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School of Occupational Therapy

# Developing Mental Health Resources for Clinicians and Caregivers of Patients with an Acquired Brain Injury

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**Abstract**

Mental health and psychosocial education were identified as areas that required improvement at Ascension St. Vincent Inpatient Rehabilitation in Evansville Indiana. Through this process, resources for clinicians and caregivers have been developed to encourage conversations about mental health with patients that have experienced an Acquired Brain Injury (ABI). There were four (n=4) patients admitted with an Acquired Brain Injury during the implementation phase of this project. Through the use of the depression screening tool, The Patient Health Questionnaire (PHQ-9), three patients identified feelings of mild to moderate depressive symptoms at admission. Through promoting conversations surrounding mental health, mindfulness activities and the use of cognitive behavioral therapy interventions the patients that indicated mild to moderate symptoms of depression upon admission demonstrated a decrease in scores at discharge. The continued use of the assessment and intervention techniques were recommended to the site to continue addressing mental illness among this specific population.

## Introduction

Ascension St. Vincent is one of the country's leading non-profit catholic healthcare networks. The network operates over 2,600 facilities spanning 19 states (Site). While Ascension's services are diverse, its commitment to its community is unwavering. Ascension St. Vincent prides itself on the diversity of care that is offered to a diverse population of patients. The inpatient rehabilitation setting provides services to patients after orthopedic injury, neurological injury, stroke, surgery, or general debility after hospitalization.

The Doctoral Capstone Project creates educational binders for clinicians and caregivers of patients with an Acquired Brain Injury (ABI). These resources will adequately address comorbid mental illnesses after experiencing an Acquired Brain Injury (ABI). This binder will also address the literacy concerns of the patient and their caregiver to promote easily understandable material as a way to facilitate the educational understanding of the importance of mental health education for caregivers. Through skill development and project implementation, the mental health educational binder will be implemented in the inpatient rehabilitation unit at Ascension St. Vincent in Evansville, Indiana. These binders will serve as a tool for clinicians and caregivers to address the stigma around mental health best. In addition, education about comorbid mental illnesses will allow the caregiver and the patients to understand the changes in the brain after brain injury and various ways to combat their symptoms.

Most caregivers do not receive proper mental health education or support due to the sudden onset of the injury or condition of their loved ones. Especially given the nature of an acquired brain injury. It is essential to understand the benefit of providing mental health education to caregivers of those with an acquired brain injury to reduce risk of caregiver burnout and mental illness.

**Background**

A brain injury takes a physical, mental, emotional, and financial toll on a person's overall well-being. Transitioning from functionally independent to predominantly dependent creates an internal struggle among patients. This can then lead to the development of psychological disorders in effort to cope with the new reality. The most prevalent comorbid diagnoses are Depression, Anxiety, and substance use disorder (Marinkovic et al., 2017, Yeh et al., 2020). One study has identified that one out of every four persons with a brain injury has a psychiatric disorder to accompany their Traumatic Brain Injury diagnosis (Marinkovic et al., 2017). The immediate ramifications of an acquired brain injury are not always present, and the onset can take anywhere from 1 week to a few years after injury. Specific behaviors may develop later in the patient's rehabilitation due to the alteration in brain function, which can create personality discrepancies that inhibit occupational performance and participation throughout the remainder of the lifespan. One study acknowledges the prevalence of anxiety, depression, and substance use disorder in patients with TBI and implements various interventions in the rehabilitation process to prevent the further development of a psychiatric disorder (Rauwenhoff et al., 2019).

Currently, the hospital provides binders to the patients about specific diagnoses (CVA and TBI), which serve as educational tools. This is an interactive binder that allows interprofessional communication between all therapy disciplines to outline the severity of the injury, as well as highlight perceived deficits, goals, and overall progress. Upon completing the Needs Assessment, it was apparent that there were gaps in providing mental health services and education for all patients, specifically patients that have sustained an Acquired Brain Injury (ABI). Through the development of the Doctoral Capstone Project, caregiver education was identified as an area of need.

