

Cooking After Traumatic Brain Injury: A Cookbook for Seattle Brainworks

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Disclaimer

The information and advice held within this cookbook is not intended to replace an occupational therapist or medical personnel. This cookbook provides possible modifications and suggestions to increase participation in cooking activities at the traumatic brain injury (TBI) clubhouse, Seattle Brainworks. It is recommended to consult with a doctor or caregiver before participating in new cooking activities at home.

Abstract

The purpose of this project was to create a cookbook for the members of Seattle Brainworks so they may participate in cooking activities with various adaptations and modifications. Seattle Brainworks is a pilot clubhouse program in the state of Washington that provides a structured workday, where the members participate in meal planning, cooking, grocery shopping and financial planning.

The desired outcome of this project was for members of Seattle Brainworks to have a tool that enables them to participate in cooking in the clubhouse, as well as resources they may use to apply cooking strategies at home. The cookbook provides recommended strategies and adaptations based on common limitations associated with TBI, analysis of tasks in cooking activities such as chopping, baking and mixing, meal planning and grocery list templates, and recommendations for kitchen organization. With these tools, members of Seattle Brainworks will have strategies to increase participation in cooking.

Purpose Statement

The purpose of this project was to create a cookbook that provides recommended adaptations and guidelines so that members of Seattle Brainworks may participate in the activity of cooking during the established club workday.

Background

Traumatic brain injury (TBI) is a debilitating injury that happens without warning and can completely change the life of the person, as well as their family and friends. Injury to the brain can have expansive implications on all areas of a person's life and their individual identity. It can affect physical ability, cognition in the form of memory and learning deficits, self-awareness, and overall executive functioning (Giuffrida, Demery, Reyes, Lebowitz & Hanlon, 2009). People who have a TBI may seem completely different than prior to injury.

Each TBI will present differently depending on what area of the brain was impacted and how significant the damage was. Hemiparesis, motor coordination and balance deficits, headaches, vision loss, speech impairment and sensory changes are some of the physical changes that may occur (Carlozzi, Tulskey & Kisala, 2011). If there are physical limitations following TBI, ability to participate may change.

Cognitive damage includes loss of executive functioning, impulsivity and self-awareness deficits. Executive functioning allows participation in goal directed behaviors (Chevignard et al., 2008). Executive functioning is involved in

the process of seeing an activity as a whole and coming up with strategies to successfully engage in the activity for immediate and long-term success (Chevignard et al., 2008). Impulsivity is commonly seen after a TBI resulting in poor decision-making, irritability and aggressive behaviors, and an inability to attend to tasks (Rochat, Beni, Billieux, Van-Der-Linden & Azouvi, 2010). One or all of these cognitive changes may occur after a TBI resulting in a decreased ability to engage in all areas of life in the same way prior to injury.

Since self-awareness is often impacted, persons with TBI may not be aware of this cognitive change, which perpetuates a frustrating cycle. Gaining awareness of one's limitations is necessary to begin the process of recovering function following a TBI (Dirette, 2002). Togliola and Kirk (2000) suggest that use of familiar activities and environments is one way to approach self-awareness of deficits following a TBI. Once people with TBI engage in activities with which they are familiar and are no longer able to complete, the realization of limitations can increase self-awareness of limitations.

Prospective memory is also often impacted following a TBI. Prospective memory is the ability to recall necessary information to participate in a goal directed activity. This occurs without prompting and a person is required to interact with memory in a way that produces the desired results (Clune-Ryeberg et al., 2011). With deficits in prospective memory, there are often severe limitations in ability to engage in functional activities of daily living (Clune-Ryeber, et al., 2011). Procedural memory involves activities that have been done repetitively, and are often less impacted after TBI. If a person has engaged in an

activity enough that it has become procedural memory, there is a greater likelihood that person will recover that specific function.

Rehabilitation to address physical and cognitive deficits following TBI broadly includes remediation and/or compensation. Remediation is therapy that involves recovery of lost function, whereas compensation provides adaptations to allow for participation in the specific functional performance of tasks (Gillen, 2011). Cognitive rehabilitation most often includes a mixture of both techniques, and careful consideration of the needs of the client should guide therapy decisions (Gillen, 2011). Although functional recovery is possible for many years after onset of injury, the greatest gains generally come in the first year (Neistadt, 1994). For persons who are more than a year post injury onset, compensatory approaches that focus on engagement in functional activities may yield the best results (Gillen, 2011).

