WELLNESS AND SUSTAINABILITY HANDBOOK FOR TRAUMATIC BRAIN INJURY (TBI): A HOLISTIC APPROACH TO BEST PRACTICES FOR TBI RECOVERY

By

Chelsey Chadwell

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Committee Membership
Dr. Jennifer Maguire, Ph.D., MSW, Committee Chair
Laurel Northrop, MBA, Committee Member
Sylvia Soper, Committee Member
Geneva Shaw, MSW, Program Graduate Coordinator

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Abstract

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The purpose of this project is to design a wellness handbook with tools and resources that assist persons with TBI to reduce stress and increase personal wellness. The wellness handbook provides tools for clients who use Making Headway Center Services. The Making Headway Center offers specialized programs to people who have brain injuries. The handbook will focus on wellness strategies such as what is wellness, eating healthy, staying active, healthcare, stress reduction and relaxation techniques. After the handbook is revised based on the evaluations, handbooks will be printed and I will hold an orientation to the handbook for Making Headway Center staff and clients.
I would like to thank the staff and clients of Making Headway Center for being so supportive and helpful during this process. I’m so happy to have published this handbook for such amazing people. It is also a privilege to have this handbook specifically designed with the clients of Making Headway in mind. Without the questions, comments and suggestions this handbook wouldn’t be what it is today. Thank you also to my friends and family for being incredibly patient while I created this handbook. I’m so lucky to have had the inspiration I did because without it I don’t think this would have been as meaningful. I sincerely thank each and every one of you.
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Introduction

The purpose of this project is to design a wellness handbook with tools and resources that assist persons with Traumatic Brain Injury (TBI) to reduce stress and increase personal wellness. Making Headway Center for Brain Injury Recovery (MHWC) is an organization with a mission to offers specialized programs to people who have brain injuries. Many of the clients at Making Headway have many difficulties with everyday activities. Most clients have memory issues resulting in lack of hygiene routines, healthy eating techniques, and overall wellness. The wellness handbook provides tools for clients who use MHWC and will focus on wellness strategies such as: a) eating healthy; b) staying active; c) healthcare; and, d) stress reduction and relaxation techniques. After the handbook is revised based on staff and client evaluations, handbooks will be printed and I will hold an orientation to the handbook for MHWC staff and clients.

Having a handbook accessible when guidance is needed rather than staff prompting them to do so will promote self-determination. Since Making Headway is the only specialized brain injury recovery center from Portland to San Francisco the importance of this project is going to be a great asset. Making Headway does have a TBI book but this is for people who have recently obtained a brain injury. Traumatic brain injuries and acquired is something that people today are still trying to better understand. This handbook will be the first attempt to provide a specialized book for clients with traumatic brain injuries daily living skills aimed at improving their wellness.
Graduate Student Positionality

Since I’ve worked with the TBI population for over a year I feel like I’ve gained a lot of great information about traumatic brain injuries. I have made relationships with the participants and they’ve told me how comfortable I make them feel when I’m working with them. After a year of working with these wonderful people I’ve noticed where they could use a little extra guidance. This is where my thought to develop a wellness manual for them fit into the picture. I’m very excited to begin this process and because of this I have to remain accountable to my actions. I will be held accountable by keeping confidentiality to the participants involved, Humboldt State Social Work Department and the code of ethics, the TBI community, and friends and family. Most of all for myself by not getting caught up in the work I’m trying to do by losing sight of my vision.
Review of the Literature

A traumatic brain injury (TBI) can affect all aspects of a person’s life, including personality and may ripple out to effect relationships with family and friends, ability to succeed in pursuit of an education, and daily living skills. A brain injury is different from a broken limb or punctured lung. An injury in these areas limit the use of a specific part of your body but your personality and mental abilities remain unchanged (Barlow, 2013). Limbs and organs can heal and regain their previous function; however, brain injuries do not heal like other injuries. Recovery from a brain injury is a functional recovery based on mechanisms that remain uncertain (Barlow, 2013). No two brain injuries are alike and the physical and mental side effects and consequence of two similar injuries may be very different. Symptoms may appear right away or may not be present for days or weeks after the injury. One of the consequences of brain injuries is that the person often does not realize that a brain injury has occurred (Barlow, 2013).

Ghajar’s research (2000) shows that since young people’s brains are still growing, the importance of cautionary action is important. In childhood, a traumatic brain injury (TBI) poses the unique challenges of an injury to a developing brain which includes the dynamic pattern of recovery over time and its medical ramifications (Ghajar, 2000). These mechanisms of injury vary with age as do the mechanisms that lead to the primary brain injury. TBI’s are common and are the leading cause of death and disability in the USA prevention is the key (Ghajar, 2000). Despite its prevalence there is an almost urgent need for research to help guide the optimal management of TBI’s and improve outcomes.
Indeed, contrary to common belief, children with severe TBI’s have a worse outcome, and many of the consequences present in the teenage years or later (Barlow, 2013). Therefore, the treatment needs to be multifaceted and should start at the scene of the injury and extend into the home and school environments. In order to do this the care needs to be multidisciplinary from specialists with a specific interest in TBI’s, should involve the family, and will often span many decades (Barlow, 2013). I believe that we may also need increased legislation to facilitate this.