Through a variety of research studies, it has been shown that the spouse and parents of the injured suffer the most. It is important to note that traumatic experiences are not limited to only the injured person (Tsur & Haller, 2020). Social support plays a large role in the success of the caregiver. According to Qadeer et al. (2017), caregivers with minimal social support were more at risk of developing psychological discontent. This can then develop into depression, anxiety, or substance use disorder. Furthermore, caregivers taking care of a person with a brain injury and substance use disorder (SUD) are at an even higher risk of developing their own psychological issues due to increased stress (Qadeer et al., 2017).

Specific behaviors may develop in the patient due to altered brain function, which can create hostility, aggression, and irritability. This makes caregiving quite challenging due to the potential for mental and verbal abuse. In addition to the verbal and mental abuse, the caregiver could be sustaining the abrupt change in personality due to the injury is often hard to cope with, leading to poor coping skills among caregivers.

The carryover of mental illness between caregiver and patient is reciprocal in nature. One study has found that a patient with lower life satisfaction has a caregiver with lower life satisfaction (Qadeer et al., 2017). Unfortunately, few studies have accurately identified the exact number of caregivers that have developed a mental illness after a significant amount of time spent caring for a person with a brain injury. Due to the sudden nature of brain injuries, it is tough to focus solely on the caregiver. In contrast, a person with a brain injury needs extensive care to increase function and independence. The care for the caregiver and the patient must include the entire family. Singling out the patient or the caregiver will create miscommunication between the patient and their caregiver. By identifying areas in which the caregiver is struggling

mentally, the patient can create a plan of care that addresses the needs of each person involved (Devi et al., 2020).

Some caregivers can experience Post-Traumatic Stress due to the injury their loved one has endured (Tsur & Haller, 2020). The financial burden healthcare expenses put on a family can create a great deal of stress for the caregiver, especially when their loved one was the person that took care of the family's financial expenses. General life participation has become dramatically different, and the routine of the patient and their caregiver is also changed.

The feelings of burnout begin to weigh on a person when they have not been recognized for the sacrifices that are made to ensure the patients' needs are met. Future research can also address the coping mechanisms most common in caregivers and provide educational materials for caregivers to incorporate to better cope with the stress of their job. Addressing the needs of both the patient and their caregiver can create unity and elevate the quality of care being provided. Through analysis of current literature, caregiving, and mental health at the Inpatient Rehabilitation level are often overlooked as there are many other pressing issues, like physical rehabilitation. This project will create a vessel to address caregiver mental health at the inpatient rehabilitation level, as this allows preparation for a safe and educated discharge plan.

**Theoretical Framework**

The Canadian Model of Occupational Performance and Engagement (CMOP-E) will be used as the occupation-based model. CMOP-E addresses the needs and capabilities of a person and makes adaptations to promote functionality and independence. By keeping the client at the center of the rehabilitation process, practitioners are able to address the areas in their lives creating dysfunction (Polatajko et al., 2007). The CMOP-E implements client-centered care while addressing mental health after a brain injury. This project will focus on increasing

clinicians and caregivers understanding of mental illness in order to improve the overall mental health of the patients. This project will promote engagement and occupational performance through the use of open dialogue, mindfulness-based activities and cognitive behavioral therapy interventions allowing the patients to identify areas they feel they are being challenged. CMOP-E encapsulates the person as a whole and the internal and external influences' that shape the human experience, all while keeping the human spirit at the center of the model. The Frame of reference that will guide the capstone experience is Cognitive Behavioral Theory. Cognitive Behavioral Theory facilitates change by changing the thought patterns, behaviors, and feelings toward specific events in one's life. The use of cognitive behavioral theory will facilitate the patient's ability to use diverse cognitive processes, and help the client develop accurate self-awareness and realistic perceptions of others and the environment by providing tools and education for the client. This theory allows individuals to control and manage their own thoughts, feelings, and behavior to cope with stress, manage time, and balance their life roles and occupations (Cole & Tufano, 2020). This project is working toward facilitating a space where the client is able to express their concerns about potential mental illness while equipping clinicians and caregivers with tools to properly address mental health concerns.

