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An Occupation-Based Protocol for Treatment of Adults with Burn Injury

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AN OCCUPATION-BASED PROTOCOL FOR TREATMENT OF ADULTS WITH
BURN INJURY

By

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Submitted to the Occupational Therapy Department

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In partial fulfillment of the requirements for the degree of

Master's of Occupational Therapy

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This Scholarly Project, submitted by Lyndsey Felber and Megan Metelak in partial fulfillment of the requirement for the Degree of Master's of Occupational Therapy from the University of North Dakota, has been read by the Faculty Advisor under whom the work has been done and is hereby approved.

Faculty Advisor

Date

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Title An Occupation-Based Protocol for Treatment of Adult's with Burn Injuries

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ABSTRACT

People are occupational beings. Occupations build the structure of a client's day. Thus, occupations give life its meaning (Hocking, 2001). Occupational therapists have a holistic viewpoint of clients that focuses on improving their quality of life through meaningful occupations. There is a lack of literature supporting the use of occupation-based intervention with adults with burn injuries. Throughout the literature preparatory and purposeful interventions are prominent for burn rehabilitation. (Holavanahalli et al. 2011, Fung et al., 2010, Parry et al., 2012). According to Richard et al. (2008), current techniques to treat burn injuries have remained unchanged for centuries. They suggest that there needs to be a new approach to the treatment of burn injuries. Many occupational therapists find it difficult to provide occupation-based interventions when they need to meet the medical system needs as well (Rogers, 2007). For these many reasons, the authors have created an occupation-based protocol for the treatment of adults with burn injury.

This protocol has been developed to guide occupational therapists through the burn rehabilitation process using occupation-based treatment. When using this protocol the occupational therapist should focus their treatment on the client population of adults with burn injuries. The layout of this protocol is based in accordance with the rehabilitative phase of treatment, specifically with inpatient rehabilitation. The Occupational Therapy Practice Framework (American Occupational therapy Association, 2008) is utilized to guide the process of service delivery. Occupational

therapists are directed through the initial evaluation, intervention plan development, intervention implementation, and re-evaluation/outcomes. Based on the Occupational Adaptation Model (Schkade & Schultz, 1992; Schultz & Schkade, 1992; Schkade & McClung, 2001), this protocol will provide occupational therapists with inspiring ways to create a client-centered atmosphere and a refreshing alternative to the traditional burn rehabilitation process.

CHAPTER I

INTRODUCTION

According to Karter (2012), in the year 2011, one person died every 208 minutes and one person acquired a burn injury every 30 minutes in the United States. The American Burn Association (ABA) reported an estimated 450,000 individuals with burn injuries received medical treatment in 2011 (ABA, 2011). The etiology of burn injury includes: fire/flame (44%), scald (33%), contact with hot object (9%), electrical (4%), and chemical (3%) (ABA, 2011). Adults ranging in age from 20 to 50 years old represent the age group with the highest prevalence of burns treated in burn centers that contributed to the 2011 National Burn Repository (NBR). This age group also represents the highest prevalence of fire/flame injury cases, the most common etiology, in comparison to younger and older age groups (ABA, 2011). Due to the high prevalence of burn injuries in within the adult population, adults will be the population of interest to this scholarly project.

Of interest to the practice of occupational therapy, current research on the occupation-based interventions in the treatment of burn injuries is limited. Occupation-based interventions are valuable to the rehabilitation process. However, they are often missing from the treatment with this population (Bracciano, 2011; Richard et al., 2008; Rogers, 2007). Studies have been done to provide occupation-based interventions with the pediatric population with burn injuries (Melchert-Mckearnan, Deitz, Engal, & White,

2000). The results indicated that the use of purposeful and occupation-based interventions significantly increased the outcome of therapy. With this in mind, the authors researched the benefits of occupation-based interventions with the adult population in physical disabilities with the intent of creating an occupation-based protocol to inform and reform occupational therapy practice.

Earley and Shannon (2006) indicated that adults with adhesive capsulitis had decreased pain, increased range of motion, and enhanced occupational performance with the use of occupation-based interventions. This is informative and an indication that the use of occupation-based interventions will benefit the adults with burn injury population. According to Richard et al. (2008), current techniques to treat burn injuries have remained unchanged for centuries. They suggest that there needs to be a new approach to the treatment of burn injuries. Many occupational therapists find it difficult to provide occupation-based interventions when they need to meet the medical system needs as well (Rogers, 2007). For these many reasons, the authors have created an occupation-based protocol for the treatment of adults with burn injury.

The authors have developed an occupation-based protocol for adults with burn injuries. There are three phases to burn rehabilitation: emergent, acute, and rehabilitative (Serghiou, Holmes, & McCauley, 2004). The emergent phase is defined as the initial part of burn care from admission to approximately 72 hours post burn (Serghiou, Holmes, & McCauley, 2004; Pessina & Orroth, 2008). The next phase is the acute phase. This phase lasts anywhere from several days to several months until the wounds are closed. This is the phase where many of the reconstructive surgeries and skin grafts occur (Pessina & Orroth, 2008). After the acute phase is the rehabilitative phase. This phase occurs after

wound closure until scar maturation. This phase takes anywhere from six months to two years (Pessina & Orroth, 2008).

This protocol is designed to address the rehabilitative phase of burn management. The emergent and acute phases provide an important role for the occupational therapist and should not be ignored. However, the emphasis of these phases is more on client survival versus the return to occupational roles.

There are many key features and preparatory techniques involved in the rehabilitative phase of burn treatment. Traditional burn rehabilitation interventions that the occupational therapist should consider using include: range of motion and stretching, strengthening, scar massage, pressure garments, desensitization, endurance training, coordination and balance development, and activities of daily living (ADLs) and instrumental activities of daily living (IADLs). This protocol addresses each of these interventions and provides ideas to incorporate them in an occupation-based manner. To provide more guidance throughout the product, a case study is included to demonstrate application of the occupation-based protocol with an adult who has survived burn injuries.

An acquired burn injury can lead to implications of physical and psychological issues at varying levels, depending on the client. These issues provide barriers for individuals when returning to engagement in meaningful occupations. Occupational therapists continuously promote engagement in occupations to help structure everyday life and contribute to the client's health and well-being (American Occupational Therapy Association, 2008).

In order to guide clients through their individual barriers and promote occupational engagement, the therapy process should have a holistic approach guided by theory. The Occupational Adaptation (OA) Model is holistic, complex, and client-centered with a focus on enhancing an individual's ability to adapt to various occupational challenges (Schkade & Schultz, 1992; Schultz & Schkade, 1992; Schkade & McClung, 2001; Cole & Tufano, 2008). The concepts and constructs of the OA Model will be integrated throughout this protocol and facilitate the therapy process. There are four main constructs that guide the reasoning process of an occupational therapist with integration of OA into treatment, *occupations*, *adaptive capacity*, *relative mastery*, and *occupational adaptation process*.

Occupations actively involve the person, are meaningful to the person, and have a tangible or intangible process and product (Schkade & Schultz, 1992; Schultz & Schkade, 1992; Schkade & McClung, 2001; Cole & Tufano, 2008). Every person has their own unique set of occupations that they find meaningful. *Occupations* can include anything that a person does from when they wake up to when they go to sleep at night. There is a strong emphasis on the use of occupations throughout the treatment process in this protocol, in order to provide client-centered therapy.

Each person has their own *adaptive capacity*, which is their ability to notice when change, modification, or refinement is needed to overcome occupational challenges (Schkade & Schultz, 1992; Schultz & Schkade, 1992; Schkade & McClung, 2001; Cole & Tufano, 2008). This tends to occur when a person has to adjust because their typical adaptive response doesn't meet the challenges of an occupation. Burn injuries may cause clients to have limitations that interfere with their ability engage in occupations. With this

protocol, occupational therapists can help clients to adjust behaviors while engaging in their meaningful occupations.

Relative mastery is how the person self-assesses or views their efficiency of response, effectiveness in response, and satisfaction in response to engagement in occupations (Schkade & Schultz, 1992; Schultz & Schkade, 1992; Schkade & McClung, 2001; Cole & Tufano, 2008). A person's efficiency of response may include self-assessment of use of time, energy, and resources. A person's effectiveness in response may include self-assessment of successful achievement of one's goals. A person's satisfaction in response may include self-assessment of one's self-perceptions and societal norms (Schkade & Schultz, 1992; Schultz & Schkade, 1992; Schkade & McClung, 2001; Cole & Tufano, 2008). The occupational therapist may utilize the Relative Mastery Measurement Scale (George, Schkade, & Ishee, 2004) to help the client understand their relative mastery after engaging occupation-based interventions during treatment.

The *occupational adaptation* process occurs when a person is faced with an occupational challenge and they respond adaptively and masterfully when engaged in occupations. The key components of the process include the person, the occupational environment, and the interaction between the person and environment (Schkade & Schultz, 1992; Schultz & Schkade, 1992; Schkade & McClung, 2001; Cole & Tufano, 2008). The initial evaluation proposed by the authors in this protocol aids the occupational therapist in gaining an understanding of the client (person) and their occupational environment. Through engagement in occupation-based interventions, the person-environment transaction can guide the client's adaptation process.

Every person engaging in typical occupations each day experiences desire, demand, and press for mastery (Schkade & Schultz, 1992; Schultz & Schkade, 1992; Schkade & McClung, 2001; Cole & Tufano, 2008). The key components mentioned above make up the adaptation process towards *relative mastery*. The person should have the desire for mastery, having motivation to engage in occupations and improve their performance. The environment provides the demand for mastery by having criteria for successful occupational performance. The person-environment transaction develops a press for mastery with the inclination to meet the expectations of an occupational challenge. Through evaluation and developing rapport, the occupational therapist can learn about the client's occupational challenges and desire, demand, and press for mastery. This is important to understand so that the occupational therapist can provide graded activities, occupation-based interventions, and client-centered treatment.

The OA Model does not specify interventions to be used by the occupational therapist. However, there is emphasis on the use of a holistic approach to treatment and a collaborative relationship between the client and his or her therapist (Schkade & Schultz, 1992; Schultz & Schkade, 1992). Throughout the treatment process the client should be the agent of change and the therapist should be the facilitator. The overall goal of intervention is for the occupational therapist to facilitate the client's ability to adapt for engagement in personally meaningful occupational activities (Schkade & Schultz, 1992; Schultz & Schkade, 1992; Schkade & McClung, 2001; Cole & Tufano, 2008). The focus for this protocol is to encourage occupational therapists to utilize occupation-based interventions with adults during the rehabilitative phase of burn treatment. Each client will have individualized limitations and with the therapist's facilitation, client's can work

on improving their performance through engagement in meaningful occupational activities. An additional value to the profession of occupational therapy will be movement towards a paradigm shift that enhances practice beyond the traditional, as Richard et al. (2008) pointed out.

The following Chapter II presents a literature review and articulates the need for occupation-based interventions to be applied when treating patients with burn injuries. Chapter III acknowledges the methodology utilized by the authors towards gathering foundational information and development of the protocol. Chapter IV addresses the authors' product, which includes an overview of evaluations and interventions for occupational therapists. Also, within Chapter IV is a case study to provide a general example for the application of the protocol to the burn rehabilitation process. Finally, the last chapter, Chapter V, summarizes the protocol in its entirety and provides recommendations for further research and implication for application of the protocol.

CHAPTER II

REVIEW OF LITERATURE

People are occupational beings. Occupations build the structure of a client's day. Thus, occupations give life its meaning (Hocking, 2001). Occupational therapists have a holistic viewpoint of clients that focuses on improving their quality of life through meaningful occupations. There is a lack of research supporting the use of occupation-based intervention with adults with burn injuries. However, there is a significant amount of research related to the topic of occupation-based intervention and a wide array of preparatory and purposeful interventions for clients with burn injuries.

