration*** is necessary between you and the individual, and other adults in the healthcare facility, to establish an effective ways of communicating. For example, the therapist could tell the adult to ask the next nurse they see where he/she could find a bathroom, where the closet for shampoo and towels is, etc.

Location/Timing: The therapist should anticipate 15-30 minutes to complete this intervention. The therapist should be mindful of the individual's endurance and physical capacity to determine the best fit for where to travel for the social scavenger hunt. This may include interacting with others when going to the facility's dining center, coffee shop, or even in the hallway outside the individual's room.

Skills being targeted: The skills that will be addressed during this intervention would be following directions, verbalizing needs in an appropriate manner, active listening, emotional regulation, taking turns, and safety awareness.

Materials: This intervention does not require materials; however, if the individual needs additional assistance at first, the therapist can provide notecards with a script of questions and answers.

Prep-work: To prepare the individual for this intervention the therapist can explain expectations and goals for the intervention. The therapist and individual can determine a plan of action together on where and how the social interaction occurs. Prior to this intervention, the therapist can meet up with different staff members to prepare them for the possibility of an individual coming up to them to practice social interaction.

Ways to adapt: This intervention can be made more challenging, or simpler, by the therapist using clinical reasoning skills to adjust the amount of assistance provided during the social interactions.

4. Starting a Journal for the Rehabilitation Journey

Overview: This intervention is aimed at providing the individual with an opportunity to reflect upon his/her injury, how it is impacting them socially, and how they envision their engagement in social participation may look during and after their recovery process. The therapist will need to facilitate conversation regarding past social activities the individual engaged in, what kind of enjoyment they got from engaging in such activities, with whom they prefer to engage with, etc. This intervention will provide means for collaboration and to begin the process of ***advocating*** for the individuals' needs/wants throughout the recovery process. It is encouraged that this activity be done with loved ones to encourage ***engagement*** in the individual's care. This is recommended to be an ongoing intervention, so that the individual can monitor the progress they are making from day to day, to provide encouragement and confidence.

Location/Timing: This intervention can be completed over the course of several therapy sessions - the therapist can even start the therapy session with the individual journaling for 15-30 minutes before moving onto addressing other performance skills. This can take place in a location that the individual is comfortable journaling in. Depending on the individual they may need a quiet and controlled environment or may be able to journal in a more public setting with background noise.

Skills being targeted: The skills being targeted for this intervention include increasing sustained attention, expressing emotions, nonverbal communication and written communication.

Materials: Materials include writing utensils and a notebook.

Prep-work: Prior to the intervention the therapist would prepare the individual by verbalizing expectations and goals.

Ways to adapt: Depending on the level of the individual's written communication, the individual can write in complete sentences or disregard grammar focusing more on expressing emotions and needs. If the individual is unable to express themselves through written communication, the therapist can write in the journal while the individual verbalizes what they would like to document.

Inpatient Rehabilitation

Aspects Impacting Social Participation	
Person	Affective: Mood changes, impulsivity, irritability/agitation, depression and/or anxiety, and aggression, brain fatigue, brain fog Physical: Less fragile condition than in acute rehabilitation, loss of strength and endurance, difficulty swallowing, coordination and movement changes, visual and hearing changes, and incontinence, fatigue, AAC device Cognitive: Shortened attention span, memory loss, unable to problem solve and/or reason, disorientation/confused, difficulty with recall, decreased awareness, usability and understanding of AAC device
Occupation	Self-Care: Large aspect of focus is on toileting, bathing, and dressing, during the inpatient phase of recovery, decreased privacy due to needing physical assistance Productivity: Limited time to engage in this occupation. Productivity in this phase would be considered participating in therapy. Possibility of engaging with other patients and therapists during therapy Leisure: Limited time to engage in this occupation due to residing in a rehabilitation center, and priority of gaining functional skills to discharge home safely. Restricted in opportunity and access to leisure resources
Environment	Cultural: Intensive environment where therapy is considered mandatory unless medically unable. Social: Limited time for social engagement, decreased time with family/friends and increased time with health care professionals on care teams, exposure to other individuals if in group therapy or in passing. Institutional: About 30-60 day stay, therapy is intensive and can be up to 4 hours of therapy a day. Live in accordance to facility rules and privileges Physical: Unfamiliar environment, limited to the facility environment and equipment only, limited privacy to communicate with family members (shared room).

Skills Enabling Social Participation

The goal of inpatient rehabilitation is to increase independence in activities of daily living (ADLs) performance, and aspects of instrumental activities of daily living (IADLs). While engaging an individual in therapy, the occupational therapist should incorporate elements of social participation within their interventions, to initiate the remediation of basic social skills, specifically self-awareness, listening and empathizing, and effective communication.