**Project Design and Implementation**

This Project aims to increase mental health awareness and education in the inpatient rehabilitation setting for clinicians and caregivers of patients that have experienced an Acquired Brain Injury (ABI). Through the Needs Assessment, it was disclosed that very little mental health education is provided for patients and their caregivers during their stay in inpatient rehabilitation. To ensure that mental health is being addressed by the staff members, an educational resource binder will be created. In addition to the resource binder for the staff

members, a mental health resource binder will be created for patients with Acquired Brain Injuries and their caregivers to increase the carryover after discharge.

The role of an occupational therapist in the inpatient rehab setting includes evaluating the patient's current level of function, establishing goals, providing skilled treatment, and generate safe discharge plans for the patient. Depending on the required services, patients can spend anywhere from one hour to ninety minutes with the therapist per day. Clinicians are able to develop rapport with the patient quite easily as they are working closely with each other every day. Being able to discuss mental illness with patients was viewed as a daunting task when unsure of how to approach the topic. This project aims to equip clinicians with tools and interventions that promote mental well-being while completing other meaningful treatments. The resources created can be used by all disciplines (occupational therapy, physical therapy and speech therapy).

An educational in-service was provided for staff members to ensure understanding of the binder and the resources that have been included. Through conversating with various clinicians it was disclosed that many felt unequipped to discuss mental illness with patients and their caregivers. Of the three disorders, many clinicians identified feeling least comfortable discussing substance use disorder with patients and their caregivers. The binder provides various factsheet handouts, various assessment tools, intervention ideas, as well as conversation guides. In order to best address mental health concerns among patients with Brain Injuries, it is essential to provide educational resources to the staff members that will be working closely with the patients. The contents of the binder include various cognitive behavioral therapy activities, mindfulness activities, conversation guides, various assessment tools and informational handouts that can be given to patients or their family members. Currently, there are very few resources. The project

aims to create a space for rehab staff to expand their knowledge on the topic of mental health as it relates to ABI.

The project consists of administering the PHQ-9, which is a depression screening tool used to identify signs and symptoms of depression. The PHQ-9 will be administered at admission and discharge to identify the change in symptoms. Patient's that were admitted with an ABI diagnosis were required to complete the PHQ-9 within 3 days of admission and were required to complete again on the day of discharge. The results of the PHQ-9 will identify which patients would benefit from increased education and further interventions. This also provides an outline for the resource binder and provide potential assessments and intervention strategies to use when addressing mental health with the patients.

At this site, the caregivers of patients that were discharging home were required to attend a family training session as well as a family conference to outline the progression of the patient and future recommendations. During this session, the contents of the CVA/TBI binders as well as the caregiver support binder were discussed with the caregiver and allowed open dialogue between the clinicians, patients and their family members. The contents of the caregiver binder include resources on how to identify symptoms of depression, anxiety, and substance use disorder in patients with an acquired brain injury. The binder includes factsheets about acquired brain injury as well as changes to expect after injury.

**Project Outcomes**

Patients that were admitted to the site with a diagnosis of ABI were initially included for participation in the PHQ-9 administration process. The patients were assessed for cognition and communication deficits in the patient's initial occupational therapy evaluation to assess the

patient's ability to answer questions on PHQ-9 appropriately. Through this process, two patients were excluded from participating as there were severe cognitive deficits inhibiting their ability to complete the screen.

The assessment tool that was used in this project was the Patient Health Questionnaire (PHQ-9), which is a short screening tool used to quantify depressive symptoms a patient is experiencing. The PHQ-9 consists of nine questions self-reported screening that requires patients to rate severity of symptoms from 0 (not at all) to 3 (nearly every day). The patients were provided paper copies of the PHQ-9 and completed through self-report. The scores were then taken and calculated. A score of 0-4 indicates minimal or no depressive symptoms, 5-9 indicates mild symptoms, 10-14 indicates moderate symptoms, 15-19 indicate moderately severe, and a score of 20-17 indicate severe depressive symptoms.