According to Pierce (2001) an activity is presented as more general (etic perspective) and fitting to all sorts of people, contexts, and daily meanings. In comparison, an occupation presents a certain meaning in each person's life; it is more subjective (emic perspective), personally constructed, and perceived within a certain context. Past research has suggested that the emic perspective (occupation) is more valued than the etic perspective (activity) (Pierce, 2001). Price and Miner (2007) indicate that using occupation in treatment aids the clients with rehabilitation due to treatment becoming more meaningful.

Occupations are comprised of everyday activities related to an individual's personal roles, needs, and wants throughout their lifetime (Price & Miner, 2007). It is easy to incorporate several activities into an occupational experience. However, it is important for occupational therapists to be skilled in understanding the separation of

activity ideas, occupational experiences, and occupational patterns for providing client-centered therapeutic interventions (Pierce, 2001). According to Gray (1998) there are two ways the occupation can be utilized in the therapy process. Occupation-based intervention involves using occupation *as means* and *as end* and involving the therapeutic relationship along the way (Gray, 1998; Price & Miner, 2007).

Occupation-as-end is where occupation is used as the end goal for therapy. All tasks done in therapy will lead to the engagement of said occupation. Traditionally rehabilitation with this focus in mind may or may not utilize occupation in therapy. Preparatory and purposeful activities are likely to be used more so than when occupation is used as means. This process provides an overarching goal and purpose to the client for therapy. Occupation as means refers to the therapy process of using occupations to reach the outcome. When occupation is used in this way, it may provide more relevance to the therapy process for the client (Gray, 1998). When looking at occupation as a person's one-time, individualized experience, a client's unique perspective and goals are accessed and occupational therapy is enhanced by promotion of client-centered practice (Pierce, 2001).

Occupational therapy focuses on the concepts of prevention and remediation of dysfunction through the use of occupation-based activities. These types of activities provide a client with a purposeful and meaningful experience throughout therapy (Kohlman McGourty, Givens, & Buddingh Fadder, 1985). The current literature does not have a clear definition of how occupation-based practice is carried out during the intervention process (Price & Miner, 2007). Occupations should be considered

throughout the entire rehabilitation process including assessments, interventions, and outcomes.

Hocking (2001) investigated the difference between a “top-down” approach and “bottom-up” approach to occupation-based assessments. To reach desired outcomes it is more appropriate to use a “top-down” approach (Hocking, 2001). The “top-down” approach allows the occupational therapist to gain an understanding of the person’s occupational performance issues rather than looking at performance factors. Using the “top-down” approach also allows the person to have a better understanding of the process of occupational therapy intervention (Hocking, 2001).

Hocking (2001) conveyed that occupations build the structure of a person’s day and provide life with meaning. This is the base line for why occupation-based assessment and intervention are so important. When function is disrupted, occupations become more difficult to engage in and the meaning and quality of life decrease. Rehabilitation of the occupations will help gain the meaning of life back for the person. In order to use occupations in intervention, occupation-based assessments must be utilized by the occupational therapist (Hocking, 2001).

Through observations and interviews, Price and Miner (2007) identified therapeutic strategies that help occupational therapists implement occupation-based intervention into practice. The initial stages of occupational therapy should include activities that are meaningful to the client. One strategy involves finding a “just right challenge.” A “just right challenge” is when the client is set up to succeed. Rapport is built faster due to the trust they form with the therapist (Price & Miner, 2007). A “just

right challenge” also facilitates independence during engagement in occupations (Gray, 1998).

Price and Miner (2007) suggest another strategy that involves giving the client control in therapy. The occupational therapist should encourage clients to take an active role with decision making to increase their perception of having control over their health, as well as engagement and adherence with treatment (Stewart, Bhagwanjee, Mbakaza, & Binase, 2000). For example, the occupational therapist may allow the client to choose the duration of an intervention or give them different interventions to choose from. When the client feels in control there is increased motivation to engage in the intervention. Thus, leading to better outcomes and more enjoyment throughout the intervention (Melchert-Mckearnan, Deitz, Engel, & White, 2000; Price & Miner, 2007).

Many occupational therapists focus their occupation-based treatment on activities of daily living (ADLs), which hinders a client’s full engagement in the intervention process. Self-cares have been found to be uninteresting and overwhelming to some client’s (Gray, 1998). Gray (1998) implies that self-cares should not be the only occupations considered during occupation-based intervention. Gray credits Baum by acknowledging that occupational therapists should be open to utilizing various occupations relevant to the client’s history, in order to cover all domains of the occupational person (as cited in Gray, 1998).

There is limited literature pertaining to care of persons with burns comparing rehabilitation strategies utilizing occupation-based intervention (Spires, Bowden, Ahrns, & Wahl, 2005). According to Richard et al. (2008), burn rehabilitation has remained unchanged for centuries. The current literature on burn rehabilitation focuses more on

specific phases of treatment, preparatory and purposeful interventions rather than occupation-based interventions. Thus, it appears that a bottom-up intervention approach is a better researched or perhaps favored currently by occupational therapists. The literature also enhances the use of a multidisciplinary team approach.

Occupational therapy's role is introduced during the acute phase of treatment for clients with burn injuries. According to Whitehead and Serghiou (2009), 91% of therapists reported that initiation of evaluation was conducted within 24 hours of the client's admission. Screening and referral is different based on whether a client is in the acute care stage or later stage of healing (Kohlman McGourty et al., 1985). During the acute phase occupational therapists screen clients for presence of edema, decreased range of motion (ROM), contractures, graft damages, abnormal sensation, psychological issues, and other potential problems. Assessments performed at the acute stage are highly important for developing an effective treatment plan (Whitehead & Serghiou, 2009). The goal of occupational therapy is to treat patients holistically, by considering the location, size and depth of the burns and recognizing the patient's needs (Kohlman McGourty et al., 1985; Whitehead & Serghiou, 2009). Initial acute care treatment plans tend to have a focus on contracture prevention and preserving joint function (Whitehead & Serghiou, 2009).

Rehabilitation begins in acute care and transitions to inpatient rehabilitation as soon as possible to ensure the best outcomes (Okhovatian & Zoubine, 2007; Schneider et al., 2012; Spires et al., 2005). Spires et al. (2005) found that clients with burn injuries in an inpatient rehabilitation unit had overall lower Functional Independence Measure (FIM)™ scores versus clients who transition directly to a skilled nursing facility,

representing increased independence when compared to patients who transitioned into a nursing home after the acute phase of rehab. Overall, inpatient rehabilitation leads to improved FIM™ scores, shorter lengths of stay, and more rapid recovery in function. Shorter lengths of stay can also lead to a financial benefit that needs to be considered for reimbursement purposes (Okhovatian & Zoubine, 2007; Spires et al., 2007). Okhovatian and Zoubine (2007) estimated that a shorter length of stay by four days for all patients with burn injury would save approximately \$60,000 each year.

Holavanahalli, Helm, Parry, Dolezal, and Greenhalgh (2011) distributed a survey; 155 therapists responded indicating that during inpatient rehab 81% of occupational therapy treatment begins on the day of client admission and that it is typical for occupational therapists to visit client's two times per day. Okhovatian and Zoubine (2007) supported this through a study comparing two different burn rehabilitation protocols. Routine rehabilitation included 15-20 minutes of therapy, one time per day; burn rehabilitation treatment included 30-45 minutes of therapy, 2-3 times per day. After routine therapy, 73% of clients developed burn contractures, while the more intensive burn therapy had only 6% of clients develop burn contractures, indicating the benefits of increased visits (Okhovatian & Zoubine, 2007). It may be concluded that intensive inpatient burn rehabilitation leads to improved client outcomes.

During the inpatient rehab phase, occupational therapy's focus is on the prevention of contractures. Development of contractures is prevalent following burn injuries and can put clients at risk for impairments with functional mobility and ADLs, as well as return to work and reintegration in their family and community (Stewart et al., 2000;Yohannan et al., 2012). The focus should also be on ROM, prevention of abnormal

scarring, psychological factors, strength and endurance (Anzarut, Olson, Singh, Rowe, & Tredget, 2009; de Lateur et al., 2007; Kohlman McGourty et al., 1985; Parry et al., 2012; Whitehead & Serghiou, 2009). These studies support the use of a bottom-up approach utilizing occupation-as-end.

Much of the focus of inpatient rehabilitation is similar to the occupational therapy focus during the outpatient rehabilitation phase. Patients with burn injury are seen at an outpatient clinic after discharge for follow-up rehab as indicated by 94% of the respondents to a survey conducted by Holavanahalli et al. (2011). Results from the survey also indicated that occupational therapists are the second most prevalent burn team members to routinely provide treatment in an outpatient rehab setting. Along with the continuation of treatment focus from the inpatient rehab phase, occupational therapists begin to increase their role with wound care and management during the outpatient phase (Holavanahalli et al., 2011).

The roles of the occupational therapist include, but are not limited to: providing splints, positioning the patient, assisting in range of motion, strength, and endurance exercises, fitting for pressure garments, client education on coping techniques and skin care, and preparation for returning to daily lifestyle (Kohlman McGourty et al., 1985). Ninety-five percent of burn centers that responded to a survey conducted by Whitehead and Serghiou (2009) reported that positioning begins within 24 hours after acute admission and focuses on elevating extremities to reduce edema. During the acute phase positioning, as well as splinting, is also utilized to promote function, maintain ROM, prevent skin breakdown, and protect graft sites (Kohlman McGourty, 1985; Serghiou, Holmes, & McCauley, 2004). Others also report that splinting is initiated within 24 hours

after admission to the acute phase of rehab (Holavanahalli et al., 2011; Whitehead & Serghiou, 2009). Whitehead and Serghiou (2009) found that it is ideal to fabricate splint during operative procedures, in order to ensure the best positioning of the joints being splinted. Splinting can also occur before and/or after surgery to help prevent contractures, which can hinder functional ROM (Holavanahalli et al., 2011; Vehmeyer-Heeman, Lommers, Kerckhove, & Boeckx, 2005). Vehmeyer-Heeman et al. (2005) found that splinting and intensive therapy after grafting provides significant increases in shoulder ROM after a year.

However, through a recent survey conducted by Holavanahalli et al. (2011), results indicated that occupational therapists would most often provide therapeutic splinting after a contracture has begun to form rather than splinting as a preventative measure. The purpose of splinting changes between acute and rehab phases, moving from maintaining ROM to increasing ROM (Serghiou et al., 2004).

Kolhman McGourty et al. (1985) emphasize the use of positioning, splinting, and pressure garments to prevent or decrease the need for reconstructive surgery for patients with burn injury. Pressure garments and scar massage are the most common treatment techniques to use together for scar management (Holavanahalli et al., 2011). Scar massage should be implemented one week after the patients burn wounds have healed (Serghiou et al., 2004). Pressure garments can be used to prevent abnormal scarring and should be utilized during treatment as soon as the patient's skin is healed (Anzarut et al., 2009; Holavanahalli et al., 2011).

According to Stewart et al. (2000) management and prevention of hypertrophic scarring is most successful when treatment with pressure garments is implemented early

and aggressively. Occupational therapists must be aware of the stages of healing for burn injuries in order to implement the most appropriate scar management techniques (Simons, King, & Edgar, 2003). Patients who use pressure garments are advised to wear them 24 hours per day with removal only for bathing, exercise, and various ADLs (Serghiou et al., 2004; Vehmeyer-Heeman et al., 2005).

To ensure the client's adherence to wearing pressure garments, the occupational therapist needs to consider garment type, comfort, cosmetics, and instructions (Stewart et al., 2000). Stewart et al. (2000) distributed a questionnaire to adults with burn injuries and 48% reported dissatisfaction with the look of the garment, especially color. These barriers made the client feel self-conscious which contributed to decreased amount of garment wear. Adherence to pressure garments is strongly related to the positive communication and collaboration between members of the health team and occupational therapists and their patients (Stewart et al., 2000).