- *Self-Awareness*: Identifying social relationships with others, being aware of deficits and the need for therapy services, understanding realistic prognosis, and identifying emotions accurately.

- *Listening and Empathizing*: Listening to one-step and two-step verbal directions, looking at a person when talking, appropriate response time, demonstrating reciprocal listening

- *Effective Communication:* Accurately calibrating tone and loudness of voice and demonstrating emotions appropriately.

Enablement skills: *Advocate, Coach, Collaborate, Educate, Design/Build, Adapt*

Spirituality:

Spirituality during this phase of rehabilitation will include the motivating factors that are encouraging the individual to continue on the rehabilitation journey. It is expected that each day will bring new challenges and new gains for each individual. It is the responsibility of the occupational therapist to encourage conversation regarding spirituality and what is motivating the individual at their core. These conversations should be consistent and should be done throughout each occupational therapy session. If the individual is comfortable and family or friends are present, the occupational therapist may consider educating them on the importance of spirituality, and the impact it has on overall feelings of satisfaction, self-worth, and confidence (Polatajko et al., 2013a).

Assessments:

Within the inpatient rehabilitation setting, one of the primary needs to assess is the individual's ability to verbalize their needs and desires in order to communicate during basic everyday activities. It is also necessary for the occupational therapist to obtain information that provides a comprehensive understanding of the individual's social functioning baseline, as well as information of their social participation prior to TBI.

Assessment	Description
Awareness Questionnaire	The Awareness Questionnaire involves the individual answering questions comparing how they participate in tasks now compared to pre-injury. The individual rates the questions one through five (much worse, a little worse, about the same, a little better, much better.)
Iowa Rating Scales of Personality Change	The ISPC measures personality changes of an individual following a TBI. Through the ISPC the OT assesses an individual's emotional functioning, social and interpersonal behavior, decision-making and goal-directed behavior, behavioral control and insight. Rating is based on a 7-point scale, 1 indicating very good functioning and +7 indicating a severe problem (Barrash et al. 2011).

Intervention:

Occupational therapy intervention during the inpatient rehabilitation stage is provided on an individual basis, and occasionally in a group setting. The individual is medically stable; however, is not able to return home independently yet due to medical or safety reasons. The primary focus of inpatient therapy revolves around increasing independence in ADLs and potentially IADLs to safely discharge to the individual's home or to a skilled nursing facility (BIAUSA, 2020). Provided are 4 examples of interventions that could be used with an individual in this setting.

1. Group Therapy with Other Individuals

Overview: During the inpatient phase, ADLs are most commonly the focus; therefore, IADLs such as social participation are not addressed as frequently. Therefore the purpose of this activity is to ***coach*** the individual to incorporate social participation within therapy sessions that are addressing ADLs. This can be done by treating two individuals concurrently. It is necessary to ensure that concurrent treatment is appropriate for both parties, by assessing whether or not the individuals have similar needs that should be addressed. ***Collaborating*** with the client about how he/she would like to ***engage*** with others is an appropriate way to initiate this intervention. An example would be if both individuals required additional assistance to successfully incorporate affected limb dressing techniques. The occupational therapist could have the individuals verbalize the steps to each other or provide feedback to them. The occupational therapist could attempt to encourage the adults to engage in spontaneous and reciprocal conversation with each other during rest breaks.

Location/Timing: This intervention can be completed in any space at the facility which is accessible to the individuals. This includes the facility's dining center, hallways, or the therapy gym. The time required to complete this varies depending on how much the individuals are able to tolerate therapy with another patient.

Skills being targeted: The social skills addressed during this intervention are verbal and nonverbal communication, appropriate responses, active listening, taking turns, interpreting social cues as well as other social skills.

Materials: No materials are required to incorporate the social participation aspect; however, materials may be needed depending on what performance skills the occupational therapist plans to address during the intervention.

Prep-work: Assess both individuals to determine appropriateness for concurrent therapy, specifically their functional abilities, personality/temperament, needs that need to be addressed, etc. The occupational therapist will be required to utilize their clinical judgement in order to determine whether or not an individual would benefit from a concurrent therapy session.

Ways to adapt: Ways to adapt this intervention would be the time frame in which concurrent therapy is provided as well as the amount of structure the occupational therapist provides for reciprocal conversation to occur. This may include the occupational therapist being an active role in engaging individuals to converse with each other such as providing questions or prompts.

