Reduce Exhaustion: Change Habits and Regain Energy (RE: CHARGE)

A Fatigue Management and Energy Conservation Group at the University of Puget Sound

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This research, submitted by Constance Bradley and Beverley Knigge, has been approved and accepted in partial fulfillment of the requirements for the degree of Master of Occupational Therapy from the University of Puget Sound.

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Abstract

Chronic fatigue is a symptom that affects many people and results in a decreased quality of life. Among those affected are persons with chronic conditions such as stroke, multiple sclerosis and arthritis, diagnoses common to clients who receive services at the Occupational Therapy Clinic at the University of Puget Sound. Research has indicated that energy conservation groups offer those who experience chronic fatigue with an effective treatment to increase energy levels and decrease the negative effects of fatigue. Energy conservation seeks to change how an activity is done in order to decrease energy expenditure and increase saved energy to be used selectively for meaningful occupational engagement. These techniques are commonly taught by occupational therapists. Using energy conservation principles, and the Model of Human Occupation as a guide, therapists address the habits, routines and values of occupational engagement. Packer, Brink and Sauriol's (1995) *Managing Fatigue: A Six-Week Course for Energy Conservation* is the most researched energy conservation program in the literature. Reduce Exhaustion: Change Habits and Regain Energy's (RE: CHARGE) manual, inspired by Packer et al.'s program, was created for first-year occupational therapy students at the University of Puget Sound to guide them in the implementation of energy conservation group program for persons in the community with fatigue secondary to chronic conditions.

ENERGY CONSERVATION PROGRAM

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For many people with chronic illness, fatigue is a symptom secondary to their disease, which results in a decreased ability to participate in the meaningful occupations (Glader, Stegmayr, & Asplund, 2002; Kluger, Krupp, & Enoka, 2013; Mathiowetz, Matuska, & Murphy, 2001). According to Venes (2009), chronic fatigue is "an overwhelming sustained sense of exhaustion and decreased capacity for physical and mental work at the usual level. . . long-continued fatigue not relieved by rest …" (pp. 852-853). Fatigue decreases muscle strength and endurance of the whole body, cognition (especially attention), emotional regulation and overall life satisfaction while increasing depressive moods and anger (Bakshi, 2003; Finlayson, Preissner, & Cho, 2012). Fatigue is associated with stroke or cerebrovascular accident (CVA), multiple sclerosis (MS), chronic fatigue syndrome (CFS), traumatic brain injury (TBI), Parkinson's disease (PD), rheumatoid arthritis (RA) and osteoarthritis (OA); which are just a few of the many diagnoses in which fatigue may be an issue (Glader et al., 2002; Kluger et al., 2013).

Occupational therapists recognize the importance of participation in meaningful activities for the purpose of maintaining or increasing quality of life (American Occupational Therapy Association [AOTA], 2008). Energy conservation training by occupational therapists helps individuals prioritize goals, simplify tasks and identify and change energy draining habits and routines to reduce the negative impact of fatigue and increase participation in meaningful occupations (PubMed Health, 2008; Venes, 2009). Research has indicated that energy conservation training is effective in increasing quality of life and decreasing the negative effects of fatigue on participation and occupation (Matuska, Mathiowetz, & Finlayson, 2007).

Occupational therapists are uniquely qualified to provide energy conservation training to improve participation in meaningful daily activities and therefore increase the quality of life of their clients (Bondoc & Siebert, 2010).

First year occupational therapy (OT) students at University of Puget Sound are qualified, under supervision, to teach energy conservation principles through group sessions to members of the community with chronic fatigue. The University of Puget Sound Occupational Therapy (OT) and Physical Therapy Clinic clients often experience secondary fatigue; therefore, many of the clinic clients would likely benefit from an energy conservation training program to reduce the impact of fatigue (D. Yoshimura-Smith, personal communication, September 26th, 2013).

Purpose Statement

The purpose of this project is to provide first year, second semester, OT graduate students at University of Puget Sound, with a manual they can use to implement an energy conservation program for community-living clients who experience chronic fatigue in order to increase their participation in meaningful occupations.