Barnes, Maria, Caldwell, and Hopkins (2013) state that if professionals are familiar with the ramifications of a TBI then they will be able to figure out a solution for TBI’s much quicker than had they not been informed about the injury (Barnes, Maria, Caldwell, & Hopkins (2013). According to some nurse practitioners who have had a major role to play in the detention and diagnosis of TBI’s symptoms should be considered which could point to a TBI injury when the patient reports a possible brain injury as a result of an accident from driving, sports, assault, falls, injuries, and combat (Valente & Fisher, 2011). Recognizing the broad spectrum of symptoms will help NPs remain alert to the possibility of a TBI. Symptoms are diverse and patients may not realize that the brain was injured, so clinicians need a high index of suspicion (Valente & Fisher, 2011). Children and teenagers who are very active have a higher risk of hitting their heads, and early identification can improve treatment effectiveness, rehabilitation, and prognosis of TBI’s (Valente & Fisher, 2011).

Ghajar (2000) emphasizes the importance of educating people since assessment time after an acquired brain injury is crucial. The decrease in mortality and improved
outcomes for patients with severe traumatic brain injury over the past 25 years can be attributed to the approach of "squeezing oxygenated blood through a swollen brain" (Ghajar, 2000). According to Barlow, quantification of cerebral perfusion by monitoring of intracranial pressure and treatment of cerebral hypo perfusion is decreasing secondary injury (Barlow, 2013). In other words, before the patient reaches the hospital an organized trauma system allows for rapid resuscitation, and transport directly to an experienced trauma center significantly lowers mortality and morbidity (Ghajar, 2000).

According to Heegard & Biros (2007) educating people working in the medical field about a TBI is very important and impactful. This is a significant source of morbidity and mortality throughout the world as mentioned in the previous articles by Barlow (2013) & Ghajar (2000). Controversial topics such as hypertonic saline for increased intracranial pressure, prehospital intubation of patients who have experienced TBI, and the use of recombinant factor VIIa, are addressed (Heegaard & Biros, 2007). Barlow and Ghajar both discuss controversial topics about the importance of hypertonic saline. They feel these treatments are important because they debate the use of the saline and whether or not it helps those experiencing a TBI.

Regens and Mould (2014) discuss the prevention of a TBI by increasing the wearing of a bicycle helmets. The goal of this project was to promote bicycle helmet use via an inpatient educational program. Regens & Mould (2014) hypothesized that the program would increase bicycle helmet use. One hundred-twenty patients with history of regular, (>1 time per week), bicycle riding, (mean age 10.0 ± 3.6 years; 67 males, 53 females; 57 whites, 59 blacks, 4 other), were randomized to treatment, (n = 58) or control
(n = 62), groups (Regens & Mould, 2014). All participants received a bicycle helmet. At one month 50, (92.6%), of the intervention group and 48, (82.8%), of the control group wore a helmet every bike ride, (P<.07.) At three months 50, (96.2%), of the intervention group and 44, (80%), of the controls wore a helmet with every bike ride, (P<.03) (Regens & Mould, 2014). The study proved feasible, requiring trained personnel to deliver the intervention. Providing a helmet without the intervention was effective in 80% to 83% of cases with respect to parental report of helmet wearing compliance (Barnes, Maria, Caldwell, & Hopkins 2013). It appears that the study’s average age of the children was 10 and there were children + or – 3.5 years of this age in the study.

One study aimed to understand the readiness of rural communities to engage in community initiated (TBI) prevention. The utility of statewide TBI surveillance to monitor outcomes of local TBI prevention efforts was also assessed. The researchers involved used a quasi-experimental research design to evaluate the effects of community initiated TBI prevention programs. The methods and procedures involved a community readiness model to assess changes in communities before and after prevention programs (Barlow, 2013). Four rural counties in Colorado were selected based on population composition and TBI rates. Key informants in each county were interviewed to determine community readiness stages to engage in prevention. The interviews were repeated two years later. The results in two study counties TBI prevention activities were initiated. One county conducted a number of prevention activities and moved from “vague awareness” to “pre-planning” stage. Three counties moved from “denial” to “vague awareness” (Stallones, Gibbs-Long, Gabella & Kakefuda. 2008). TBI surveillance did not capture
rate changes in the counties. The community readiness model identified counties more likely to engage in prevention and change was observed in counties where programs were undertaken as well as in counties where no new programs were initiated (Stallones, Gibbs-Long, Gabella & Kakefuda. 2008). This is why I find that detailed local TBI data is necessary to monitor outcomes of community interventions. I will do this by interviewing and researching through local community agencies about the outcomes. By having anonymous peer group meetings and keeping track of data through participation. Also finding out how many professional personnel are properly informed on proper technique working with person who has a TBI.