2. Emotion Book

Overview: The purpose of this intervention is to help the individual ***design*** additional means for the individual to communicate his/her feelings and needs throughout the rehabilitation process. Depending upon the individual's level of functioning at this point during the rehabilitation phase, this intervention may focus on simple emotions, such as happy, sad, angry, etc., or more complex emotions such as empathy, regret, jealousy, etc. Once this intervention is initiated, the occupational therapist should continually use the use the emotion book during succeeding interventions, and encourage the individual to ***adapt*** the book when necessary due to increasing functionality, and to take it with them wherever they may go, so that it can become a habit to address emotions throughout their daily life.

Location/Timing: This intervention will take between 15-30 minutes, and can be completed over multiple sessions if needed.

Skills being targeted: Emotional regulation and appropriate emotional communication is the main goal of this intervention. For successful social participation, the individual will benefit from being able to identify his/her emotional state to others.

Materials: Gather materials such as printed pictures or words of specific emotions.

Prep-work: Obtain a general understanding of where the adult is at in regards to emotional regulation. If planning to use an AAC device for this intervention, download the application so you are prepared.

Ways to adapt: If an individual has previously used, or plans to use an AAC device, this can be completed via an app. Visit https://www.assistiveware.com/ for additional information. Additionally, this intervention could be used in conjunction with the scrapbook intervention - including how the individual *was* feeling during that past memory/experience.

3. Increasing Comfort while Communicating with Medical Professionals

Overview: The purpose of this intervention is to ***educate*** and provide a safe space for the individual to express his or her concerns regarding their medical status. It is common that individuals become overwhelmed and/or uncomfortable when discussing their current medical condition and status with a medical doctor or specialist. The medical terminology, language barriers, and time-constraints all can contribute to miscommunicate and loss of communication. The therapist can provide tips to help the individual effectively and efficiently communicate and ***advocate*** for themselves with their health care team. For example, the therapist may recommend writing down questions that come to mind during the day so that they don't forget, asking their nurse for definitions of terms, educating family on what questions may be important to ask, or summarizing medically pertinent information to present during the physician visit.

Location/Timing: This intervention should take place in the individual's room when the physician is present. This will likely be around 15 minutes.

Skills being targeted: This intervention addresses the following skills; self-advocating, effective communication, expressing needs, active listening, memory, and efficiently communicating within a time restriction.

Materials: Materials include a writing utensil and material that can be used to document a list such as a whiteboard, notebook, sheet of paper, etc.

Prep-work: In order to prepare the individual to successfully advocate and communicate with the physician, this intervention can be completed over several therapy sessions where whenever the individual experiences anything that is medically pertinent for the physician to know, the therapist and individual can document it and have a list ready once the time comes to meet with the physician.

Ways to adapt: The therapist could increase the difficulty of this intervention by providing a scenario or two to role-play how the individual may respond if he/she is asked about a symptom. To make this intervention easier, the therapist could plan to be present when the physician visits the individual to facilitate self-advocacy and discussion regarding his or her concerns.

4. Having Phone Conversations

Overview: This intervention is aimed at giving the individual practice communicating on the phone with various people for meaningful discussion, whether it is with a family member or doctor's office. The therapist can have a conversation to determine the individual's level of comfortability on the phone and if they would like to practice with the therapist beforehand. Throughout this intervention, the therapist should ***collaborate*** with, and ***coach*** the individual regarding appropriate ways to communicate and handle all types of phone conversations. For example, the individual could call a doctor or dentist office to make an upcoming appointment, order food to their room, or call a family member to have a conversation.

Location/Timing: This intervention can take place in the individual's room or a family gathering space. The therapist should expect this intervention to take between 15 and 30 minutes, depending on how many calls the individual wishes to make, how long conversations take, and how much assistance is required to be functional with each phone call.

Skills being targeted: The skills addressed within this intervention include; nonverbal communication such as appropriate voice tone and level, interpreting nonverbal communication and social cues, maintaining flow and pace of conversation and turn taking.

Materials: The materials required for this intervention primarily include a cell phone. If the patient requires additional assistance to maintain the flow of conversation, the therapist can provide a script of questions for the individual to utilize.

Prep-work: Prior to the intervention the individual and occupational therapist can role play phone call scenarios for preparation. The OT and individual can engage in a phone call with each other, whether it be in the same room or in separate rooms to simulate a realistic phone call in preparation for engaging in a phone call with others.

Ways to adapt: One way to adapt this intervention to decrease difficulty would be to initially begin phone calls utilizing facetime. This will allow the individual to see the person on the call and increase their ability to interpret nonverbal communication. Another way to decrease the difficulty would be to complete the phone call in a controlled environment with minimal distractions and background noise, allowing the individual to focus attention solely on the phone call.