Literature Review

Fatigue: Definitions and Common Related Diagnoses

Fatigue is a common symptom for many individuals with chronic illnesses, including neurological impairments and rheumatic diseases (Glader et al., 2002; Kluger et al., 2013). The expression of fatigue varies depending on the specific presentation of a diagnosis. RA associated fatigue is a manifestation of the systemic nature of the disease, which does not merely affect the joints but an individual's organs as well (Mayo Clinic, 2011). For people with CFS, 100% experience fatigue; and 25-43% cannot work, pursue a formal education, maintain a home,

and/or get out of bed (Komaroff & Buchwald, 1991). Approximately 60% of people with PD experience fatigue that interferes with daily activities (Barone et al., 2009). For people with MS, prevalence of fatigue is between 75-90%; it is the most commonly reported symptom of the disease, which tends to occur daily in the evening (Bakshi, 2003; Packer, Brink & Sauriol, 1995). According to Forwell (2011), studies have shown that nerve fiber fatigue, otherwise known as primary MS fatigue, is present in more than 90% of people with MS and could be caused by other contributing factors such as sleep problems, depression and/or increased energy expenditure due to walking difficulties. Depending on the population studied, 16-72% of people with a CVA report fatigue (Finlayson, Impey, Nicolle, & Edwards, 1998; Ingles, Eskes, & Phillips, 1999). Lerdal et al. (2011) conducted a study that found a strong relationship between lower physical function and depressive symptoms, which led to higher levels of fatigue in the acute-phase post-CVA. In addition, if participants of the study were more dependent in activities of daily living (ADLs; e.g. eating/drinking and personal hygiene), had poorer sleep quality, or had a respiratory disease, then fatigue levels were higher (Lerdal et al., 2011). As indicated by Lerdal et al.'s (2011) study, fatigue is commonly related to depression.

Depression is often associated with fatigue. Research is inconclusive concerning the precise relationship that depression and fatigue share, that is, does fatigue cause depression, does depression cause fatigue, or is the relationship reciprocal? Individuals with diagnoses such as CVA, CFS or MS commonly have both fatigue and depression, which can affect energy levels (Naess, Lunde, & Brogger, 2012; Patten, Beck, Williams, Barbui, & Metz, 2003). Naess et al. (2012), conducted a study with 328 participants who had ischemic CVAs, showing overall health-related quality of life (HRQoL) was determined by common CVA symptoms: fatigue,

pain and depression (Naess et al., 2012). Glader et al. (2002) conducted a study on 3820 participants post-CVA and found a significant association between depression and feeling tired (experiencing fatigue; Glader et al., 2002). Although it is often not clear if depression is caused by, or is the cause of, fatigue, a strong relationship exists between the two conditions. Due to this association, medical professionals working with persons with fatigue should screen for depression and vice versa, as treating one symptom can have an affect on the other. While the associated diagnoses and causes of fatigue vary, individuals with fatigue are likely to experience a decreased quality of life, regardless of the diagnosis.

Impact of Fatigue

Fatigue is a symptom that makes participation in meaningful occupations increasingly difficult, often resulting in decreased or ceased participation, which negatively affects an individual's quality of life (Stout & Finlayson, 2011). Vanage, Gilbertson and Mathiowetz (2003), reported that 80% of individuals with MS had decreased participation in activities, especially activities with higher energy demands. Flinn and Stube (2010) conducted a qualitative study, on 19 adults post-CVA, that found occupations could not be performed in the same way as before the CVA due to fatigue. Areas of occupation negatively impacted by fatigue included: social participation, leisure, work, instrumental activities of daily living (IADLs; such as preparing a meal, grocery shopping, cleaning or taking medications as prescribed), sleep, etc. (Flinn & Stube, 2010).

Glader et al. (2002) conducted a prospective cohort study with 3820 participants two years post-CVA using a questionnaire with content related to feeling tired, general health and dependence in ADLs or IADLs. The results of the study found approximately 10% of

participants reported severe fatigue and approximately 29% reported moderate fatigue. Additionally, the results showed a correlation between fatigue and dependence in ADLs or IADLs where, as fatigue severity increased, participants were more dependent in ADLs or IADLs. Additionally, participants with frequent to constant fatigue were more likely to live in an institution and be in poor general health compared to similar participants with minimal fatigue (Glader et al., 2002). Based on these results, fatigue severity may predict negative outcomes, including participation in daily activities. Measuring the impact of fatigue is accomplished using a number of different assessments.