Cooking is a functional activity that many people engage in during every day life. It is a multiple steps process that is often impaired in people with TBI due to loss of executive functioning (Powell, Temkin, Machamer, & Dikmen, 2007). Although not all people will have cooked prior to a TBI, cooking is a skill that is widely used and can easily demonstrate areas of weakness in processing following a TBI. It is important to recognize what was a part of the client's life prior to injury, because new tasks are difficult to learn and require more work to achieve success. Additionally, if cooking was not a part of the routine prior to injury, the person with TBI may be less likely to gain self-awareness through participation in a cooking activity (Powell et al., 2007).

Cooking is not only a means to address eating and feeding, it can also be a skill necessary to take care of one's family, a leisure activity, and provide a means to express religious and cultural rituals. Being able to participate in the activity of cooking can be an expression of one's identity and if this activity is not accessible due to cognitive and physical impairments, a person with TBI is further limited in participating in activities that are part of self-identity (Johnston, Goverover, & Dijkers, 2005).

Seattle Brainworks is a clubhouse model for TBI that addresses community integration through preparation to return to work. The clubhouse model focuses on the person first concept, where the person knows what is best for them and with the support of members and staff; they design their own goals (Jacobs, 1997). Through the clubhouse model, members are able to learn from each other, and have the ability to learn from their mistakes in an understanding and accepting environment (Jacobs, 1997). The Seattle Brainworks structures its day around meal planning, meal preparation and financial planning. These activities incorporate the use of multiple step directions, money management, planning and social interaction. All of these areas address common deficits that are found following TBI, and through peer support and modeling, some of these deficits are addressed and potentially minimized (Jacobs, 1997).

Although Seattle Brainworks is working to include all members in the activity of meal planning and preparation, there are several members who expressed interest in increasing participation in the cooking unit. The floor coordinator works to engage all members, but it is sometimes difficult for just

one person to find opportunities to engage all members. Most often the members who are already capable of completing the activity do most of the work. The members and staff expressed interest in creating more opportunities for all the members who are interested in participating in the cooking unit.

The cookbook provides recipes and suggestions for adaptive equipment to use such as built up handles, slip proof surfaces, and modified cutting boards. As a result, more members have an increased opportunity to participate in cooking activities. Compensatory strategies include recommendations to organize the kitchen workspace, checklists and use of timers. Self-esteem may improve as members become more able to participate in the workday. Additionally, members may become more successful in potential work placement and participation in home cooking activities as well.

Overview of the Project

The cookbook was created to allow members of Seattle Brainworks who have not been able to previously participate fully in the activity of cooking to be able to do so both in the clubhouse and possibly at home as well. In Section II of the cookbook, common disabilities associated with TBI are addressed such as memory and learning deficits, cognitive and physical deficits, and impulsivity. Recommended kitchen organization (Section III), suggests materials to be used in the kitchen (Section IV), modification of tasks (Section V), step by step instructions and adaptations of recipes (Section VI), and templates for meal planning and grocery shopping list is included within the contents of the

cookbook. Member guidance and peer modeling is demonstrated through picture representation to improve understanding of the cooking tasks.

The recommended tools and kitchen organization sections were created to optimize success in the meal preparation activity. The kitchen organization section can be copied for at-home use and is transferable to possible location change of the clubhouse. Recommendations include labeling shelves, color-coding pots and pans and cabinet organization. The recommended tools section indicates tools that can be used to enhance participation for members interested in participating in the cooking activity.

A task analysis of components of the cooking activity such as chopping, baking, frying, mixing and boiling are provided with instructions and pictures to enhance participation. Each analysis focuses on visual representation, which can be utilized by the members while cooking. Peer modeling is demonstrated in the cookbook to follow the mission statement of Seattle Brainworks.

Recipes are broken down into required ingredients, necessary tools, directions and required skills. These recipes are appropriate to be copied and used for home meal preparation. They are also appropriate for days when there are one to three members participating in the meal preparation, but can be completed with multiple people when space in the kitchen is available and more members are present.