Outpatient Rehabilitation

Aspects Impacting Social Participation	
Person	Affective: Impulsivity, mood changes, increased or decreased motivation, attitude toward therapy and therapists Physical: Able to transport self to/from rehab (with assistance or not), successful at ambulation (may still need rehab for this), vision, headaches/migraines, flaccidity/spasticity, bring augmentative and alternative communication (AAC) device if applicable Cognitive: Communication deficits, concentration difficulties, difficulty problem solving, reasoning, reading others' expression/moods, responsible for adherence and attendance to therapy, beginning to mourn loss of previous self-identity and accept disabilities that may be permanent
Occupation	Self-Care: Less focused on at this phase of recovery due to attainment of skills needed to perform self-care tasks. Productivity: Rehab is a productive aspect of every-day life, not something you can typically do with friends or family, and skills needed to return to work may take priority over socialization skills Leisure: Community outings to address social participation and leisure opportunities, able to engage in chosen leisure activities outside of therapy appointments, leisure activities may be different than pre-TBI activities
Environment	Cultural: Values/expectations of self and caregivers/family/friends begin to change due to increasing functional abilities Social: Group therapy sessions, only with other patients who have deficits, possibly too much stimulation, engaging with health care professionals regularly, time at therapy impeding on extra time which could typically be spent socializing Institutional: Plateau of progress may lead to discharge of therapy services due to services deemed "medically unnecessary" by insurance, individual may need to consider leave of absence from work/school depending on policies Physical: Simulated environment, not always entirely realistic, external location that requires individuals to be responsible for transportation to and from therapy.

Skills Enabling Social Participation

The goal of outpatient rehabilitation is to focus functional communication, mobility, independence in ADLs and IADLs, and socialization. The occupational therapist should incorporate social interaction throughout therapy such as involving other patients, therapy groups, family, and friends.

- *Self-Awareness:* Beginning to recognize other people's feelings, targeting impulsive behaviors,
- *Listening and Empathizing*: Responding to others' emotions and feelings
- *Perception of Social Cue and Others' Intentions*: Meeting and complying with therapy expectations, reducing inappropriate comments and interactions
- *Effective Communication:* reciprocal conversing, appropriate initiation and termination of conversations with others

Enablement skills: *Consult, Collaborate, Adapt, Design/Build*

Spirituality:

Spirituality during this phase of rehabilitation will vary depending upon the individual's functional level, goals, and overall personal values at this point in time. During this phase, overcoming persistent barriers will likely be at the forefront of therapy, due to the shift in occupational therapy intervention. The focus on occupations beyond activities primarily concerned with safety and self-care, such as leisure socialization or functional socialization, may be of greater value now, compared to when the individual was at the inpatient or acute phase of recovery. The occupational therapist should begin to encourage the individual to start taking initiative in identifying barriers and enablers in their life, which contribute to their occupational performance and engagement (Polatajko et al., 2013a).

Assessments:

In the outpatient rehabilitation setting, an individual is no longer as physically fragile; therefore, the occupational therapist can begin to assess higher level social skills and executive functioning. This will allow the OT to focus more on how the individual is socially interacting with friends and families within their natural environment.

Assessment	Description
The Evaluation of Social Interaction (ESI)	An OT observational assessment used to evaluate the quality of an individual's social interaction performance in a natural setting. The OT records aspects of social participation such as but not limited to, intended purpose of social interactions, aspects of the environment and social partners, familiarity, number of social partners, and quality of social interaction. Overall the assessment includes 27 social interaction skills that the OT will assess and rate on a 4-point rating scale based on competence (competent, questionable, ineffective or severely limited). (Simmons, Griswold & Berg, 2010.)
Craig Handicap Assessment and Reporting Technique (CHART)	The CHART is designed to be an interview tool that assesses an individual's physical independence, cognitive independence, mobility, occupation, social integration, and economic self-sufficiency. The social integration dimension specifically assesses an individual's ability to engage in and maintain social relationships. It involves household relationships, relatives, romantic involvement, business associates, friends and frequency of initiating conversations with unfamiliar strangers. There is a CHART—Long Form and CHART—Short Form depending on available time to administer assessment (Whiteneck et al. 1998).
La Trobe Communication Questionnaire	The LCQ measures perceived communication ability from various sources including the individual, family, friends, and clinicians. The LCQ includes 2 forms: self-report form (Form S) and nominated close-other form (Form O). The individual filling out the form rates the question based on a likert scale of rarely, sometimes, often, and always (Douglas, Bracy & Snow, 2007).

Intervention:

Occupational therapy intervention during the outpatient rehabilitation stage can be provided on both an individual and group basis. Due to the individuals' medical stability and increased endurance, therapy duration and intensity increases in this setting. Functional areas to target during intervention in this setting include, but are not limited to, increasing an individual's ability to engage in tasks such as activities of daily living (ADLs), instrumental activities of daily living (IADLs), functional communication, mobility, independence, safety, and socialization (Greenwald, 2010). Provided are 4 examples of interventions that could be used with an individual in this setting.