Functional assessments of fatigue. Healthcare professionals use assessments to identify the impact of fatigue on participation in daily activities, to determine the best treatment options for alleviating fatigue, and to provide a baseline for measuring changes in fatigue over time or in response to treatment. Fatigue is subjective and challenging to assess in quantifiable terms (Dittner, Wessely, & Brown, 2004). However, several assessments are available to measure an individual's perceived level of fatigue (Dittner et al., 2004). Diagnosis-specific fatigue assessments for the majority of the aforementioned diagnoses do not exist. The Multidimensional Assessment of Fatigue, Brief Fatigue Inventory and the Fatigue Impact Scale are a few assessments that are generalized enough for use with people with most diagnoses and can be used to gauge whether treatments are effective to reduce the symptom of fatigue in clients (Belza, n.d.; Fisk et al., 1994; Mendoza, Wang, Cleeland, Morrissey, & Johnson, 1999). For the purpose of this project, the Multidimensional Assessment of Fatigue is the most appropriate fatigue assessment, due to the type of questions asked, its relative short length (less than five minutes) to administer, ease of administration and questions addressing a range of ADLs. The

Multidimensional Assessment of Fatigue questionnaire is free to use for projects funded by students or a university (Patient-Reported Outcome and Quality of Life Instruments Database [PROQOLID], 2014).

Treatments for Fatigue

Medications. There are various medications to alleviate fatigue for different diagnoses. Branas, Jordan, Fry-Smith, Burls and Hyde (2000) conducted a systematic review on treatments for people with MS experiencing fatigue. The medication amantadine, typically used as an antiviral and anti-Parkinsonian, was one treatment found to result in a small but statistically significant reduction in fatigue for people with MS in four studies (National MS Society, n.d.). However, numerous side effects, including insomnia, resulted in one out of the four studies. Additionally, none of the four studies had blinding of researchers when assessing outcomes, reducing the internal validity of the studies (Branas et al., 2000).

Qigong. Other types of treatment for fatigue include complementary therapies, that is, unconventional medicine. Ho et al. (2012) conducted a study on persons with chronic fatigue syndrome to find if qigong exercise, a Chinese mind-body exercise that aims at improving the body's energies, would be beneficial to individuals experiencing chronic fatigue. The result of the study showed that qigong exercise did improve physical fatigue symptoms in persons with chronic fatigue syndrome (Ho et al., 2012). No studies show the effects of qigong exercise on other populations with fatigue.

Cognitive behavioral therapy (CBT). CBT is based on the theory that changing an individual's negative thinking and feeling ultimately improves behavior. Hewlett et al. (2011) conducted six 2-hour CBT group sessions with participants with RA to discover if such treatment

would alleviate fatigue. Hewlett et al. (2011) found significant differences between participants receiving CBT treatment at 18 weeks compared to those who were not receiving the treatment (Hewlett et al., 2011). CBT benefits those with chronic fatigue; however, CBT does not offer alternative strategies that focus on fatigue for an individual to increase his or her participation in occupations (Mayo Clinic, 2013, National Alliance on Mental Illness [NAMI], 2012).

Cognitive and graded activity training (COGRAT). Another treatment for fatigue is COGRAT, developed by Zedlitz, Fasotti and Geurts (2011), and later researched by Zedlitz, Rietveld, Geurts and Fasotti (2012). The aim of the study was to compare the effectiveness of COGRAT, which combined a graded activity program (e.g., walking on treadmill, strength training, and physical fitness) to that of using only cognitive treatment (using elements of CBT) in decreasing fatigue and increasing physical endurance for two groups with post-CVA fatigue. The results of the randomized control trial showed reduced fatigue levels in both groups, with no significant difference after a 3-month qualification period or at 6-month follow-up; however, the COGRAT group had greater reduced fatigue scores and improved physical endurance (Zedlitz et al., 2012). Although the means were trending towards the expected direction, the analysis failed to show statistical significant differences; therefore, more research is warranted. For this intervention, the activities involve prescribed exercises that clients may or may not find meaningful, which is a limit to this treatment approach.