Project Goals and Objectives

Goal 1: Upon reading the cookbook, a person with a TBI will be able to participate in a group-led cooking activity at Seattle Brainworks.

Objective 1: After members completed one cooking activity they were able to implement at least one strategy that allowed them to participate in cooking activities.

Objective 2: After members completed one cooking activity they were able to implement at least one adaptation that allowed them to participate in the cooking activity they would not have been able to previously participate in.

Goal 2: After participating in the cooking activities, members will be able to use strategies to engage in cooking simple recipes at home.

Objective 1: Members who are interested in cooking at home will utilize the suggested kitchen organization system to be successful in meal preparation.

Objective 2: In following the strategies that have been successful in the clubhouse workday, members who are interested in cooking at home will copy at least two recipes to try at home.

Desired Outcomes

The desired outcome of the project was for members of Seattle Brainworks to have a tool that enables them to participate in the cooking activity in the clubhouse workday. They have instructions on how to modify their kitchen

in order to make food preparation more successful. They have recipes that are broken down into parts describing modifications and strategies that can be used in each piece of the recipe.

The members also have a tool to use in participating in cooking at home. With the assistance of a caregiver or family member, members who are interested can organize and structure their kitchens at home so they can begin to use some of the recipes for home use.

Twelve cooking sessions were observed and guided by the project leader to discover the specific skills and interests of the members. Members provided feedback of organization of the kitchen to ensure navigability for members, interests in the recipes, and ease of use.

Implications for Occupational Therapy

Cooking is an activity that is done daily by many people without regard to the multiple steps and strategies utilized throughout the process. Cooking is part of daily living and is a necessary skill in raising a family and caring for others. It is present in celebrations of religious and cultural rituals. For some, cooking is an instrumental activity of daily living (IADL) and for some a leisure activity. Cooking can be done alone or as a way of engaging in social participation (AOTA, 2008).

For people who have had a TBI, cooking may no longer be an activity they can participate in due to cognitive deficits such as loss of executive functioning (Powell, et al., 2007).

Cooking is important not only for meeting the basic needs of nutrition, but can also define who a person is. It becomes one way to take care of one's self

and family, it can be a way of engaging in cultural roles and individual expression. This project serves as a tool that will enable the members of Seattle Brainworks to engage in the activity of cooking to meet their individual needs.

Theoretical Model and Application to Framework

Occupational Adaptation

The Occupational Adaptation (OA) model addresses the characteristics of the individual (internal) and the environment (external) and how these two areas interact to create an occupational response. A constant within this model is a desire for mastery (Shultz, 2009). Because of this, OA is heavily reliant upon client-centered practice. Without the desire from the individual and his/her demand from the environment, an occupational challenge will not arise. Although this is a linear model, multiple subsystems are working simultaneously. In order to engage in an adaptive response, an individual will use primary and secondary adaptation energy. Primary energy occurs when a person is actively engaged thinking about the task at hand. Secondary energy occurs when a person does something unrelated to the activity but underlying processing is involved in finding a solution to the task. The use of this energy will determine the nature of the quality of the response (Schultz, 2009).

In this project, the OA model helps illustrate how the individual desire and the environmental demand for mastery will determine the outcome of the adaptation. This project addresses developing cooking strategies by adapting the task and utilizing peer support, which is a natural fit within in the OA model. The

OA model was chosen to guide this project because of the emphasis on interaction between person and occupational environment and teaching people how to successfully adapt. In the development of this relationship the person adapts as necessary and will hopefully have a successful outcome. Some challenges can be greater than the person is equipped for, and in this scenario the environment must be adapted. At Seattle Brainworks some members are able to complete cooking tasks with less guidance while some many need more modifications to the environment. The nature of the clubhouse model is reliant upon individual mastery with the guidance of others. OA is a client-centered model where the therapist facilitates an adaptive response within the client. Therefore, the client is not dependent upon the therapist, but using the adapted environment will allow for future desired occupational response (Crepeau, Cohn & Schell, 2009).