Other preparatory techniques that occupational therapist may use while treating clients with burn injury include a more manual physical aspect of rehabilitation. Therapists reported utilizing interventions such as: ROM in a pain-free range, gentle stretches, resistance exercise, and joint mobilization for treatment (Holavanahalli et al., 2011). Passive ROM is utilized to elongate the tissue, prevent contractures, and help maintain a patient's ROM when they do not actively move. Active ROM is utilized to aid in reduction of edema, prevent muscle atrophy and contractures, and maintain a client's ROM. Active ROM is less painful than passive ROM and is a more adequate assessment of a client's functional level (Whitehead & Serghiou, 2009). Active assistive ROM exercises, terminal stretching, and resistance training are recommended to maintain or

increase joint ROM (Holavanahalli et al., 2011). For patients with burn injuries having limited movement and limited exercise can contribute to decreased ROM. It also leads to increased muscle and joint contractures, and a diminished quality of life (de Lateur et al., 2007).

Due to excessive bed rest and inactivity in acute care clients require strength and endurance training which is an essential treatment technique. However, this is often overlooked in the overall care of clients with burn injuries (Holavanahalli et al., 2011). By emphasizing the participation of clients with burn injuries in routine exercise it can increase to their ability notice health-related benefits. These health-related benefits may include: increased stamina, flexibility, strength, balance, and release of endorphins improving feelings of well-being and decreasing anxiety and depression (de Lateur et al., 2007).

Despite the emphasis of exercise and ROM as preparatory techniques, they can also be used in a more purposeful manner. Melchert-McKearnan et al. (2000) conducted a study comparing purposeful activity versus rote exercises between two participant groups. The researchers found that therapy outcomes were more meaningful and significantly increased with the use of purposeful activity.

Purposeful activities such as video games provide intervention that is goal-oriented for patients with burn injuries. Specifically, the Nintendo Wii™ has been found to provide patients with slightly more enjoyment, which can enhance goal achievement, adherence, and progress throughout treatment (Yohannan et al., 2012). Interactive video games have many enjoyable aspects that may help motivate the participation of patients

in therapy (Parry et al., 2012). Likewise, motivation is necessary in order to have enjoyment and success in therapy (Melchert-McKearnan et al., 2000).

Fung et al. (2010) suggested that a client could become motivated to engage in therapy by improving their performance with different games and increasing their social interactions with others. The researchers results indicated that the tested Nintendo Wii™ games proved to be useful in functional upper extremity movements, cognitive retraining, dynamic standing balance, and occupation-based skills, such as driving and cooking. Occupational therapists believed that patients with traumatic brain injury and burn injury would benefit the most (Fung et al., 2010).

Parry et al. (2012) used Nintendo Wii™ as a purposeful treatment technique to encourage ROM. The researchers found that maximal ROM was achieved while playing interactive video games versus preparatory passive and active ROM exercises. clients recovering from burns may benefit from the use of interactive video games by facilitating range of motion and thus helping to prevent joint contractures from scar tissue (Parry et al., 2012). Also, video games can be used as a tool to distract patients from pain while performing range of motion exercises (Fung et al., 2010). Yohannan et al. (2012) indicate that the use of Wii™ as an intervention over a short period of time helped to improve pain tolerance. The occupational therapist and other team members should ensure that clients with burn injuries have adequate pain management to optimize motion during therapy and allow functional activity to occur (Simons et al., 2003). Interactive video games provide distraction from burn injury pain due to the enjoyment each client receives from engagement in self-selected games pertaining to their personal interests (Parry et al., 2012).

Patients can be motivated to participate in therapy due to the enjoyable nature and distractions the games provide (Fung et al., 2010). To illustrate, Fung et al. (2010) emphasized that a large amount of occupational therapists, experienced in treating burn injuries, approve the use of Nintendo Wii™ in a rehab setting because it is safe and has therapeutic potential. It is indicated that Nintendo Wii™ can be used as a purposeful treatment technique during all stages of burn rehabilitation and should be explored to potentially help client's progress towards independence (Yohannan et al., 2012).

A person's ability to participate in occupations can be evaluated, improved, or maintained through the use of purposeful and meaningful activities (Melchert-McKearnan, 2000). According to the current literature, utilizing purposeful activities during treatment proposes several benefits for patients with burn injuries. In understanding the effectiveness of using purposeful activities with this population, it opens the door to implementing client-centered treatment. Occupational therapy treatment should have a focus on client occupational interests, therefore, emphasizing the need for occupation-based intervention.

Summary

After reviewing the literature, there is a lack evidence to support the use of occupation-based intervention for adults with burn injuries. Current burn rehabilitation focuses primarily on the use of preparatory and purposeful techniques. Both forms of treatment are important throughout the rehabilitation process. However, rehabilitation for clients with burn injuries is a life long process and occupations should be considered to improve compliance with treatment and overall quality of life. The following chapters

will present the development of an occupation-based protocol designed for occupational therapist to consider in the treatment of adults with burn injuries.

CHAPTER III

METHODOLOGY

The development of the occupation-based protocol for the treatment of adults with burn injuries began with an extensive literature review. The purpose of the literature review was to gather information to support the development of the protocol. Through this literature the authors found a significant lag in information related to occupation-based interventions for the treatment of adults with burn injuries (Bracciano, 2011; Richard et al., 2008; Rogers, 2007). Since there was a lack of information on the topic, the authors split the research into two categories: occupation-based treatment and current procedures for the rehabilitation of burn injuries.

The authors sought out to find peer-reviewed journal articles related to both topics, occupation-based interventions and current procedures for the rehabilitation of burn injuries. Discovering the effectiveness of occupation-based interventions in the literature was supportive of the occupation-based approach of the protocol. In relation to current burn injury rehabilitation, the authors consistently found primarily preparatory and purposeful techniques supported. These results were included in the development of the protocol.

The authors conducted searches for literature using online databases available through the Harley E. French Library on the University of North Dakota website. Databases searched included: PubMed, CINAHL, and Google Scholar. For information specific to occupational therapy, the authors utilized their membership to the American

Occupational Therapy Association to search the American Journal of Occupational Therapy archives. For similar information, other occupational therapy databases were used such as OT Search and OTseeker.com.

Keywords and phrases entered into the databases to seek the appropriate results included: “occupational therapy and burn injuries,” “occupation-based interventions,” “occupation-based interventions and adults with physical disabilities,” “treatment for burn injuries,” “adults with burn injuries,” “burn protocols,” “occupation-based interventions and burn injuries,” “occupational therapy and occupation-based interventions,” “preparatory interventions and burn injuries,” and “purposeful interventions and burn injuries.” The authors selected twenty articles based on the inclusion criteria for the occupation-based protocol, specifically in relation to preparatory, purposeful, and occupation-based interventions for adults with burn injuries.

Each author summarized ten of the twenty articles. The summary began with the American Psychological Association (APA) citation (6th ed.) for organizational purposes. The rest of the summary included the level of evidence, purpose of the study or piece of literature, design, sample size and characteristics, measurements tools utilized, the results, and relevance to the authors’ topic. The summaries were then categorized into two groups, occupation-based treatment and current procedures for the rehabilitation of burn injuries.

Four of the articles fit into the category of occupation-based treatment, while sixteen fit into the category of current procedures for burn injuries. The authors analyzed the articles and article summaries to gain an understanding of the concepts in the literature. They compiled the main ideas from the articles into an extensive review of

literature. Based on the literature review, the authors discovered and concurred with the problem that Richard et al. explained in his research (2008). This product was developed to address the lack of literature regarding occupation-based interventions for occupational therapy treatment of burn injuries in the adult population. Information gathered was used to guide interventions developed and published throughout the protocol.

In addition to the literature review to guide the development of the product, the authors considered the concepts the Occupational Adaptation (OA) model (Schkade & Schultz, 1992; Schultz & Schkade, 1992; Schkade & McClung, 2001). The concepts are evident throughout the entire protocol beginning with the initial occupational therapy evaluation, intervention planning, intervention implementation, and ending with the re-evaluations. The authors focused on the internal adaptation process and relative mastery of occupations within the protocol. In order to develop the evaluation process within the protocol, the authors researched a variety of evaluation tools.

There was only one evaluation tool specific to the OA model, the Relative Mastery Measurement Scale (RMMS) (George, Schkade, & Ishee, 2004). Due to this, the authors included the RMMS and were required to look at evaluation tools from other occupation-based models. They chose the Canadian Occupational Performance Measure (Law et al., 2005) because of its compatibility with the OA model. Other evaluation tools chosen are the Interest Checklist (Matsutsuyu, 1969), and the Functional Independence Measure (UDSMR, 1997). The aforementioned evaluation tools are explained in detail in Chapter IV.

The authors referred to the literature to develop detailed descriptions for the intervention planning and implementation steps of the treatment process. Collaboration

occurred to create occupation-based examples that can be used to address traditional burn rehabilitation interventions by occupational therapists. After all steps of the protocol were created, the authors developed a case study as an example to illustrate the product's usage. The case study was developed through the knowledge gained from the literature review and subsequent occupational therapy textbooks. Information from the case study was considered through all steps of the protocol development.

Overall, the authors of this scholarly project utilized a collaborative process in its development. The methodology used for creating this protocol included, a review of literature, determination of the purpose, consideration of an occupation-based model, and development of a case study to illustrate the protocol's usage. The authors' methodology will be considered throughout the next chapter. Chapter IV will present the product, *An Occupation-Based Protocol for Treatment of Adults with Burn Injuries*.

CHAPTER IV

PRODUCT

This protocol has been developed for the purpose of guiding occupational therapists towards incorporating occupation-based interventions throughout the rehabilitation process for adults with burn injury. The emergent and acute phases provide an important role for the occupational therapist and should not be ignored. However, the emphasis of these phases, understandably, is more on client survival versus the return to occupational roles. Therefore, this protocol is designed to address the rehabilitative phase of burn management.

Current rehabilitation for adults with burn injuries has a strong emphasis on the utilization of preparatory and purposeful interventions. Due to the history behind burn rehabilitation, it is important for occupational therapists to continue to include these types of intervention when treating clients. However, rehabilitation for patients with burn injuries is a life-long process and occupation-based interventions should be considered to provide meaningful treatment and improve overall quality of life.

It is evident that there is a significant lag in the utilization of occupation-based interventions for this population (Bracciano, 2011; Richard et al., 2008). This product, however, introduces the application of occupation-based activities in treatment to enhance the occupational response of the client. Occupational therapists will be provided with inspiring ways to create a client-centered atmosphere and a refreshing alternative to the traditional burn rehabilitation process. The following presents the format for which an

occupational therapist will be guided through the evaluation and intervention process as the facilitator of treatment.

The title of this protocol is: *An Occupation-Based Protocol for Treatment of Adults with Burn Injuries*. The guidelines provided within this protocol allow an occupational therapist to be flexible in how they address the use of basic burn rehabilitation treatment with their client. This protocol has a semi-structured format, which emphasizes the application of occupation-based interventions. With this format, an occupational therapist can develop treatment sessions based on the occupational wants and needs of each individual client. Based on the diversity amongst burn injury cases, treatment procedures may vary depending on the clientele. It is imperative that the occupational therapist uses his or hers own clinical judgment and reasoning and alter use of the protocol to provide client-centered treatment.

There are several preparatory and purposeful interventions addressed in this protocol because they are vital in the burn rehabilitation process. However, throughout the rehabilitation phase, the occupational therapist's overall goal is to facilitate the client's return to his or her previous level of occupational performance (Pessina & Orroth, 2008). This protocol follows closely with the traditional treatment for burn injury yet accentuates the application of an occupational focus during inpatient burn rehabilitation. The occupational therapist is guided sequentially through the treatment process when utilizing this protocol. The occupational therapy process of service delivery includes the initial evaluation, intervention plan development, implementation of interventions, and re-evaluation/outcomes (American Occupational Therapy Association [AOTA], 2008).