Energy conservation programs. Energy conservation programs are educational treatment methods that incorporate energy conservation principles to help individuals identify and change habits to reduce fatigue's negative impact (PubMed Health, 2008). Venes (2009) defines energy conservation within rehabilitation, as "a process for managing fatigue by

prioritizing goals and time use, simplifying tasks and organizing the environment to make necessary work more efficient" (p. 775). In research, energy conservation programs have often been implemented by occupational therapists (Gerber et al., 1987; Mathiowetz et al., 2001; Packer et al., 1995). By using an educational approach, clients' performance factors, habits and routines can be evaluated and modified to increase energy through planning and preparing tasks in which the client participates (AOTA, 2008). Part of the occupational therapist's role in education of energy conservation principles is to assist clients in finding new ways to adapt the activity demands of the occupations they need and want to do while minimizing fatigue. These changes could include use of adaptive equipment and/or modifying the task to decrease energy use. For example, sitting while grooming uses 25% less energy than if performed while standing (Lou & Tischenkel, 2009). There are various ways of managing fatigue through energy conservation treatments and research indicates that they have an impact on fatigue levels.

Content and effectiveness of energy conservation courses. There are a variety of approaches for teaching energy conservation techniques. One such approach is a course developed by Packer et al. (1995) named *Managing Fatigue: A Six-Week Course for Energy Conservation.* This program has helped clients with extreme fatigue secondary to chronic illness experience less fatigue and participate in the activities they find most important. The course was designed for any community-living adult with fatigue secondary to chronic disease, including post-polio syndrome, CFS, MS and others. The course outlines how an occupational therapist will educate clients in the benefits of rest and utilization of breaks during activities. Participants are instructed to break up high-energy tasks, incorporate rest periods and implement methods for prioritizing activities to budget energy. Biomechanical principles are taught within the course to

reduce activities' energy demands. Clients learn how to advocate for their individual energy needs within their community. Additionally, clients are instructed in long and short-term goal setting (Packer et al., 1995).

Packer et al. (1995) conducted a pilot study to examine the effectiveness of *Managing Fatigue: A Six-Week Course for Energy Conservation.* The study included 16 participants with fatigue who participated in the 6-week course along with completing the Fatigue Impact Scale in a pre-test/post-test format. Researchers did not provide participant demographic or diagnoses information. Preliminary results showed a statistically significant decrease in the impact of participants' fatigue after attending the course. Mathiowetz et al. (2001) conducted a 19-week study to determine the effectiveness of Packer et al.'s (1995) course at alleviating the symptoms of fatigue and increasing the quality of life of 54 participants with MS. In the experiment, participants first underwent a control intervention for 2-hour weekly general support group sessions for 6 weeks, followed by 2-hour weekly experimental intervention sessions for 6 weeks following Packer et al.'s (1995) energy conservation course. Results showed a significant reduction in the impact of fatigue, along with improved quality of life and self-efficacy immediately after participants completed Packer et al.'s (1995) 6-week energy conservation training and results were maintained in the 6 weeks after the course. No significant changes were seen after participants attended the support group (Mathiowetz et al., 2001). Mathiowetz, Finlayson, Matuska, Chen and Luo (2005) further assessed of the efficiency of Packer et al.'s (1995) course with a 169 participant randomized control trial with a crossover design. Results of this study indicated a significant decrease of the impact of fatigue and increase in quality of life and self-efficacy (Mathiowetz et al., 2005). Vanage et al. (2003) evaluated the use and

effectiveness of attending an energy conservation course using a quasi-experimental study with a crossover design. Thirty-seven participants with MS were divided into two preexisting groups. One group underwent Packer et al.'s (1995) energy conservation course for 8 weeks, followed by an 8-week support group control intervention; while the other group received both 8-week interventions in reverse order. Results of a pretest and posttest showed a significant reduction in fatigue's impact after the energy conservation course but not after the control period, and decreased fatigue was maintained 8 weeks after program completion. Matuska et al. (2007) conducted a study to describe the perceived effectiveness and use of energy conservation principles with 123 participants of Packer et al.'s (1995) energy conservation course. The results showed participants perceived energy conservation strategies to be effective at reducing fatigue; participants implemented nearly all of the newly learned principles into their daily routines. The implications of these studies indicate energy conservation training, like Packer et al.'s (1995) course, can reduce fatigue and should be implemented as a treatment to increase quality of life for clients with limited occupational participation due to fatigue (Matuska et al., 2007).