People of all ages must be ready and especially trained personnel must be prepared to act fast when a disaster strikes. My project is occurring in a rural community where it can be more difficult to access the help needed when an emergency happens. I want to make a miniature guide to be passed out that would help them follow a brief set of instructions on education and awareness. The prevention and treatment of traumatic brain injury (TBI) attributable to rapid-onset natural disasters is a major challenge confronting disaster preparedness planners and emergency medical personnel responding to those incidents (Stallones, Gibbs-Long, Gabella & Kakefuda. 2008). The kinetic energy released by rapid-onset natural disasters such as earthquakes, hurricanes or typhoons, and tornadoes can cause mild, moderate, or severe TBIs. As a result, neurotrauma is a major risk factor for mortality and morbidity outcomes within the spatial domain impacted by a rapid-onset natural disaster (Stallones, Gibbs-Long, Gabella & Kakefuda. 2008). Regens and Mould elucidates major challenges associated with
immediate emergency medical response, long-term care, and prevention of post-event increases in pediatric TBIs because of child abuse when rapid-onset natural disasters occur (Regens & Mould. 2014). Mortality and morbidity in relation to TBI’s in the literature. My research will address this issue by having anonymous questionnaire given in the peer group and gaining knowledge through researching through other agencies.

In regards to a study about TBI’s in older adults a quote from the research from Center for Disease Control and Prevention states,

This study provides an overview of TBI in older adults using data from the National Trauma Data Bank (NTDB) gathered between 2007 and 2010, evaluates age group-specific trends in rates of TBI over time using U.S. Census data, and examines whether routinely collected information is able to predict hospital discharge status among older adults with TBI in the NTDB” (Heegaard & Biros, 2007, p. 25).

Results showed a 20-25% increase in trauma center admissions for TBI among the oldest age groups, (those >75 years), relative to the general population, between 2007 and 2010 (Heegaard & Biros, 2007). Older adults, (>=65 years), with TBI tended to be white females who have incurred an injury from a fall resulting in a severe Abbreviated Injury Scale (AIS) score of the head (NTBD, 2014). This is also important for older adults because once you’ve injured your brain; it has already been developed and is less forgiving. This makes it more difficult to allow for successful rehabilitation. An adult’s brain is not like a child’s brain in that the brain is not as elastic due to age. Older adults
have a higher risk of TBI including other added problems such as cognitive impairments, mobility impairments, depression, etc. (Valente & Fisher, 2011).
Methods

The expanding range of services at Making Headway include life skills classes both on and off site, a vocational readiness/volunteer program, and a Community Living Program where compatible participants are matched up and supported in shared living arrangements. The target group included male and female participants with a brain injury. The age group for the staff is from 20-60 and the clients are around the same. The number of attendees that day was 10 clients (n=10) and 10 staff (n=10). This project was aimed at people with brain injuries to live as independently as possible. This research helped contribute to their increased quality of life. The development of the handbook was based on informal observations taken over a year and a half of working at Making Headway. In addition, I obtained a lot of useful information from previous life skill classes and the curriculum offered at MHWC. The data collection was taken from a personal observation of the participants at MHWC and asking them what they thought about a handbook that would assist with daily tasks. The staff had also noticed that a handbook with the information provided may be beneficial.

The final handbook was published with Making Headway and I held an orientation with staff and clients to go over the final copy. Since the clients have memory issues it was a great chance to refresh them with the handbook. Every three months the handbook will be reviewed with staff and clients. Ideally, I hope this information is available for families. This resource book will be available in the Making Headway library.
This project was held during our staff meeting time on Friday. This was an hour long meeting which did go longer than the first time. After providing an orientation to the handbook, I answered any questions, comments, and concerns that they had about the handbook. The client meeting place took place during the class time which gave me plenty of time. The amount of clients participating was (n=10) and the staff was the same (n=10). I presented the handbook and went over the entire book allowing for questions at any time. I provided information about the significance of this book and the future plans of the development. During this time I took notes on the details people provided me with. The second time our meeting was held, I provided staff and clients with a final copy of the handbook. The instrument used was a self-administered questionnaire. The survey consisted of 5 Likert-Scale questions, with a range of helpfulness from 1 to 5 with 1= not at all, 2= a little, 3=neutral, 4= somewhat, 5= a lot. The research design was cross-sectional with the survey being administered at only one point in time. They survey was taken by the staff and participants and a summary of numerical data without revealing information was given to this presenter. While the survey provided a place for additional comments, these answers were not given or used by this presenter.