There were four (n=4) patients admitted with an ABI that were appropriate to complete the PHQ-9 process during this experience. Three of the participants were male and one participant was female. All participants were over the age of 50. During the initial administration of the PHQ-9, one patient reported no signs or symptoms of depression, two patients reported mild symptoms of depression, and one patient reported moderate symptoms of depression. The scores were documented in the patient's files so each member of the therapy team could access the scores and plan treatment sessions accordingly. Practitioners were notified of the patients that would benefit from further conversations and interventions surrounding mental illness and facilitating treatments to promote healthy coping skills and mindfulness activities. The results are detailed in Table 1.

**Summary**

It has been identified that one out of every four persons with a brain injury has a psychiatric disorder to accompany their Traumatic Brain Injury diagnosis (Marinkovic et al., 2017). Other symptoms of mental illness may develop one week to years after injury, resulting in the inability to be fully addressed during a patients stay in inpatient rehabilitation. By providing resources for clinicians to provide to caregivers, the risk of unprepared caregivers is reduced.

During the development of these resources, it was identified through casual interviewing of clinicians that mental health was not being adequately addressed, if addressed at all. The need for mental health resource guides for clinicians was developed in order to create a space for clinicians to feel comfortable with addressing mental health as well as providing certain interventions to promote mental health during practice. The resources for the clinicians included various factsheets that addressed depression, anxiety and substance use disorder as it related to ABI. It also contains assessment tools, conversation guides, mindfulness-based interventions, and cognitive behavioral therapy activities to promote change in thought patterns and healthy coping skills. Clinicians were educated on how to interpret scores of the PHQ-9 and what resources would be appropriate to use. After evaluating the scores of the PHQ-9 there was a decrease in depressive symptoms from admission to discharge among patients with an ABI.

The carryover of mental illness between caregiver and patient is reciprocal in nature. One study has found that a patient with lower life satisfaction has a caregiver with lower life satisfaction (Qadeer et al., 2017). The resources for the caregivers included factsheets that outline behavior and psychological changes that may occur after injury, scheduling templates, routine building resources, mental illness factsheets, and caregiver self-care resources to reduce

burnout. Each caregiver will receive a binder at discharge as a way to increase support at time of discharge.

**Conclusion**

Through the analysis of the initial Needs Assessment, mental illness was not being addressed with patients. The resource binder for the clinician's specifically outlines tools and the most recent evidence-based practice findings to best inform their practice. The caregiver binder was created to best support both the caregiver and the patient to create an easier discharge. Verbal education was provided for caregivers during the family conference to outline the contents of the binder and answer any questions.

The social worker and case manager will continue to administer the PHQ-9 on admission and discharge of every patient that is admitted to inpatient rehabilitation, however this study focused on patients admitted with an ABI. Through the collection of this data the therapists will be able to identify the patients that would benefit from further services and coordinate with case management and social work to appropriately address the areas of depression, anxiety and substance abuse.

Future work in this area could consist of creating a caregiver support group to increase support for both the patients and their caregivers in this area. Other research could explore the options of administering the PHQ-9 for the caregiver as well to increase contextual understanding of the overall caregiver well-being during these trying times.

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**Table 1**

| | Admission Score | Discharge Scores | Change in Scores |
|---|---|---|---|
| Patient 1 | 0 | 0 | 0 |
| Patient 2 | 5 | 4 | -1 |
| Patient 3 | 7 | 3 | -4 |
| Patient 4 | 11 | 6 | -5 |