The initial evaluation provides the occupational therapist with an opportunity to gather information about the client's occupational roles and environment in a variety of ways. This protocol acknowledges several options for gaining background information on the client, understanding their wants, needs, and interests, and building therapeutic rapport. Performing a chart review and communicating with previous therapists from the emergent and acute phases of the client's burn rehabilitation, helps the occupational therapist to obtain foundational knowledge of the client's case.

When reviewing chart information, the occupational therapist should look at past medical history, evaluation results related to cognitive, sensorimotor, and psychological status, Functional Independence Measure (FIM) TM scores, and the physical abilities of the client. Insight into treatment provided and goals that have been set during prior rehabilitation phases can be obtained through communication with previous therapists. Further information can be gathered directly from the client and/or his or her caregiver or family.

The occupational therapist is first able to meet one-on-one with the client during an interview. This is a prime opportunity for building rapport and developing a therapeutic relationship with the client. Interview questions should be focused specifically on the client, his or her roles, primary areas of concern, tasks typically performed, and environments for which they carry out their roles. After the client interview has occurred, the occupational therapist may still have unanswered questions. In that case, the client's caregiver or family can also be interviewed in order to gain more clarifying information.

For the occupational therapist to collect more objective data pertaining to the client, observations and formal assessments can be performed. The client's occupational performance can be analyzed directly by the occupational therapist through observation. The energy level of the client and his or her capacities and abilities should be observed by the therapist, because these impact treatment planning. The authors address the use of observation during the initial assessment; however, note that observations should be made throughout the entire treatment process.

There are three main evaluation tools that should be considered for administration by the occupational therapist during the initial evaluation. The three formal evaluation tools recommended in this protocol are The Canadian Occupational Performance Measure (Law et al., 2005), The Interest Checklist (Matsutsuyu, 1969), and the FIM™ (UDSMR, 1997). The authors chose these evaluation tools because they both have an occupational emphasis and allow the adult client to express his or her perception of relative mastery and occupational challenges. Evaluations included in this protocol will be elaborated on in more detail later in this chapter.

The next part of the occupational therapy process involves treatment plan development. In order for a client-centered and occupation-based treatment plan to be developed, the occupational therapist needs to analyze evaluation data, collaborate with the client, and establish goals. This part of the treatment process allows the occupational therapist the opportunity to become more of a facilitator, while the client becomes the agent of change. The occupational therapist should encourage the client to increase responsibility for their care, starting with helping to establish meaningful goals (Pessina & Orroth, 2008).

Findings from the initial evaluation should be reviewed with the client to gain a mutual understanding of the client's status prior to establishing treatment goals. The findings may include such things as the client's areas of strength and weakness (AOTA, 2008), current level of function, primary roles, and occupations of interest and importance. Once a mutual understanding has been established between the occupational therapist and the client, goals can be collaboratively developed. Goals should be focused on the clients' identified areas of dissatisfaction regarding occupational performance and his or her occupations of primary interest and importance. Finally, goals need to be prioritized for order of achievement prior to discharge from inpatient rehabilitation.

After the intervention plan is developed, the occupational therapist can begin implementing interventions into treatment. In order to maintain occupation-based practice, occupations should be used as means and as an end. With occupations as means, the occupations identified by the client are utilized to reach the outcome of therapy. With occupations as an end, the occupations identified by the client are utilized as the end goal for therapy. The occupational therapist utilizes his or her clinical reasoning skills to determine burn rehabilitation interventions and collaborates with the client to relate back to his or her occupational goals.

Traditional burn rehabilitation interventions that the occupational therapist should consider using include: range of motion and stretching, strengthening, scar massage, pressure garments, desensitization, endurance training, coordination and balance development, activities of daily living (ADLs), and instrumental activities of daily living (IADLs). This protocol addresses each of these interventions in detail to help guide the occupational therapist. Handouts related to providing traditional treatment are included in

the protocol. These handouts can be used as an educational resource for the occupational therapist and/or given to the client to reference when independently engaging in therapeutic activities. Also, within the protocol the occupational therapist is provided with a variety of ways to use the tradition interventions with an occupation-based emphasis.

The final part of the occupational therapy treatment process is re-evaluation of the client. Re-evaluation occurs prior to discharge of the client, in order to determine his or her progress and goal achievement. If possible this part of the treatment process should occur every two weeks in order to ensure the best care possible is provided. Re-evaluation will allow the client to self-reflect and determine new areas for change.

There are three main evaluation tools that may be considered to be administered by the occupational therapist for re-evaluation of the client. The three formal evaluation tools included in this protocol are the Relative Mastery Measurement Scale (George, Schkade, & Ishee, 2004) the FIM™ (UDSMR, 1997) and the Canadian Occupational Performance Measure (Law et al., 2005). The authors chose these tools because they are focused on the client's level of function and perception of his or her ability to adapt to occupational challenges. Evaluations included in this protocol will be elaborated on in more detail later in this chapter.

This protocol provides intervention ideas for including the aforementioned preparatory activities in an occupation-based manner. In order to gain a better understanding of how to carry out the interventions with a specific client, a case study is presented. This case study is used to demonstrate how to apply the occupation-based protocol to the rehabilitation process when treating an adult with a burn injury.

Occupational therapists will be guided through the treatment process involving: initial assessment, treatment plan development, intervention implementation, and re-evaluation.

For the purposes of this protocol the model of Occupational Adaptation (OA) (Schkade & Schultz, 1992; Schultz & Schkade, 1992; Schkade & McClung, 2001) was used to guide the occupational therapy treatment process. This model focuses holistically on the person, his or her occupational environment, and the interaction between the two (Cole & Tufano, 2008). The language and concepts of OA are consistently implemented throughout the protocol. Occupations can be used as means and as an end; the client and occupational therapist gain an understanding of his or her adaptive capacity and relative mastery towards occupational challenges.

The occupational therapist should encourage clients to take an active role with decision-making to increase the client's control over their health, as well as engagement and adherence with treatment (Stewart, Bhagwanjee, Mbakaza, & Binase, 2000). The client's engagement in meaningful occupational activities is facilitated by the occupational therapist while the client is considered the agent of change (Cole & Tufano, 2008). OA can be used to guide treatment across the lifespan, especially after a traumatic event has occurred.

There is one specific evaluation tool that can be used with the OA model, The Relative Mastery Measurement Scale (George, Schkade, & Ishee, 2004). This along with others suggested throughout the protocol, allow the client an opportunity to understand his or her press for mastery with occupational challenges. The following pages explain the evaluation and assessment process in more detail.

Evaluation

Occupation-based activities are introduced to the client particularly in the rehabilitative phase of burn treatment. The concept of occupation-based practice will need to be considered throughout all aspects of intervention beginning with the evaluation process (Hocking, 2001). The occupational therapist should start the evaluation with a detailed chart review and client interview in order to establish an occupational profile of the client with a burn injury. It is important to note that the occupational therapist will need to consider the physician's wishes for rehabilitation when evaluating and treatment planning for the client.

The authors have identified four assessment tools to include in this protocol in order to gain a full understanding of the clients abilities, interests, and progress, the Canadian Occupational Performance Measure (COPM) (Law et al., 2005), Interest Checklist (Matsutsuyu, 1969), Relative Mastery Measurement Scale (RMMS) (George, Schkade, & Ishee, 2004), and the Functional Independence Measure (FIM) TM (UDSMR, 1997). These assessments have good reliability and validity and enhance the evaluation process. The core concepts of the Occupational Adaptation (OA) model will also be addressed through the formal and informal evaluation. The evaluation process under OA begins with determining the occupational environment and the occupational roles (Schkade & Schultz, 1992; Schultz & Schkade, 1992; Schkade & McClung, 2001; Schultz, 2009). The COPM and the Interest Checklist were chosen to guide the initial evaluation process. These assessments provide a baseline for intervention planning and initial goals during the rehabilitative phase of burn treatment.

Evaluation will continue throughout the entire protocol lead by both the client and the occupational therapist. Every two weeks, re-evaluation will occur. The RMMS will be addressed at this point as well as at discharge. In addition to the RMMS, the FIM™ will be used in order to identify functional gains during the rehabilitation program. This tool will help the therapist aid the client in identifying areas of growth throughout the process. After the re-evaluation, the therapist and the client will decide whether to keep existing goals or to create new ones.

While the client participates in self-reflection, the occupational therapist will also perform self-reflection on his or her treatment implementation prior to discharge of each client. The therapist will keep a log of the interventions used throughout treatment to help reflect on the amount of occupation-based interventions used with the client with a burn injury. They will list the interventions provided and record whether the intervention was preparatory, purposeful, or occupation-based. The occupational therapist will then reflect on why he or she was unable to provide occupation-based interventions and develop ways to overcome these barriers. By doing a self-reflection, the occupational therapist will be able to enhance practice with future clients.

The Canadian Occupational Performance Measure (COPM)

The Canadian Occupational Performance Measure (COPM) is a standardized, client-centered, semi-structured interview. It is designed to measure both the client's perceptions of occupational progress and performance overtime (Law et al., 2005; Henry & Kramer, 2009). The COPM has three distinct sections that help identify problems in occupational performance: self-care, productivity, and leisure (Law et al., 2005; Baptiste,

2008). This assessment tool is client-centered and designed to apply equally to all types of clients.

The COPM was designed under the Canadian Model of Occupational Performance (CMOP) (Law et al., 2005; Baptiste, 2008). It was chosen for this protocol because of the self-report aspects of satisfaction and performance in occupations. It will help the occupational therapist gain a better understanding of which occupations the client is dissatisfied with regarding their performance. The occupational therapist will be able to utilize the information learned from this assessment to direct intervention planning in the areas of self-care, productivity and leisure.

Although the COPM was designed for the CMOP, it fits under the concepts of OA nicely. In OA there are three broad types of occupational environments, self-care, work, play/leisure (Schkade & Schultz, 1992; Schultz, 2009). Occupational environments are the contexts in which occupations occur. The occupational environments of self-care and leisure match up to the sections in the COPM. Work, on the other hand, fits into the productivity section of the COPM. Productivity is broken down into work and education (Baptiste, 2008).

The COPM will be used as an outcome measure. The clients will be reassessed at discharge to determine the changes in perception and occupational performance that occur after the initial evaluation. This assessment tool will be helpful with clients with burn injury. The occupational therapist will gain an understanding of what occupations are of importance and be able to use them to guide intervention.

The Interest Checklist

The Interest Checklist is an 80 item self-report checklist of five different categories. The five categories include activities of daily living, manual skills, cultural/education, physical sports, and social recreation. This checklist allows the occupational therapist to gather information about occupations of interest over time, past present, and future (Matsutsuyu, 1997; Fasoli, 2008). The checklist allows the client to clarify different types of interests within these categories on a 3-point rating scale. The client chooses whether the interest is casual, strong, or of no interest (Henry & Kramer, 2009; Connolly, Law, & MacGuire, 2005).

According to Klyczek, Bauer-Yox, and Fielder (1997), the Interest Checklist should be used with caution because the list does not allow for prioritization of the different occupations. The tool, however, provides use for the therapist in guiding intervention through the identified meaningful activities. This is exactly how it will be used in the protocol.

This evaluation tool will help the client and the therapist identify occupations that can be used during intervention. It determines occupations that can be used both by occupations as means and occupations as an end.