Application of the OT Practice Framework

Occupational therapy is an expansive field that promotes health and wellness through participation in occupation. Occupation is expressed through activities of daily living (ADL), instrumental activities of daily living (IADL), work, sleep, leisure, education, play and social participation (AOTA, 2008). Cooking as presented in this project could be expressed in multiple categories within the scope of practice. For some, cooking would fall into activities of daily living as a means of eating and feeding. It can function as an IADL as one raises a family, or as meal preparation that entails consideration to nutrition and health. Cooking

can also mean participation in work, either returning to work or finding new work after an injury. Cooking also can be a source of great enjoyment and would fall into the category of leisure.

Providing a tool for members of the TBI clubhouse to engage in the activity of cooking allows them to express cooking within the context that is meaningful to each member. For some this may be expressed simply as social interaction in the clubhouse day, or it could also provide a skill to help at home.

Skills and Knowledge Needed for this Project

Activity analysis
Knowledge of cooking
Knowledge of adaptive equipment and where to acquire it
Knowledge of compensatory strategies
How to create actual cookbook (printing materials)
Knowledge of typical disabilities following TBI (impulsivity, cognitive deficits, physical impairments, emotional)
Knowledge of OA model
Knowledge of strategies used by people with TBI that are maintainable
Knowledge of nutritious but affordable foods to make cooking program successful
Realistic goals of members in the clubhouse and at their homes
Creative solutions for more affordable adaptive equipment
Costs of adaptive equipment

Materials/Supplies/Equipment

Cost	Materials/Supplies/equipment
\$117.00	Bound cookbook with durable paper (3 copies)
Purchase as needed	Adaptive equipment for clubhouse
\$10.00	Easel for cooking tasks (separate from cookbook)
purchase as needed	Kitchen equipment such as timers, mitts, grip surface, etc
\$15.00	Laminated spiral bound notebook

Procedures for Future Implementation

The following steps were taken and skills were acquired in order to complete this project:

- Project leader and director of Seattle Brainworks met to discuss needs of the members. The following decisions were made:
 - The project must follow the guidance of the members in order to comply with mission of the organization
 - Members must choose if they want to participate in the activity, some members may not be interested
- Project leader spent time in the clubhouse, learning the specific limitations to cooking and interests of the members
 - This includes members filling out questionnaires about meals they like, interests in increasing participation in cooking at home and in the clubhouse, and access to materials and caregiver support
 - Participated in more than 10 cooking sessions with different members of the clubhouse

- Interacted with members to learn more about their individual differences
- Time was spent testing recipes at home, learning new ways of cooking that met the interests of the members
- Research and exploration was undertaken in order to achieve the following:
 - Understand common diagnosis associated with TBI
 - Learn more about adaptive tools and strategies to increase participation
 - Understand the clubhouse method and their mission
 - Costs and types of materials that should be used when making the cookbook
- Constant reevaluation of the project was undertaken to make sure the needs of the organization were met.

Special Circumstances

Seattle Brainworks anticipates receiving a grant soon that will enable the program to move into a new building. The cookbook and kitchen plan is adaptable to the new environment, which will have a more accessible kitchen.

This project was designed to be navigable to members with a TBI. Fewer distractions, fewer words and more visual representation were used to make the cookbook user friendly.

Limitations of this Project

The primary limitation of this project was access to adaptive equipment. Many of the members were able to increase participation with use of adaptive equipment and tools such as pot stabilizers, rocking knives and cutting boards with prongs. In the future, Seattle Brainworks hopes to purchase adaptive equipment and tools, and therefore increase participation with suggestions from the cookbook.

Another limitation of the cookbook is ability to use the recipes for cooking at home. For some members, cooking at home will be an easy transition and they can incorporate strategies into current cooking activities. For others, guidance from a caretaker will be required, and the recipes within the cookbook may be too challenging. Future cookbooks could have additional recipes that are simplified and appropriate for home use.

Sustainability of this Project

In order to increase sustainability of this project, meals were chosen that met the needs of the members as well as the organization. Cooking tasks analysis within the cookbook can be used to increase participation when using other recipes. This cookbook could also be tested at other TBI clubhouses that are interested in increasing member participation. An electronic copy will also be provided for the organization so they can make copies as needed in the future.

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