1. Social Media Review

Overview: This intervention will provide an opportunity for discussion and review regarding the social media platforms the individual uses or has a desire to use. ***Consulting*** the individual, their loved ones, and additional resources to make professional, yet mindful recommendations is an important aspect of this intervention. Individuals with a TBI may be vulnerable to cyber bullying and/or being taken advantage of through their social media due to social deficits such as impaired self-awareness and decreased ability to accurately interpret social cues. Therefore, collaborating with the individual's caregiver to put restrictions and/or controls into place is pertinent in order to protect individuals when utilizing social media.

Location/Timing: This intervention can take place in the outpatient clinic in a room where the individual, caregiver and therapist are able to sit at a table while collaborating. The therapist can also go to the individual's home if the family owns a desktop computer or feels more comfortable completing this intervention in the privacy of their home.

Skills being targeted: The social skills being targeted during this intervention are self-awareness and perceiving others' social cues.

Materials: Materials needed include the individual's personal computer and cellphone.

Prep-work: If the individual has personal goals of using new social media platforms, it may be beneficial to do research on the platform to learn more about it. Additionally, the therapist should be knowledgeable to provide education on the different ways cyber-bullying may occur, and ways to combat it.

Ways to adapt: Depending on the individual's level of function at this point in the rehabilitation process, It may be inappropriate to include the individual in decision-making regarding restrictions of social media use. In this case, the OT may consider having a meeting with solely the individuals' loved ones to make such decisions.

2. Social Scenario Role Play

Overview: This intervention will provide the client an opportunity to engage in responding to different social situations that may commonly arise in day-to-day life and/or difficult situations. This can be carried out with other adults who are in rehabilitation, so ***coordinating*** the session is important For example, situations such as social drinking, disagreements with a stranger and/or acquaintance in a public place, sexual encounters, ordering food at a restaurant, and scheduling a doctor's appointment. This intervention can be completed 1-on-1 with the adult and therapist, or in a group setting. Following each scenario, the therapist should facilitate discussion to ***collaborate*** and problem-solve throughout the role playing, so that the individual(s) has time to reflect.

Location/Timing: It is recommended that the therapist set aside at least 60 minutes for this intervention. This intervention can be implemented over the course of several therapy sessions, if additional time is needed. Therapy should take place in a large room with space for 3-4 individuals to stand and recreate social scenarios.

Skills being targeted: The social skills that are being targeted during this intervention are listening and empathizing, self-awareness, emotional regulation, and problem-solving.

Materials: A chair for each individual and list social scenarios.

Prep-work: Use the occupational profile you have developed of the individual to create a list of 5-10 socially challenging situations that they will likely encounter. If you plan to provide this intervention in a group, prepare a response card for each scenario for the other individual to use to continue the conversation.

Ways to adapt: The individual may benefit from brainstorming situations that they have recently encountered or are nervous to experience. One way to challenge the individual would be to implement this intervention in a group setting with other adults in order to provide the individual with more realistic scenarios.

3. Playing a Social Game

Overview: The goal of this intervention is to provide the individual with an opportunity to engage with their loved ones in a social activity. The adult will be responsible for choosing a board game or card game that they enjoy playing, or wish to learn how to play, and for selecting 2-3 family or friends to join them for their occupational therapy session. The intervention will focus on helping the individual to appropriately and functionally participate in a game, while also giving the family and/or friends a chance to see the individual's current level of function. Throughout the game, it may be necessary to ***adapt*** the game to make it a better fit for the individual, to increase confidence and enjoyment in activity. This intervention will also provide the individual's loved ones the opportunity to ask questions of the OT regarding current and/or future deficits they are observing in the individual.

Location/Timing: This intervention would take place in the outpatient clinic facility, in a quiet room that is large enough for a table and 4-5 people to engage in a social game.

Skills being targeted: The social skills being targeted during this intervention are emotional regulation, turn-taking, appropriate communication, perceiving others' cues, responding to perceived cues, and casual reciprocal conversation.

Materials: Materials include a table, chairs and board game of choice.

Prep-work: Understanding the rules of the game that the individual chooses for the session.

Ways to adapt: One way to adapt this intervention to increase or decrease the difficulty would be in the selection of the game, specifically the complexity. Another way to adapt would be with the number of people involved in the game, the more people involved typically results in more components.