Relative Mastery Measurement Scale

The Relative Mastery Measurement Scale (RMMS) was developed to measure the central construct of occupational adaptation (George, Schkade, & Ishee, 2004). The RMMS is the only assessment specific to the model of OA. The client evaluates his or her internal responses based on effectiveness, efficiency, and satisfaction with challenges

in occupations. The RMMS asks the client to identify an occupation, then rate his or her performance on a series of 12 statements.

Including the RMMS in the rehabilitative phase of burn treatment will allow the client to take control of what occupations will be addressed throughout treatment. It will also guide the interventions to cover specific needs of the client. By allowing the client to take control of the intervention process and the occupations within it, the process becomes client-centered and occupation-based. Clients are viewed by the authors as able to fully participate in the self-reflection process during the rehabilitation phases; however, are often too medically ill during the acute phase.

In this protocol, the RMMS will be used for re-evaluation and discharge planning. Re-evaluation will occur every two weeks in order to ensure client-centered care and occupation based treatment. The RMMS will also occur at discharge for the occupation therapist to effectively communicate what occupations the client would like to address in outpatient therapy with the new occupational therapist.

Functional Independence Measure

The Functional Independence Measure (FIM)™ is an observational tool that rates the client's performance on 18 items. The scale rates the level of independence in activities of daily living on a seven point scale with seven meaning total independence (UDSMR, 1997; Esselman, Ptacek, Kowalske, Cromes, deLateur, & Engrav, 2001; Fasoli, 2008).

For this protocol, the FIM™ will be utilized to measure functional independence in clients with burn injuries. The FIM™ will be done initially, at each re-evaluation, and at discharge. This tool will provide objective information about the functional status of

each client. The client and the occupational therapist will then consider the result while setting goals and choosing interventions.

Clinical reasoning

The COPM, Interest Checklist, RMMS, and FIM™ are suggested evaluation and assessment tools. These tools set the stage for occupation-based interventions and treatment for adults with burn injuries during the rehabilitative phase of burn care. The authors of this protocol are aware that every client will be different. Occupational therapists should be advised to utilize their clinical judgment in choosing evaluation tools that best fit their clients; therapists may select additional or substitute other valid and reliable assessments. By utilizing good clinical judgment, the occupational therapist will ensure the best practice for this population.

CHAPTER V

SUMMARY

An abundance of literature supports the role of occupational therapy in the treatment of individuals with burn injuries. Over the years, the focus of burn rehabilitation has not strayed far from traditional treatment protocols. Although the use of preparatory and purposeful interventions is strongly emphasized, there is limited evidence representing the use of occupation-based interventions during burn rehabilitation. Due to these factors, it is paramount that the client's occupational interests be incorporated into the occupational therapy treatment process. This purpose is presented through the protocol included in this scholarly project.

This occupation-based protocol was developed for adults with burn injuries, specifically those in the inpatient rehabilitative phase of treatment. The occupational therapist is provided with inspiring ways to create a client-centered atmosphere and a refreshing alternative to the traditional burn rehabilitation process. Within this protocol, the treatment process is stimulated with an occupational focus that is intended to be meaningful for each client. The occupational therapist may follow the product guidelines to implement *An Occupation-Based Protocol for Treatment of Adults with Burn Injuries*.

Despite the many benefits of this protocol, there are some co-occurring limitations. For example, adults are the focal population for this protocol which influenced the treatment process developed by the authors. Therefore, this protocol was

not intended for the occupational therapist to use with children or adolescents. Another limitation is that there is an insufficient amount of evaluation tools specific to the Occupational Adaptation Model. As a result, the authors incorporated evaluation tools from other occupation-based models that supported the purpose of the protocol. In addition, this protocol has not been piloted by an occupational therapist with the intended population or phase of treatment. The protocol therefore has a lack of efficacy which may impact implementation and requires a need for future research. Lastly, the protocol focuses on the physical disabilities aspect of burn rehabilitation, therefore, does not cover the psychosocial of the injury. It is the authors' belief that the psychosocial health of the clients will be assisted through the use of meaningful and motivating occupations. Occupational therapists who utilize this protocol are cautioned to use their clinical reasoning to inform the process.

Based on the evidence, this protocol has the potential to fill the gaps that are present in the literature. In addition, it will provide the occupational therapist with an alternative method to treating adults with burn injuries. In order to promote this potential, existence of the protocol should become known to professionals in the realm of burn injuries. The authors suggest that this protocol be used in a pilot study, in order to gain evidence pertaining to its effectiveness. Poster presentations will be considered for promotion of the protocol. Also, the American Burn Association may be contacted for possible publication to aid in further promotion of this protocol. All in all, clinical research needs to be conducted to provide evidence supporting the use of occupation-based interventions to guide rehabilitation of adults with burn injuries.

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Occupation-Based Burn Rehabilitation


Treatment Protocol for Adults with Burn Injuries



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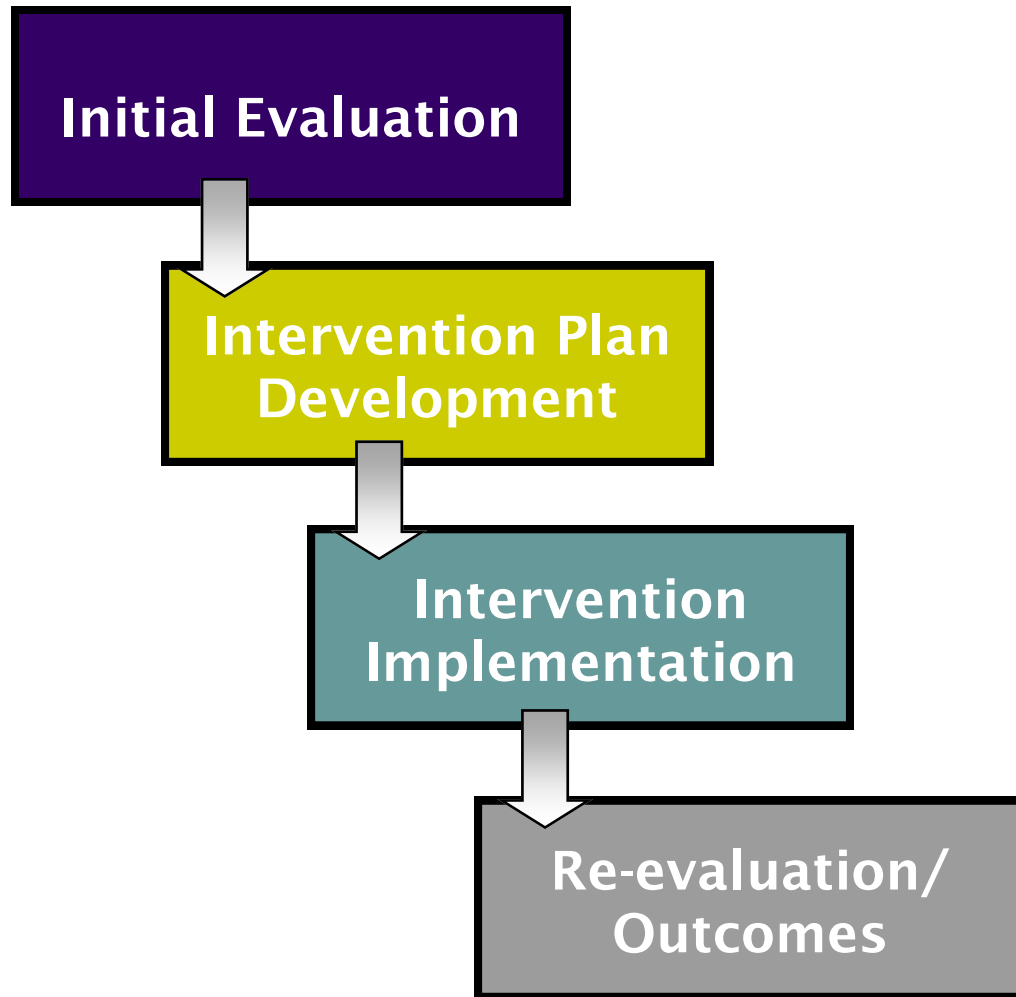


May 2013

This protocol has been developed to guide occupational therapists through the burn rehabilitation process using occupation-based treatment. When using this protocol the occupational therapist should focus their treatment on the client population of adults with burn injuries. The layout of this protocol is based in accordance with the rehabilitative phase of treatment, specifically with inpatient rehabilitation. Based on the Occupational Adaptation Model (Schkade & Schultz, 1992; Schultz & Schkade, 1992; Schkade & McClung, 2001), this protocol will provide occupational therapists with inspiring ways to create a client-centered atmosphere and a refreshing alternative to the traditional burn rehabilitation process.

Occupational Therapy Process of Service Delivery

(AOTA, 2008)





Initial Evaluation

Initial Evaluation

The occupational therapist will gather information about the client's occupational roles and occupational environments through the following methods:

- Chart review from the emergent and acute phases of burn rehabilitation
- Communication with the previous occupational therapist
- Client interview
- Family/caregiver interview
- Observations of the client and their occupational performance
- Formal Evaluation Tools

The occupational therapist should consider the all information gathered in the aforementioned ways and create an **occupational profile**.

Chart Review

The occupational therapist may look for :

- Past medical history
- Evaluation results pertaining to the client's cognitive, sensorimotor, and psychosocial status (if performed)
- Functional Independence Measure scores (if performed)
- Physical abilities (e.g. manual muscle tests, goniometric measurements)

Communication with OT

The occupational therapist may want to contact the client's previous therapist to gain information regarding :

- Interventions used during acute treatment
- Previous goals that were set for the client

Client Interview

The occupational therapist may use the client interview as an opportunity to build rapport.

Interview questions to consider :

- What kind of roles did you have prior to your injury?
- What roles are of primary concern currently?
- What kinds of tasks would normally perform within these roles?
- Where would you perform these roles?



Image from Microsoft Clipart, 2007

Family/Caregiver Interview

The occupational therapist may communicate with family members and/or caregivers to gain more insight pertaining to the client. Any unanswered questions from the client interview may be addressed with family members and/or caregivers.

Note: During the interviews with the client and the family, the occupational therapist needs to determine the primary concern with the burn rehabilitation.

Client Observation

The occupational therapist may use skilled observations to gain an understanding of the client and his or her occupational performance.

Things to consider :

- Energy level of the client
- Skin integrity and wound healing
- Participation in occupations

Note: Observations should be made throughout the treatment process.

Formal Evaluation Tools

The occupational therapist may choose to administer the following evaluation tools during the initial evaluation:

The Canadian Occupational Performance Measure

- Standardized, semi-structured, client-centered interview.
- This assessment is recommended to gain a better understanding of what occupations the client is unsatisfied with and help guide the intervention planning.
- Should be completed during re-evaluation at discharge to determine changes in perception of the client's occupations.

(Law et al., 2005)

The Interest Checklist

- Self-report checklist of a variety of activities within five categories: activities of daily living, manual skills, cultural and education, physical sports, and social recreation.
- This checklist helps determine the occupations of interest for the client and will help guide the intervention planning.

(Matsutsuyu, 1969)

Functional Independence Measure

- Observation tool that rates clients performance on 18 items, covering independence in: self-care, sphincter control, mobility, locomotion, communication, and social cognition.
- This tool will provide objective information about the functional status of each client.
- Should be completed during re-evaluation at discharge to assist the client in understanding their performance level for transitioning to their home environment and out-patient occupational therapy treatment.

(UDSMR, 1997)



Intervention Plan Development

Intervention Plan Development

The occupational therapist will need to consider the following things in order to develop a client-centered and occupation-based intervention plan:

- Analyze evaluation data
- Collaborate with the client
- Establish goals

Analyze Evaluation Data

The occupational therapist will review data gathered through chart review, communication with previous occupational therapists, interviews with client and the client's family/caregiver, observation, and formal assessments. From the data, the occupational therapist will analyze pertinent information that impacts the treatment provided.