Diagnosis-specific implications. Although Packer et al.'s (1995) energy conservation course has been primarily evaluated with the MS population, the program methods and techniques taught are not specific to people with MS and were designed for any community-living adult with fatigue secondary to chronic illness. Further research is needed, but the provided aforementioned studies indicate that the generalizability of the program's effectiveness is promising for other people with chronic fatigue symptoms, especially post-CVA, where there are very few treatment options available. For example, McGeough et al. (2009) were unable to perform a meta-analysis due to insufficient search results, and therefore conducted a systematic

review yielding only three randomized control trials on fatigue treatment that met inclusion criteria. None of the three studies found the interventions, medication and/or a generalized approach to chronic illness, effective in decreasing fatigue after a CVA (McGeough et al., 2009). However, the studies had limitations, including small sample size. The results demonstrate how limited the research is regarding treatment to alleviate fatigue for people post-CVA. Packer et al.'s (1995) energy conservation course is an alternative, noninvasive, treatment that can provide general fatigue management training to all people with chronic fatigue secondary to illness.

Given that fatigue is a common complaint and affects the quality of life of many people, and there is evidence to show that energy conservation is effective for managing fatigue in people with MS, it would be worth developing similar programs for people with chronic diseases other than MS that address fatigue. Additionally, Packer et al.'s (1995) course was designed for a group format, implying multiple diagnoses can be treated simultaneously.

Energy conservation for groups. Effective energy conservation programs, as found in the research described above, are formatted to be delivered to groups, rather than individuals (Gerber et al., 1987; Matuska et al., 2007; Packer et al., 1995). The benefits of group sessions are that more people can be treated at one time and clients can share their experiences, learning from others on how they handle their challenges. Nilsson and Nygard (2003) conducted a qualitative study of three post-CVA participants prior to discharge from an inpatient rehabilitation center to examine the types of experiences participants had in OT group activities. The results of the study indicated that group activities provided an opportunity to exchange information and knowledge that promoted new learning, reflection and adaptations to their identity through acquiring different perspectives of roles and identities (Nilsson & Nygard, 2003). Group treatment sessions

are therapeutic to the learning process and offer another dimension to therapy. One possible venue for delivering such a program is a student OT clinic that provides free services to the surrounding community.

Implications for Occupational Therapy

Reduce Exhaustion: Change Habits and Regain Energy (RE: CHARGE): A Fatigue Management and Energy Conservation Group at the University of Puget Sound program aims to increase participation for people who experience chronic fatigue in occupations they find meaningful, necessary, and/or fulfilling through instruction in modifications/adaptations to their routines and habits, thereby increasing their occupational engagement and their quality of life.

The Model of Human Occupation (MOHO) addresses the routines, habits and roles, motivation, environment, and performance capacity (how the person performs daily activities) that are involved in the occupations in which a person chooses to engage (Kielhofner, Forsyth, Kramer, Melton, & Dobson, 2009). RE: CHARGE aims to target these components of occupational engagement and decrease the impact of fatigue. To address occupational deficits and create goals for improvement in occupational engagement, the MOHO will guide how the program will be implemented and what intervention strategies will be used. The program seeks to identify when a participant is able to meet the various activities' demands he or she holds as important and chooses to participate in and when he or she may struggle to meet demands due to fatigue. Fatigue impacts all areas of life; therefore, strategies that are generalizable to all areas of life will be implemented to have the greatest result. One strategy is to use energy conservation principles to prioritize and restructure activities that comprise one's daily routine for an overall reduction of fatigue's impact on quality of life.