4. Creating a Social Calendar

Overview: Individuals who have sustained a moderate to severe TBI often experience problems with memory. This intervention will provide the individual with to ***collaborate*** with the therapist to ***design/build*** the means to start a new habit of keeping activities, specifically social activities, on a calendar for their reference. In addition to already scheduled social events, If the individual chooses, he/she should be encouraged to make phone calls to family and friends in order to make plans to put on the calendar.

Location/Timing: The therapist should anticipate about 30 minutes for this intervention. This intervention will take place in the outpatient clinic, in a room with minimal distractions and/or stimuli.

Skills being targeted: The skills being addressed for this intervention include planning and scheduling, long-term and short-term memory, written communication, verbalizing needs and desires, and time management.

Materials: The materials involved in this intervention will vary based on the individual's personal preferences such as utilizing a physical or virtual calendar.

Prep-work: The therapist and individual will need to collaborate approximately a week prior to the beginning of each new month, to determine scheduling social events throughout the month. The individual will need to prioritize events based on necessity and importance.

Ways to adapt: Depending on the individual's preference, a physical planner or virtual calendar (on a smartphone or tablet) may be used to track social activities.

Community Rehabilitation

Aspects Impacting Social Participation	
Person	Affective: Emotional distress due to transition, depression, anxiety, and frustration are common which can lead to a lack of motivation and participation in therapy. Physical: May still be experiencing spasticity or flaccidity, possible need for mobility equipment/support Cognitive: Individual experiences increased awareness of deficits and mourning loss of previous self-identity; judgement, problem-solving, impulsivity, and reasoning may be impaired
Occupation	Self-Care: Becoming more independent in ADLs and IADLs, may still need supervision and/or be at modified independence Productivity: Unable to drive due to deficits, finding work that matches their current level of function Leisure: Past leisure activities may be unrealistic to engage in due to acquired deficits, new leisure activities being explored and established
Environment	Cultural: More immersed in personal and family environments with matching cultural beliefs and values. Social: More opportunities to access pre-injury social environments, may try to reconnect and renew past relationships, more realistic and natural social interactions, highly dependent on support systems. Institutional: No longer in a healthcare facility, most rehabilitation occurs within an individual's natural community environment. Physical: Consideration of where discharged to, reduced structure and therapeutic support once at home

Skills Enabling Social Participation

Once individuals have reached the community rehabilitation stage in recovery, the goal of rehabilitation becomes more focused on successfully re-integrating into society and navigating within their community. The therapist should promote a strong emphasis on education specifically for safety, self-advocating, and compensatory or adaptive strategies.

- *Self-Awareness:* Acknowledging their deficits so that they can compensate and adapt within their social environment.

- *Perception of Social Cue and Others' Intentions*: Emphasis on safety precautions, boundaries, and social etiquette. Due to the deficits in problem-solving, impulsivity, and judgement this population is considered vulnerable. It is important to work on boundaries and safety awareness, specifically in difficult scenarios they may encounter in the community such as peer pressure, alcohol consumption, sexual encounters, strangers, being taken advantage of, social media/internet.

- *Effective Communication:* Self-advocating

Enablement skills: *Coordinate, Coach, Engage, Advocate, Collaborate*

Spirituality:

Spirituality during this phase of rehabilitation continues to focus on barriers that impact ability to function in the way the individual desires to, in addition to finding value and meaning while re-integrating into the community. The individual may simply value the ability to function within the community, or, the individual may be actively searching to find new meaning and motivation with the way they have altered their lifestyle. The occupational therapist should ultimately encourage the individual to take responsibility for understanding the way in which their spirituality impacts overall occupational performance and engagement.

Assessments:

During community rehabilitation, the occupational therapist will need to assess the individual's ability to socially engage within the community in a safe and socially appropriate manner. Therefore, assessments that are occupation-based and administered while an individual is engaging in social participation within the community are necessary.

Assessment	Description
The Awareness of Social Inference Test (TASIT)	The purpose of this assessment is to assess social cognition in any population that may experience problems understanding social cues. The assessment involves utilizing videos of naturalistic everyday conversations and having the individual watch the interactions and answer questions by pointing or giving yes/no responses. The questions focus on feelings, thoughts, and intentions of the speakers in the video as well as the implied meaning of their responses. Administration time is approximately 60min to administer the complete version or 20min to administer the alternative short-version (McDonald, Flanagan, Rollins & Klinch, 2003).
Reintegration to Normal Living Index (RNLI)	The purpose of this assessment is to assess the individual's ability to reintegrate into society after experiencing a TBI. The assessment is a self-report questionnaire that involves 11 statements that the individual will rate on a visual analogue scale (1-minimum reintegration, 10-maximum reintegration). The statements represent 8 domains: 1) Indoor; 2) Community and distance mobility; 3) Self-care; 4) Daily activities; 5) Recreational and social activities; 6) Family roles; 7) Personal relationships; 8) Presentation of self to others and general coping skills. Administration time is approximately 10 minutes (Mckellar, Cheung, Huijbregts, & Cameron, 2015).
Sydney Psychosocial Reintegration Scale (SPRS)	The SPRS consists of a 12-item scale that assesses the individual's psychosocial skills when engaging in occupational activity, interpersonal relationships, and independent living skills. The SPRS includes two forms, Form A assesses the individual's psychosocial change since the injury and Form B assesses the individual's current psychosocial status. There are three versions of the SPRS: Informant, Self and Clinician (Tate, Simpson, Soo & Lane-Brown, 2011). The different versions allow for various points of views, especially if the individual is unable to accurately assess themselves.