Note: Due to the diversity amongst clients being treated, data results will vary treatment plan development. Occupational therapists should be aware of this in order to effectively administer client-centered burn rehabilitation.

Collaborate With The Client

It is important that both the occupational therapist and the client work together during treatment planning. The client should be considered as the agent of change, while the occupational therapist is considered the facilitator.

This is a time where the occupational therapist may review the findings of the initial assessment with the client to gain a mutual understanding of the client's status.

- Review areas of strength and weakness
- Current level of function
- Primary roles
- Occupations of interest/importance

Note: The family/caregiver may be included during collaboration, as appropriate.



Image from Microsoft Clipart, 2007

Establish Goals

The occupational therapist and the client collaborate to determine long term and short term goals.

Considerations for goals development :

- Client identified areas of dissatisfaction regarding occupational performance
- Occupations of primary focus
- Prioritization of goal areas

Note: Occupational therapists should consider utilizing the RUMBA format when developing client goals.



RUMBA

Relevant
Understandable
Measurable
Behavioral
Achievable



Intervention Implementation

Intervention Implementation

After the treatment plan is developed through collaboration with the client and occupational therapist, the goals established will guide the intervention process. In order to maintain occupation-based practice, occupations should be used as-means and as-end (Gray, 1998; Price & Miner, 2007) .

Occupations-as-means

The occupations identified by the client are utilized to reach the outcome of therapy. All tasks done in therapy will aid in skill development.

Example

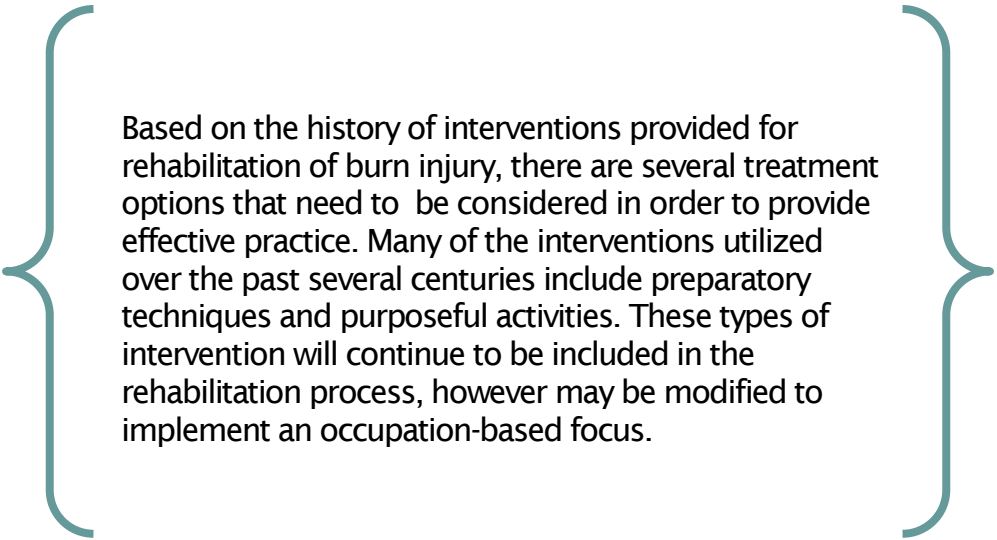
Sarah identified knitting as a leisure activity she enjoys doing, the occupational therapist then has the client knit during the therapy session to gain fine-motor coordination skills.

Occupations-as-end

The occupations identified by the client are utilized as the end goal for therapy. All tasks done in therapy will lead to engagement of said occupation. It becomes important to communicating the process and end goal with the client.

Example

Ben identified golfing as a leisure activity he enjoys doing, the occupational therapist then breaks down and grades tasks pertaining to golfing, such as, ROM/ hand strength and works on these skills during therapy sessions to allow Ben to golf post discharge from occupational therapy.



Based on the history of interventions provided for rehabilitation of burn injury, there are several treatment options that need to be considered in order to provide effective practice. Many of the interventions utilized over the past several centuries include preparatory techniques and purposeful activities. These types of intervention will continue to be included in the rehabilitation process, however may be modified to implement an occupation-based focus.



The occupational therapist may consider using the following preparatory and purposeful interventions to provide rehabilitative treatment for client's with burn injuries :

- 
- Activities of Daily Living/
Instrumental Activities of Daily Living
 - Range-of-Motion & Stretching
 - Strengthening
 - Scar Massage
 - Pressure Garments
 - Desensitization
 - Endurance Training
 - Coordination/Balance Development

Activities of Daily Living/ Instrumental Activities of Daily Living

The occupational therapist may incorporate activities of daily living and/or instrumental activities of daily living into treatment session to increase the client's time out of bed and promote engagement in functional tasks :

- ◆ ◆ ◆ ◆ ◆ ◆ Engage the client in functional tasks related to self care and at-home activities, such as bathing, toileting, eating, dressing, grooming, and homemaking skills.
- ◆ ◆ ◆ ◆ ◆ ◆ Educate the client on the possibility for modifications in their home environment prior to discharge from inpatient rehabilitation treatment.
- ◆ ◆ ◆ ◆ ◆ ◆ Educate the client on the possibility for assistive technology to increase independence if remediation was unable to occur during inpatient rehabilitation treatment. Provide assistive technology as a last resort option.

Value of Occupation-Based Interventions
It is common for occupational therapists to utilize activities of daily living and instrumental activities of daily living as occupation-based interventions (Gray, 1998). Even though tasks performed during self-cares are important for returning to a more independent lifestyle, they should not be the only occupations considered for interventions (Gray, 1998). Each client will be unique in their occupational interests and these too should be implemented into treatment.

Range-of-Motion & Stretching

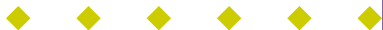
The occupational therapist may utilize this intervention technique to aid in contracture prevention and increases in joint range-of-motion (ROM).



Daily stretching should occur frequently throughout the day due to increased collagen synthesis at this phase.



Once scar is matured the collagen synthesis slows and is followed up by massage with a non-water based cream to prevent skin tears prior to ROM and stretching.



Stretch to the point of blanching or where the skin becomes pale and hold this for a few seconds. The client should feel tension but no pain.

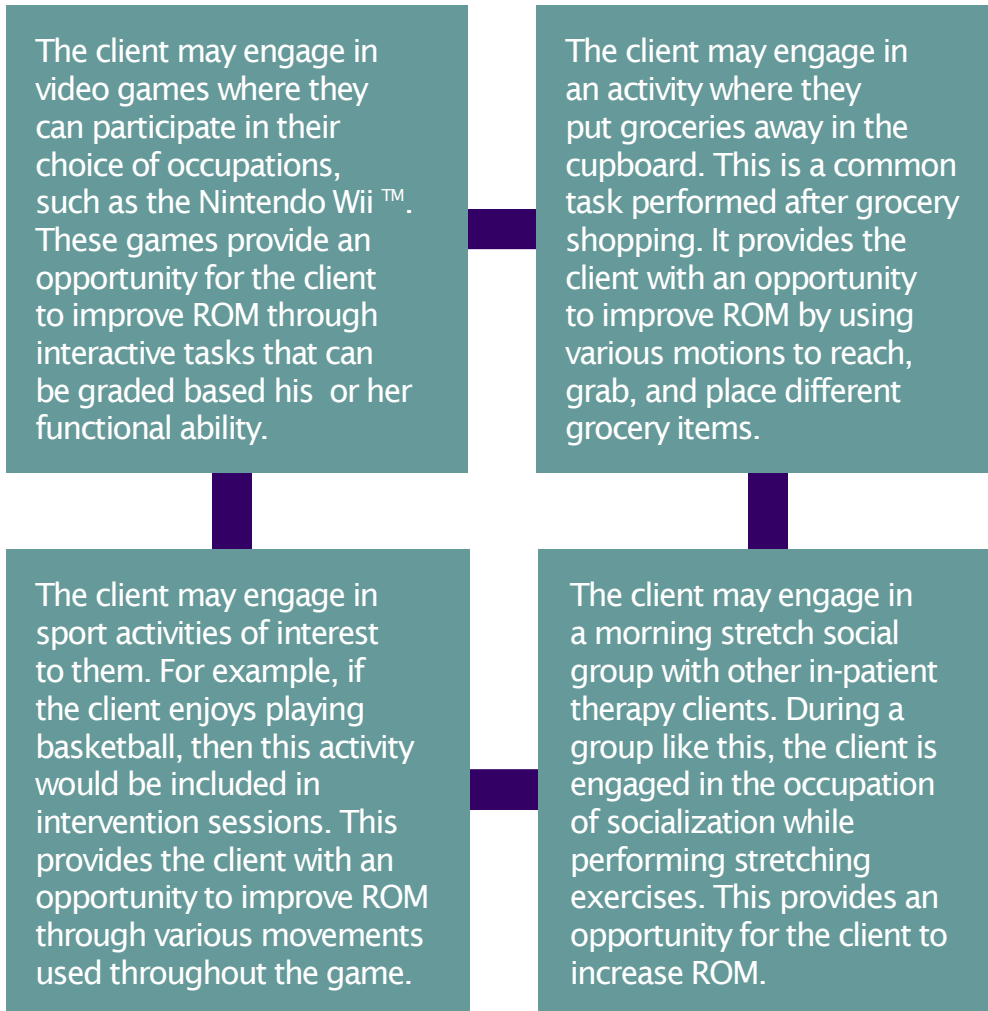
Note : The occupational therapist should be cautious not to over-stretch the client, because this can cause joint stiffness, due to tissue tear and edema.

(Pessina & Orroth, 2008)



Occupational-Based Alternative

When utilizing the preparatory interventions related to range-of-motion and stretching, the occupational therapist should consider combining these with occupation-based activities.



Strengthening

The occupational therapist may utilize resistive exercise and graded functional activities frequently in the treatment process to aid the client with improving their strength.

Teach clients an independent exercise program.

- The occupational therapist can provide the client with Theraband™ which is a resistive rubber ribbon or tubing that has different levels of tension/resistance.

The occupational therapist should utilize resistance as soon as the client is able to tolerate it and grade the resistance/weight in order to provide progressive strengthening.

- Occupational therapists can add resistance to strengthening by using the following tools/interventions: pulleys, Theraband™, free weights, eccentric exercises, and weight-bearing exercises.

Start slow, begin with moving from sit to stand and progress as the client feels comfortable. Follow the client's internal response to the activity to determine when to move onto the next level.

- The Relative Mastery Measurement Scale may prove to be useful at this point in the process (George, Shkade & Ishee, 2004).

Note : Resistance can be applied even if the clients burn wounds are still open. Also, the occupational therapist should pay special attention to the proximal muscles of the shoulders and hips. The client may have increased weakness in these areas due to decreased activity and immobilization during their acute care treatment.



Occupational-Based Alternative

When utilizing the preparatory interventions related to strengthening, the occupational therapist should consider combining these with occupation-based activities.

The client may engage in an activity where they work with tools, such as wood working. For example, the task includes carrying tools from a toolbox to a work bench. These activities provide an opportunity for the client to use graded weight and size of tools to improve strength.

The client may engage in a cleaning activity related to home management. During this activity the client can wash windows, vacuum, etc. This activity provides an opportunity for the client to work on strengthening through the weight of the limb and repetitive movement.

The client may engage in a gardening activity, such as shoveling soil into a pot or basin to grow a flower or a garden. The weight of the soil on the shovel and the exertion needed to dig and plant a flower provides an opportunity for the client to improve strength.

The client may engage in an activity where they carry bags of groceries. This is a common task performed after grocery shopping. It provides the client with an opportunity to improve strength by using various weights of bags with grocery items.

Scar Massage

The occupational therapist may utilize scar massage to help reduce contractures that develop when burn wounds have progressed into a scar.