According to the MOHO, the ability to achieve a level of competence to participate in meaningful occupations first begins with the interplay between environment and characteristics of the person (Kielhofner et al., 2009). In accordance with the MOHO, participants in RE: CHARGE will choose occupations based on volition, which include the person's satisfaction in, commitments to, and values placed in doing activities (Kielhofner et al., 2009). Occupational engagement can be negatively affected if the participants' characteristics, limited performance capacity and/or encountered environmental barriers, limit their ability to meet activity demands. Examining limitations will provide student therapists and participants with information to create a better fit by adapting the participant, their environment, or the task demands in a variety of ways. The purpose of the RE: CHARGE program is to alleviate the negative effects of fatigue on occupational engagement.

RE: CHARGE will address participants' occupational identities. An occupational identity is a composite of values, interests, habits, routines and roles that shape the importance of, and participation in, specific occupations. Fatigue is likely to hinder a person's occupational competence for enacting their premorbid occupational identity, especially habits and routines that are difficult to maintain due to fatigue. According to the MOHO, many activities become habituated; meaning the activities that comprise an individual's life will often be performed in a predictable manner without much active attention involved (Kielhofner et al., 2009). RE: CHARGE program provides strategies to modify existing, or develop new, habits, routines and occupational identities, as needed, based on the performance capacity of the individual. Individuals achieve positive occupational adaptation when they can enact their occupational identity within a variety of situations and contexts (Kielhofner et al., 2009).

Occupational therapists using the MOHO focus intervention on positively affecting a client's volition, habituation and performance capacity along with environmental modifications and dimensions of doing to improve occupational competence (Kielhofner et al., 2009). Within RE: CHARGE program, student therapists will use therapeutic strategies identified by the MOHO, such as coaching, identifying obstacles, advising, structuring schedules and activities, demonstrating, supporting, and providing encouraging feedback as tools to promote positive adaptations in order to increase occupational participation for clients (Kielhofner et al., 2009). The manual will follow the MOHO in directing treatment to modify tasks, the environment, and participant's habits and routines to best suit their energy needs. To accomplish this, an OT student will work with clients during the program to focus intervention on creating positive occupational adaptations for clients by being mindful of their thoughts, actions and feelings within participation in occupations.

OT students will choose and implement the appropriate interventions outlined in the manual for their clients with fatigue. Participants will attend six group sessions designed to identify effective ways to target and change energy draining habits and provide instruction for energy conservation techniques. Completion of the six-session program will provide participants with the tools they can use to increase participation in routines, habits, and roles, as is fitting to their personal goals. Discussion, instruction and occupation-based activity demonstrations within the sessions will provide clients with the skills they need to apply principles of energy conservation, work simplification and fatigue management techniques to at-home, real-life activities. Homework and follow-up will aid in promoting practice and implementation of learned material and will increase the likelihood that principles will be adhered to after the

program has concluded. Due to the heavy emphasis on activities as occupations and changing/adapting habits and routines, OT practitioners are well suited to provide energy conservation instruction that will improve a client's occupational performance.

This project provides OT students with a tool, influenced by the MOHO, which guides therapeutic intervention to maximize participation in meaningful activities for people who experience chronic fatigue. Participants' personal causation of activities they wish to engage in are assessed throughout the energy conservation program. During group sessions, student leaders will use the manual as a guide to assist participants in developing their performance capacity and adapting or modifying the environment, to enhance occupational competence. The desired outcome is to provide people with fatigue the knowledge and skills needed to maximize the amount of energy they have to participate in the routines, habits, and roles they find meaningful, important and fulfilling.

Procedure

This project started with research to determine the need to reduce fatigue for people with a variety of chronic diagnoses. A review of related literature was then conducted to identify effective approaches to managing fatigue for these persons. It was concluded that energy conservation programs are an effective approach for fatigue reduction. To better inform the project and determine the need for a community fatigue management program, interviews were conducted with people experiencing fatigue from the community. Interviews with University of Puget Sound faculty and clinical instructors were conducted to learn more about the University of Puget Sound clinic to gain a clearer picture of the types of clients with whom future OT

students will likely work with. Additionally, a decision was made based on research comparing product tools for designing and printing the manual.

Additional research was conducted regarding the types of energy conservation training and techniques previously implemented by healthcare professionals. With this information, the specific activities and educational material for the energy conservation training program were selected. Activities and content modules of pre-existing energy conservation programs, proven effective by research, were readapted to fit the needs of first year OT students participating in an authentic learning experience and to the participants anticipated to attend.