Intervention:

Occupational therapy intervention during the community rehabilitation stage is provided on an individual and group basis. The goal of community rehabilitation for occupational therapists is to assist individuals in safely and successfully reintegrating back into the community. This involves addressing ADLs, IADLs, social participation, work, education, etc. The occupational therapist is able to provide interventions within real life settings to either remediate an individual's ability to engage in their desired occupations or provide adaptive and/or compensatory strategies that allow them to engage in the occupation (AOTA, 2016). Provided are 4 examples of interventions that could be used with an individual in this setting.

1. Community Outing

Overview: This intervention will provide the individual with an opportunity to socially ***engage*** with other community dwelling individuals. Taking the adult, with or without other clients, to a nearby shopping mall or public place they would like to go to, will provide many opportunities for social interaction. The OT and individual should ***collaborate*** to set goals regarding how many stores/food places they are required to visit, to encourage a wide variety of community engagement. After the community outing, the therapist and individual will have a 1-on-1 discussion about how they feel their communication with others went, and what changes they will make in the future. The therapist should ***coach*** the individual through difficult situations that may arise during social interaction while on the outing.

Location/Timing: The therapist should plan for a 60-90 minute session, which will include transportation to and from the location in the community. A nearby public place that is likely populated and a desirable place for the individual should be chosen as the place for intervention.

Skills being targeted: Social skills being targeted during this intervention include problem-solving, emotional regulation, self-awareness, perceiving others' social cues, self-advocating, and practicing social etiquette.

Materials: Will vary depending on chosen location.

Prep-work: The therapist should investigate potential locations that match the individual's skills level to ensure a just right challenge, whether that is a coffee shop, mall, drive-through, movie theatre, etc. Prior to the community outing, the therapist can prepare the individual for specific interactions that they may encounter and engage in role playing the social scenarios to increase the individual's confidence.

Ways to adapt: If the individual is not yet ready to socially participate without assistance, the therapist can have "actors" in place for the individual to interact with within the public environment.

2. Public Transportation

Overview: This intervention aims to provide the individual with experience using public transportation appropriately and efficiently, to attend social gatherings. The therapist and individual are encouraged to ***collaborate*** to determine which form of transportation is appropriate and realistic to use for this intervention. The therapist should ***coordinate*** all aspects of this session to ensure the intervention runs smoothly. For example, if the individual enjoys traveling to a downtown area, it is important that he/she have the skills and know where to locate resources in order to use a light-rail train, bus system, taxi, etc.

Location/Timing: The location of this intervention will vary depending on the departing location and destination. The timing of this intervention is vital, specifically because of public transportation schedules.

Skills being targeted: Social skills being targeted during this intervention include self-awareness, safety-awareness, and perceiving others' social cues.

Materials: Public transportation schedules

Prep-work: The therapist will need to explore public transportation options that are realistic and accessible for the individual to utilize in their everyday life. Afterwards, it may be beneficial for the OT to utilize the public transportation prior to the intervention, to obtain the public transportation schedule, as well as problem-solve and anticipate problems the individual may experience.

Ways to adapt: If the individual is unable to remember the steps to successfully utilize public transportation, they can be provided a script or step-by-step instructions to assist them. The individual may need to complete this intervention several times.

3. Preparing to Host a Social Gathering

Overview: The purpose of this intervention is to go through all of the steps concerning preparing and hosting a social gathering. The therapist and individual will ***collaborate*** to determine a social gathering that they wish to host in the near future. The goal will be to create a guest list, supply list, schedule for completing all preparatory work, sending invites, etc. If the individual chooses to co-host a social gathering, they can bring their co-host to the occupational therapy session to be included as well.

Location/Timing: Location of this intervention will take place in the individual's home or the community facility. This intervention will take approximately 30-60 minutes.

Skills being targeted: The social skills being targeted in this intervention include social etiquette, scheduling/planning, time management, working memory, and verbal, written, and expressive communication.