Massage scars several times a day using deep pressure, enough to temporarily blanch the scar area.

- The tissue has reached the point of blanching when it has noticeably become pale or turns white.



Massage the scar in several directional patterns: circular (counter clockwise), parallel (up and down), and perpendicular (side-to-side).



If all burned or grafted skin and donor sites are healed, the occupational therapist can apply lotion to the scarred areas prior to massage.

- Lotion can be used to moisten and soften the skin, as well as, reduce friction during massage.
- Attempt to use non-water-based perfume-free lotions.

(Pessina & Orroth, 2008)



Occupational-Based Alternative

When utilizing the preparatory interventions related to scar massage, the occupational therapist should consider combining these with occupation-based activities.

The client may create a self-care routine which includes scar massage and application of non water-based lotions and then carry out the routine daily. This provides the client with an opportunity to incorporate the habit of scar massage into his or her daily lifestyle.

The client may perform scar massage while enjoying a leisure activity, such as watching a movie. The movie can provide the client with a distraction, so that time isn't taken away from daily activities to perform a scar massage routine.

The client may engage in a social group with other in-patient therapy clients. During a group like this, the client is engaged in the occupation of socialization while performing scar massage exercises. This provides an opportunity for the client to manage his or her scars.

The client may develop a scar massage schedule that fits into his or her daily life. Self rewards personal to the client can be incorporated to promote engagement in massage. This activity provides an opportunity for the client to incorporate enjoyable activities to ease the process.

Pressure Garments

The occupational therapist may facilitate the use of pressure garments to aid in scar management and prevention of deformities.

Pressure garments should be custom-fit to the client, in order to ensure they are receiving adequate pressure.

- A pressure garment is considered too small when: it binds or digs into the skin, the fingers or toes become swollen, blue or numb, and it rides up or down with motion.
- A pressure garment is considered too big when: there is bagging or sagging noted, it can easily be pinched away from the skin, and the scar appears larger in one area.
- Pressure garments may cover concave areas (e.g. web spaces in-between fingers or sternoclavicular depression) allowing for limited to no pressure. For this inserts, such as Elastomere™, Otoform™, silicone gel, and/or foam padding should be fitted and applied under the garment.

Instruction and training should be given to the client regarding care and use of their pressure garment(s).

- After introducing and fitting the pressure garment(s) to the client, the occupational therapist should apply the garment initially for 2-hours. In order for the client to build up their tolerance, wearing should be gradually increased by added 2-hour increments until the client reaches 23-24 hours of wear time.
- Once the client can tolerate wearing the garment(s), on a normal basis the pressure garments should be worn by the client 23 hours a day and should only be removed for scar massage and bathing.

Note: The occupational therapist should pay special attention to whether or not the garment is properly fitted on the client. If the garment is not properly fitted, complications may include swelling, increased scarring, and/or abraded areas.

(Pessina & Orroth, 2008)



Occupational-Based Alternative

When utilizing the preparatory interventions related to pressure garments, the occupational therapist should consider combining these with occupation-based activities.

The client may implement a pressure garment wearing schedule into his or her daily routine. Pressure garments are worn throughout the day and it is important that the client is able to coordinate wearing with other daily life activities.

The client may engage in a dressing activity with his or her clothes. During this activity the client is able to practice donning and doffing his or her pressure garments as well as, getting dressed with normal clothing.

The client may engage in a self-care activity, such as bathing. Before and after this activity the client can practice donning and doffing his or her pressure garments. This activity provides an opportunity for the client to develop a wearing routine.

The client may engage in a social activity, such as playing a card game. During the game the client can work on manipulating cards while wearing the garments. This activity provides an opportunity for the client to get used to wearing the garments during occupational tasks

Desensitization

The occupational therapist may utilize systematic desensitization tasks to help improve the client's hypersensitivity with newly healed and/or grafted skin.

Interventions can be utilized including: weight-bearing pressure, scar massage, rewrapping or pressure garment usage, and therapy putty to reduce hypersensitivity.

- Physical agent modalities, such as fluidotherapy and transcutaneous electrical nerve stimulation (TENS) (Hettrick et al., 2004) are also helpful for desensitization. This type of intervention is an option even though it is typically performed during out-patient therapy. Also, an occupational therapist requires continuing education and special certification in order to properly administer these interventions.

Engage the client in object manipulation, utilizing a variety of textures for sensory stimulation.

- Have the client begin this intervention by holding soft textures (e.g. cotton balls) and then progress to them holding objects with rougher textures (e.g. Velcro).



Occupational-Based Alternative

When utilizing the preparatory interventions related to desensitization, the occupational therapist should consider combining these with occupation-based activities.

The client may engage in a cooking activity, such as preparing a meal for lunch with his or her family. During this activity, for one of the tasks the client can mix ingredients in a bowl using his or her hands. This activity provides an opportunity for the client to mix different ingredients to help with desensitization.

The client may engage in a laundry activity. During this activity the client can folding laundry that his or her caregiver brings in from home. This activity provides an opportunity for the client to fold different materials with various textures to work on desensitization during a meaningful activity.

The client may engage in dressing and bathing activities. Self-care activities such as these can be performed independently by the client using his or her routine. These activities provide an opportunity for the client to be exposed to many feelings and textures to help with desensitization.

The client may engage in a leisure activity, such as using the community. During this activity the client can have a TENS unit running while surfing the internet. This activity provides an opportunity for the client to engage in occupation while desensitizing.

Endurance/ Activity Tolerance Training

The occupational therapist may utilize endurance-training activities to help improve the client's energy levels. With medical referral, the following intervention tasks may be considered for intervention.



Engage the client in aerobic activity for 20-30 minutes three times a week, performing at a max heart rate of 60%, in order to help retain the client's cardiovascular system.



Training can occur using a variety of interventions including, but not limited to: stationary bike, upper body ergometer, and repetitions of ascending and descending stairs.



Helping the client return to a normal sleep cycle, aids the client in returning to a "normal" level of activity. This can occur by increasing the amount of hours the client sleeps at night and decreasing the number of naps they take during the day.

Note : Clients may have decreased muscle bulk and low endurance due to prolonged hospital stays, possible ventilator dependency, and periods of immobilization. It is common for clients to feel fatigued and unable to stay active all day, however it might take months before the client's energy returns to normal.

(Pessina & Orroth, 2008)



Occupational-Based Alternative

When utilizing the preparatory interventions related to endurance/activity tolerance training, the occupational therapist should consider combining these with occupation-based activities.

The client may engage in an exercise program using his or her usual routine. The exercises can be graded to build up the client's endurance and activity tolerance over time. This activity provides an opportunity for the client to use a personalized routine for returning to a "normal" activity level.

The client may go for a nature walk outside. During this activity the client may invite his or her family/friends to join. The client may also have his or her caregiver bring the family dog and take it for a walk. This activity provides an opportunity for the client to increase endurance and activity tolerance.

The client may walk to the cafeteria for a meal. During this activity the route taken to the cafeteria can be graded, for example using the stairs instead of the elevator. This activity provides the opportunity for the client to increase endurance and activity tolerance.

The client may work towards self-adjustment of his or her sleep cycle. Based on the client's need for more energy during the day, the client can develop and utilize a routine for sleeping. This provides an opportunity for the client to regulate sleep patterns and improve activity tolerance throughout the day.

Coordination/ Balance Development

The occupational therapist may utilize graded fine motor and gross motor activities to develop the client's coordination and balance.



Engage the client in selected progressive tasks that challenge their skills/abilities.

- An example of this type of intervention would be having the client open jars with large lids and then having them open containers with small lids.



Engage the client in activities using a therapeutic ball, in order to promote balance and motor skill development.



Utilize manually resisted exercise, such as Proprioceptive Neuromuscular Facilitation (PNF) to elicit normal movement patterns.

- PNF treatment may be used with client's to decrease muscular guarding, encourage reciprocal and rotational movement of the head, neck, torso, upper and lower extremities, and strengthen core muscles, so that coordination can be facilitated.
- PNF techniques to utilize with clients include: Contract-Relax, Rhythmic Initiation, Diagonal 1 (D1) and Diagonal 2(D2) Movement Patterns, and Developmental Postures - Manual Resistance.

Note : Due to periods of immobilization and/or scar healing the client may have limited ROM, strength, and sensation, which are all factors that can contribute to poor coordination.

(Longenecker Rust, 2008)



Occupational-Based Alternative

When utilizing the preparatory interventions related to coordination/balance development, the occupational therapist should consider combining these with occupation-based activities.

The client may engage in a leisure activity, such as mini-golf. During this activity the client uses eye-hand coordination and weight-shifts to aim and hit the ball into the hole. This activity provides an opportunity for the client to work on coordination and balance.

The client may engage in a dance activity. The activity can be graded through the use of different music and styles of dance. This activity provides an opportunity for the client to enhance coordination and balance through meaningful movement.

The client may engage in the use of his or her cell phone and/or computer. During this activity the client can use eye-hand coordination and fine-motor coordination to navigate the technology. This activity provides an opportunity for the client to work on coordination.

The client may engage in a social activity, such as a board game. During the activity the client can sit at the edge of the bed, reach for objects, and use eye-hand coordination. This activity provides an opportunity for the client to develop balance and coordination through meaningful occupation.



Proprioceptive Neuromuscular Facilitation Intervention Guide

(Longenecker Rust, 2008)

Contract-Relax

A repeated effort is used without sustained effort from the patient to stimulate a response in the lengthen range of motion. Contract-Relax can be used to increase passive range-of-motion.

Rhythmic Initiation

Repeated movement without sustained effort from the patient, in order to stimulate muscle contractions and purposeful movement. This technique is used to teach the patient how to move and increase strength.

D1 & D2 Movement Patterns

For both the upper and lower extremities, with a flexion component and extension component. Facilitation of rotation is key to a coordinated movement. Diagonal patterns work well for home exercise programs and increasing active range-of-motion.

Developmental Postures Manual Resistance

Facilitating your patient through the developmental postures is a great way to gain proximal stability, strength of all extremities, and range of motion in all joints.



Re-valuation/ Outcomes

Re-evaluation/Outcomes

The occupational therapist will need to re-evaluate the client every 2 weeks in order to ensure the best care possible. This will allow the client to self-reflect and determine new areas for change. Outcomes measurement includes use of the RMMS and FIM scales, while also re-evaluating the client's performance and satisfaction through re-administering and scoring the COPM. To aid in the re-evaluation process the occupational therapist may consider utilizing the following assessments:

The Canadian Occupational Performance Measure

- Standardized, semi-structured, client-centered interview.
- This assessment is recommended to gain a better understanding of what occupations the client is unsatisfied with and help guide the intervention planning.
- Should be completed during re-evaluation at discharge to determine changes in perception of the client's occupations.

(Law et al., 2005)

Relative Mastery Measurement Scale

- Self-reporting measurement of occupational adaptation
- Based on internal responses based on effectiveness, efficiency, and satisfaction with challenges in occupations.
- The RMMS assists the client in taking control of changes in intervention goals. The client may not choose to change goals every 2 weeks, this allows them that opportunity.

George Schake & Ishee, 2004)

Functional Independence Measure

- Observation tool that rates clients performance on 18 items related to independence in activities of daily living. Rated on a 7-point scale with 7 meaning total independence.
- This tool will provide objective information about the functional status of each client.
- Should be completed during re-evaluation at discharge to assist the client in understanding their performance level for transitioning to their home environment and out-patient occupational therapy treatment.

(UDSMR, 1997)



Case Study & Application

Case Study

A case study was developed for the purposes of illustrating the use of the occupation-based protocol for treatment of adults with burn injury.