We are learning so much more about brain injuries including the complexity of the injury and knowledge about rehabilitation. Prevention is crucial in this process and I find it most important to educate all ages and professions on the topic. If we cannot continue educating people on prevention how will we have a successful outcome for patients who have a TBI? Medical staff and personnel having the ability to assess a situation and take immediate action before the situation worsens will be optimal for a
patient’s recovery from a TBI. Educating our peers and community is where it all starts, and will continue this journey of hope and rehabilitation for people with TBI. The goals of my research on TBI for Humboldt County start with outreach, education and prevention of TBI’s. I plan for it to be a resource for providers. It will be a type of on hand guide on TBI’s. I’d like to give back to community organizations like schools, hospitals, community centers, etc.

My committee members employed with Making Headway provided me with information on health objectives and calming techniques. Sylvia was my second committee member and she reviewed the conceptual framework and literature review, as well as ensuring the perspectives of everyone at Making Headway are covered in the workshop.
Results

Wellness and Sustainability Handbook

This handbook was designed as a wellness handbook with tools and resources that assist persons with TBI to reduce stress and increase personal wellness. The handbook focused on wellness strategies such as what is wellness, eating healthy, staying active, healthcare, stress reduction and relaxation techniques. I created a handbook that would be user friendly starting with a table of contents, headings and bullet points. An introduction of what wellness is and an acknowledgments page was included. I also included a guide on how to properly wear a helmet. I collected information throughout the county that I thought would be helpful with the development of this handbook.

User Evaluation of the Handbook

I presented the draft of the Wellness and Sustainability Handbook for Traumatic Brain Injury (TBI): A Holistic Approach to Best Practices for TBI Recovery to staff and clients at Making Headway. We met during our hour long staff meeting and I presented the handbook during this time. I briefly went through the handbook and I presented the material from within it. After my presentation I provided a guide to volunteer staff who already provided me with their signature on a consent form that was sent prior to this meeting. My guide had these following questions:

1. Did you find this book helpful?
2. Would you refer this handbook to other clients/staff?
3. Would you add or remove any content within the handbook?

4. What did you like best?

5. What did you dislike?

6. What could be improved for future development?

Staff and clients arrived (N=20) and were able to provide me with questions, comments, and concerns about the draft handbook. I also used the instrument self-administered questionnaire. The survey consists of 5 Likert-Scale questions, with a range of helpfulness from 1 to 5 with 1= not at all, 2= a little, 3=neutral, 4= somewhat, 5= a lot. The research design was cross-sectional with the survey being administered at only one point in time. They survey was taken by the staff and participants and a summary of numerical data without revealing information was given to this presenter. While the survey provided a place for additional comments, these answers were not given or used by this presenter. They clients and staff said that they were very pleased with how the handbook turned out and that the layout was very user friendly. They liked that the text was short in length and provided bullet points for an easy to follow guide. The information provided was very helpful and they look forward to the continuing use of the handbook. The mindfulness technique and guide to healthy eating were two of the most popular sections in the handbook. Overall they provided helpful feedback and were satisfied with the outcome of the handbook and look forward to future development.
Discussion

The information that I obtained from the participants involved in this project was very helpful. Through these results learned about traumatic brain injuries and the importance of the details included in the handbook. Making Headway staff was excited to use the handbook and provided a lot of positive feedback. It was agreed that a continuous overview every three months. This will be a great opportunity to revise the handbook with updates. This handbook will be a great tool to provide for all the clients. Many of the clients at Making Headway have many difficulties with everyday duties. Most clients have memory issues resulting in lack of hygiene routines, healthy eating techniques, and overall wellness. This book will help provide wellness and sustainability, lower stress levels, and encourage independence. Ideally having a handbook accessible when guidance is needed rather than staff prompting them to do so is another goal. This allows for a chance to become more independent.

The goals of my research on TBI for Humboldt County, CA start with outreach, education and prevention of TBI’s. My future vision for this handbook is that it will bring community organizations like schools, hospitals, community centers, etc. together and provide helpful information for people with a TBI.
**Recommendations**

I would suggest having the training every three months to review the handbook and make necessary updates or changes. Each section focuses on a specific topic and includes a practical application by allowing staff to provide tips to clients in the program. By using these sections when planning meals and activities, staff can incorporate key recommendations and best practice into their menus and daily schedules. I would also take into consideration the questions, comments and concerns from staff and mostly clients since this handbook is specifically TBI oriented. Looking to the future, I think that it would be beneficial to further collaborate within the community and hear the voices of everyone interested in a specialized handbook for TBI wellness and sustainability.
References