Materials: The individual will be responsible for providing note pads, pens, planning binder, etc. for how they wish to keep social gathering details organizing.

Prep-work: Not applicable.

Ways to adapt: One way to adapt this intervention would be the number of people invited, the more people that are invited will increase the level of difficulty of hosting. Another way to adapt this intervention would be to host a social gathering in a public place, this will reduce the stress of some planning aspects of hosting.

4. Becoming a Member at a Public Gym

Overview: The goal of this intervention is to encourage community re-integration and provide the individual with an opportunity to go through the process of becoming a member of a public facility. This intervention will include ***coordinating*** and going through all of the processes to become a member including: providing the necessary information (name, DOB, medical history, etc.), payment, and understanding the rules and regulations of the gym. This concept of becoming a member of a public facility is applicable to other types of public facilities that the individual may want to join such as a library, bank, sportsmen club, etc. Additionally, this is a good way to encourage individuals to ***advocate*** for themselves when picking a facility to pursue membership at.

Location/Timing: This intervention will take place either in the community facility or at the specific gym the individual desires to join. This intervention will require approximately 30-60 minutes to complete.

Skills being targeted: The skills addressed in this intervention include; expressing desires and needs, verbalizing appropriate questions and responses and social etiquette.

Materials: There are minimal materials required for this intervention. The individual may desire to bring a notebook and writing utensil to document thoughts on the facility.

Prep-work: Prior to the intervention, the individual and occupational therapist will complete research for various gyms in the community to determine the best fit for the individual. This may also include going on tours of the facility to gain an understanding of the amenities and what the facility includes.

Ways to adapt: One way to increase difficulty of this intervention would be to require the individual to complete the prep work. For example, encourage the individual to do research about different gyms, member rates, hours, etc. and present each option to you, the therapist. Another way to adapt this intervention would be to supply a list of information the individual will be asked to report, and inform them of this prior to arriving at the facility.

Conclusion

It is our hope that *The Occupational Therapy Guide for Enabling Meaningful Socialization Post-TBI* will provide you with useful information to be utilized alongside your clinical judgement, to address the occupation of *social participation* with adult individuals who have sustained a traumatic brain injury. By addressing social participation in occupational therapy, you are encouraging and instilling hope within the individuals who are experiencing deficits following their injury. With the use of the recommended ***enablement skills***, and by consistently addressing ***spirituality***, you are allowing them to communicate effectively throughout everyday life and engage meaningfully with others.

Please contact Vanessa or Hope with questions:

Vanessa J. Johnson | Email: Vanessa.J.Johnson@UND.edu | Phone: (701)-541-2600
Hope L. Nelson | Email: Hope.L.Nelson@UND.edu | Phone: (612)-750-3572

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Appendix 1

Acute Rehabilitation	
Coma Recovery Scale-Revised	Assessment available for free. Obtain assessment via the URL provided. file:///C:/Users/User/AppData/Local/Temp/CRS-R_Manual20201210.pdf
Agitated Behavioral Scale	Assessment available for free. Obtain assessment via the URL provided. file:///C:/Users/User/AppData/Local/Temp/abs.pdf
Inpatient Rehabilitation	
Awareness Questionnaire	Assessment available for free. Obtain assessment via the URL provided. file:///C:/Users/User/AppData/Local/Temp/AQpat.pdf
Iowa Rating Scales of Personality Change	Assessment available for free. Obtain assessment via the URL provided. file:///C:/Users/User/AppData/Local/Temp/ISPC-M-1.pdf
Outpatient Rehabilitation	
The Evaluation of Social Interaction (ESI)	The ESI requires the user to be certified in order to administer. This involves completing a 3-day course for a set cost. Can register for ESI course through the Center for Innovative OT Solutions.
Craig Handicap Assessment and Reporting Technique (CHART)	Assessment available for free. Obtain assessment via the URL provided. file:///C:/Users/User/AppData/Local/Temp/CraigHospital.CHARTManual-1.pdf
La Trobe Communication Questionnaire	Assessment available for free. Obtain assessment by searching *La Trobe Communication Questionnaire* on google and download as a word or pdf document.
Community Rehabilitation	
The Awareness of Social Inference Test (TASIT)	The TASIT manual is available to purchase through the Australasian Society for the Study of Brain Impairment (ASSBI). https://assbi.com.au/Assessments-to-Buy
Reintegration to Normal Living Index (RNLI)	Available for free, obtain copy of assessment by emailing author: Sharon.wood.dauphinee@mcgill.ca
Sydney Psychosocial Reintegration Scale (SPRS)	Assessment available for free. Obtain assessment via the URL provided. https://www.sralab.org/sites/default/files/2017-07/Tate_SPRS-2-MANUAL_August2011.pdf

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