Peter

Peter is a 43-year-old male who has acquired a burn injury. He was lighting a bonfire using gasoline to ignite it. The gasoline caught fire and it blew back at him catching his clothing on fire on his right side. After his friends extinguished the fire, Peter's entire right arm and right side of his torso were severely burned, approximately 27% of his body.



Image from Microsoft Clipart, 2007

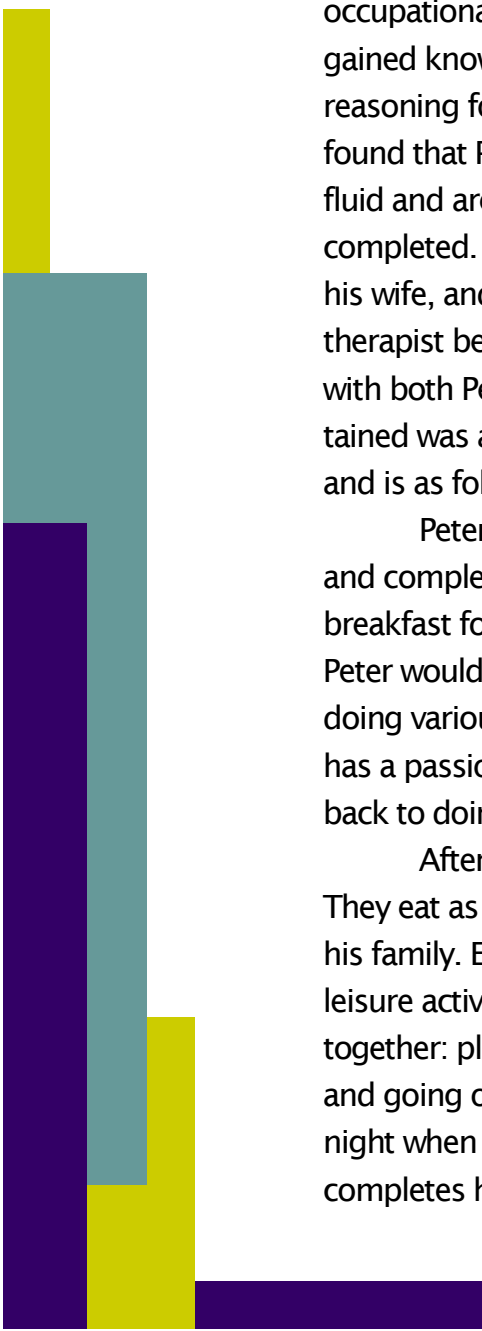
He currently lives in a two-story home with his wife, Sarah, and two daughters, Leah age 7 and Heather age 10. His wife is very supportive, however, due to the accident, she has an increased amount of roles at home. Prior to the accident, Peter worked as a carpenter for a small business that his brother owns. After work he helps cook dinner and relaxes with his family by watching TV and playing games. On the weekends he engages in a variety of outdoor activities; attending his daughters sporting events, hunting with his brother, yard work, and going on bike rides.

Peter has been in the acute phase of burn rehabilitation for several months. He has had two reconstructive surgeries, including a skin graft on dorsal side of his right arm and the axilla region. Peter wears a splint in the axilla region when resting. Up to this point, Peter has been dependent on his wife and nursing staff for self-care activities.

Peter has been moved to the inpatient burn care center at his hospital and has begun the rehabilitative phase of burn treatment. He will be seeing occupational therapy two times per day, six days per week.

Case Application

Occupational Therapy Initial Evaluation



In preparation for the initial assessment, the occupational therapist completed a chart review and gained knowledge of Peter's burn injury. She learned the reasoning for his injury and his present medical status. She found that Peter's wounds are no longer draining serous fluid and are now closed. The initial assessment was then completed. Present during the initial assessment were Peter, his wife, and the occupational therapist. The occupational therapist began the assessment by completing an interview with both Peter and his wife, Sarah. The information obtained was about the roles he had prior to the burn injury and is as follows:

Peter typically awoke by 6:00 a.m. in the morning and completed his daily shower routine. He then prepared breakfast for his wife and two daughters. After breakfast, Peter would go to work as a carpenter. He worked all day doing various carpentry and woodworking projects. Peter has a passion for woodworking and desires to return back to doing his work tasks.

After work, Peter assists his wife with cooking dinner. They eat as a family. Peter particularly enjoys his time with his family. Each night after dinner, he and his family do a leisure activity. There are various activities that they do together: playing games, watching television and movies, and going on bike rides. The day ends around 9:00 p.m. at night when he helps his girls get to bed. Soon after, Peter completes his nighttime routine.

(Continued on next page)

(Continuation of occupational therapy initial evaluation)

In conversing with Peter and his wife, the occupational therapist determined that there was a primary concern with completing self-cares at this point in his rehabilitation. He is completely dependent on his wife and nursing staff for self-cares. Peter finds this embarrassing and recognizes the need for adaptation with these occupations. Due to this fact, the occupational therapist chose to engage Peter in basic self-cares to elicit observation of these tasks. The occupational therapist observed that Peter struggled getting out of bed. She learned that he has been immobilized for awhile. She also noticed that Peter exhausted quickly during the task. The occupational therapist gained a large amount of information about Peter's occupations and roles by interviewing him and his wife and observing him while performing his self-cares. In addition to the interview and observation, the occupational therapist decided to complete the Interest Checklist and the COPM.

The results of the Interest Checklist indicate that Peter has a significant list of things he enjoys doing. He also indicated which things are important for him in the future. A summary of the occupations that he indicated as participating strongly within the last year include: yard work, playing cards, church activities, radio, car repair, golf, puzzles, holiday activities, movies, barbeques, reading, television, table games, cycling, home repairs, woodworking, hunting, driving, and cooking. He indicated the desire to follow through with all but two of these occupations in the future; he is fine with giving up car repairs and cycling for the present time.

The results of the COPM indicate that the five most important occupational problems to Peter include: toileting, cooking, outdoor functional mobility, wood working, and exercise. After calculating Peter's performance and satisfaction scores for each of these occupations, the total score for performance was 16 and satisfaction was 15.

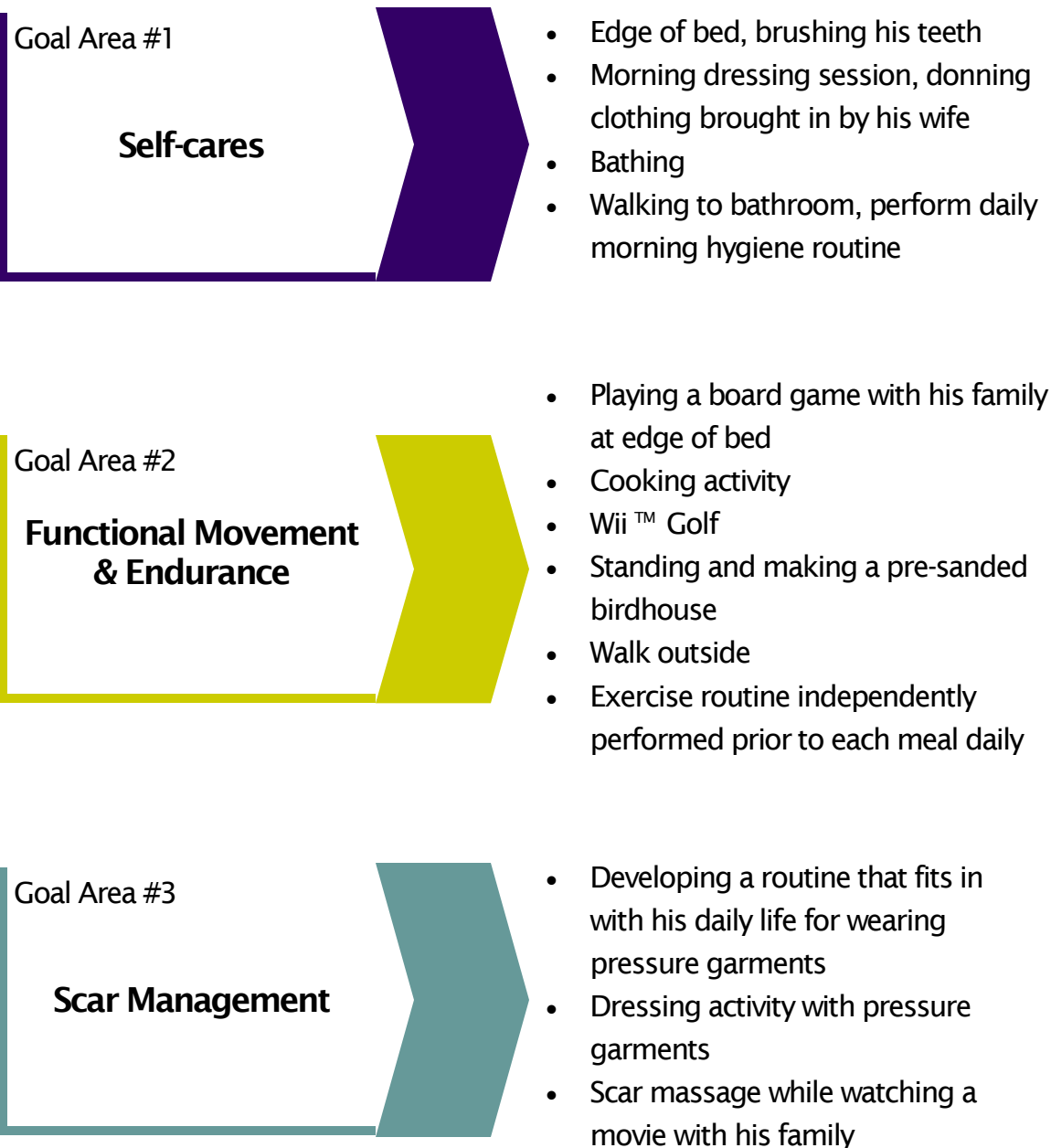
Intervention Plan Development

After completing the initial evaluation the occupational therapist is able to analyze the data and develop goals in collaboration with Peter. Since Peter's main concern is his independence in self-cares, this will be what they focus the first goal on. The second goal for treatment will be focused primarily on increasing his functional movement and endurance, due to recent immobilization. Peter's wounds have epithelialized and developed into scars, because of this the he will have a third goal focused on scar management with prevention of range-of-motion loss.

Peter's input, with facilitation from the occupational therapist, helped with the development of his personal rehabilitation goals. All of Peter's goals focused on increasing his level of independence and adaptation process prior to being discharged home. With each goal it was noted that occupations were being used as means or as an end. Also, they emphasized the need for engagement in traditional burn rehabilitation to develop functional abilities.

Intervention Implementation

Peter is seen twice daily for 45 to 60 minutes each session by occupational therapy. The following three goal areas were addressed during treatment and occupation-based interventions were applied.



Re-evaluation/ Outcomes

Peter was provided rehabilitation services at the inpatient facility for a period of 6 weeks. After two weeks the occupational therapist administered the FIM™ assessment to compare Peter's scores to his acute rehab FIM™ scores. The occupational therapist also analyzed any changes in his scores from the FIM™ and adjusted his goals accordingly.

Peter's performance and satisfaction were re-evaluated at 6 weeks using the COPM. The same five occupational problem areas were addressed, which included: toileting, cooking, functional outdoor mobility, wood working, and exercise. After calculating Peter's performance and satisfaction scores for each of these occupations, the total score for performance was 28 and satisfaction was 26. These results demonstrated that Peter improved the perception of his performance and satisfaction with the five most important occupations to him.

During the re-evaluation the occupational therapist encouraged Peter to complete the RMMS. Through the RMMS, Peter identified cooking a meal for his family as a recently performed occupation in occupational therapy. Peter was unable to successfully perform the task. The results of the assessment suggest that Peter is aware of his abilities in performing the task. After completing the RMMS, Peter suggested that meal preparation should be included within his goals. Edits were made and Peter began working towards successful meal preparation.

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