**Appendix A**

| Week | DCE Stage | Weekly goal(s) | Objective(s) | Tasks | Due Date |
|---|---|---|---|---|---|
| 1 | Orientation | Meet with Nichole (site mentor) and the other rehab therapists to introduce myself and my project<br><br>Complete Site orientation by end of week | Meet with Nichole, Maghan, and the other rehab therapists to introduce myself and educate them on why I am here/what I will be doing for the 14 weeks<br><br>Update MOU with site mentor, make changes as necessary<br><br>Understand site environment/where to work/dress code/ etc | Update MOU if necessary<br><br>Ensure that all orientation paperwork is completed | 1/15 |
| 2 | Screening/ Evaluation | Find relevant literature for PHQ-9<br><br>Collect literature for staff intervention binder | Finding literature to support outcome assessment | Finalized MOU (due 1-20)<br><br>Writing introduction (due 1-23) and background draft (due 1-30) | 1/22 |
| 3 | Screening/ Evaluation | Update background with most relevant research<br><br>Create rough outline of project plan how to train staff, how to train caregivers<br>Create plan for addressing mental | Work with site mentor to determine most sustainable base for project<br><br>Work with social worker to introduce PHQ-9 | Create detailed plan for project including goals for training and how I plan to complete them | 1/29 |

| | | | | | |
|---|---|---|---|---|---|
| | | health with patients) | | | |
| 4 | Implementation | Work with social worker to develop sustainable plan for administration of PHQ-9 with ABI population | Collect resources for intervention binder | Design/implementation draft (due 2/6) | 2/5 |
| 5 | Implementation | Begin Administering PHQ-9(admission and discharge) | Collect resources for intervention binder | Meeting with patients and caregivers to facilitate PHQ-9 and caregiver binder | 2/12 |
| 6 | Implementation | Continue data collection of PHQ-9 (admission and discharge) | Gather data while implementing project for staff | Meeting with patients and caregivers to facilitate PHQ-9 and caregiver binder | 2/19 |
| 7 | Implementation | Continue data collection of PHQ-9 (admission and discharge) | Gather data while implementing project for staff | Meeting with patients and caregivers to facilitatePHQ-9 and caregiver binder | 2/26 |
| 8 | Implementation | Continue data collection of PHQ-9 (admission and discharge)<br><br>Complete staff in-service to present clinician binder | Gather data while implementing project for staff<br><br>Provide Inservice for staff members at IPR to implement mental health interventions into practice | Meeting with patients and caregivers to facilitate PHQ-9 and intervention binder<br><br>Discuss results with Nichole so far, adjust plan if needed | 3/5 |
| 9 | Implementation | Data collection of PHQ-9 (admission and discharge)<br><br>Finalize caregiver resources for binder | Gather data while implementing project for staff and caregivers | Finalize outcome assessment plan<br><br>Meeting with patients and caregivers to facilitate PHQ-9 and caregiver binder | 3/12 |
| 10 | Implementation | Give PHQ-9 to patients and caregivers (admission and discharge) | Gather data while implementing project | Meeting with patients and caregivers to facilitate PHQ-9 and caregiver binder | 3/19 |

| | | | | | |
|---|---|---|---|---|---|
| 11 | Implementation | Continue to administer PHQ-9 to patients and caregivers<br><br>Terminate PHQ-9 collection at end of week. | Gather all data collected and begin analysis of current admission and discharge scores. | Finalize data collection allow for any final questions from staff or caregivers collections | 3/26 |
| 12 | Discontinuation | Begin data analysis<br><br>Continue to analyze efficacy of training Finalize collection of resources<br><br>Ensure Sustainability of project | Analyze outcome assessment results<br><br>Determine best method for sharing resources and sustainability of project<br><br>Discuss with site mentor for future implementation | Create dissemination plan<br><br>Continue editing previous drafts | 4/2 |
| 13 | Discontinuation | Final analysis<br><br>Work on writing up results<br><br>Complete work necessary for dissemination<br><br>Ensure Sustainability of project | Planning for dissemination of project | Complete writing all results and outcomes<br><br>Finalize dissemination plan | 4/9 |
| 14 | Dissemination | Disseminate findings<br><br>Wrap-up on site and complete all clinical skills | Disseminate Findings to staff therapists and social work to increase carryover after discontinuation | Complete and finalize scholarly report, VoiceThread PowerPoint and Poster Presentation<br><br>Complete dissemination | 4/14 |