A pilot group session was conducted from a draft of the manual. This draft included: a table of contents, methods of delivery, one of the six content modules, instruction, handouts and assessment tools. Three first-year OT student volunteers participated, along with two second-year OT students as support, in administering a pilot session addressing only one session of the manual to four community volunteers who participated as clients in the session. Community volunteers were recruited from the University of Puget Sound OT clinic. The pilot was directed to assess the usability, content and design of the manual. Photographs were taken of all volunteers participating in the pilot session, with permission (via signed release forms), to be included in the final manual to provide future students with helpful visuals.

Immediately following the pilot session, client and student volunteers participated in a brief feedback discussion with program designers and, after participates from the community left, additional feedback was obtained from OT students. Questions were asked regarding perceptions of manual usability, and used to informally assess knowledge gained in the pilot

session. Revisions were made based on feedback obtained by the pilot treatment session and new photographs were added to the manual.

Planning and creating the course, energy conservation program, required the following skills: Research, organization, APA citation, writing, editing, computer skills, interpersonal skills, professional behaviors, interview skills, problem-solving, photography, creativity, knowledge of fatigue management/energy conservation techniques and methods, activity analysis (including task grading, collaboration and communication skills), ability to write in a language to best enhance student and participant education, formatting, printing/publishing (e.g., Word Publisher), time-management, prioritizing and therapeutic use-of-self.

Product Overview

The OT Master's program at University of Puget Sound offers students various authentic learning opportunities. Authentic learning provides the necessary training for students to be successful in the workforce (Wright, 2012). Lombardi (2007) stated that universities and colleges are getting students more actively involved in their education so that new information is more likely retained. Students in the current University of Puget Sound OT curriculum work with clients only in the second year, though first-year students may also benefit from clinic experiences. With instructor supervision, first-year OT students are able to teach energy conservation principles to clients experiencing chronic fatigue after energy conservation techniques are taught within the second semester. The inclusion of an energy conservation group program will enrich the current curriculum for first-year OT students by providing an authentic learning experience of working with clients from the community. Anne Birge James, PhD, OTR/L, a professor at University of Puget Sound, is a key player in the implementation of the

program; she will advocate for this program to be embedded within the OT curriculum in the near future.

RE: CHARGE is a group treatment protocol, described in a written manual, that was designed and created to assist first-year OT students in leading an energy conservation program targeting community members who experience chronic fatigue. The protocol was adapted from Packer et al. (1995) with written permission that is embedded in the manual, *Managing Fatigue: A Six-Week Course for Energy Conservation* published in 1995. In addition to the print manual provided to the University of Puget Sound OT department, an electronic version was also included ensuring students and OT instructors have easy access to the information needed to implement the energy conservation program. As outlined in Packer et al.'s (1995) energy conservation manual, RE: CHARGE program's manual provides easy-to-follow instructions for students to work with in order to lead one or more group sessions. The energy conservation program is designed to be six sessions long, once a week for 90-minutes each. Students will be able to use the RE: CHARGE manual to instruct participants about the impact of fatigue, common experiences associated with fatigue and provide training in task prioritizing and modification, work simplification, reduction of energy draining habits and routines and goal setting (Packer et al., 1995).

The manual includes eight sections: Introduction/Instructions, Six Content Modules and Resources for Group Leaders. These sections will be outlined as follows:

- Introduction/Instructions
    - Overall purpose of the manual
    - How to use the manual

- How to administer the program
- Specific and general information needed to lead all of the content modules

- Six Content Modules (described further below)
  - Schedule
  - Educational materials
  - Activities and topics for discussion
  - Additional documents
    - Slides
    - Therapist worksheets
    - Handouts
    - Homework
    - Resources for group members (located on manual's flash-drive)
- Resources for Group Leaders
  - Websites for supplemental learning and diagnosis-specific information on fatigue.
  - Sources used in the course manual

In addition to the printed manual, a master copy of a group member binder was assembled containing all handouts and resources to be stored with the manual. A flash-drive containing all materials in pdf form will be included in the back of the manual and a folder containing all group member assessments of fatigue for outcome measures are to be stored as instructed by the course instructor.

- Outcome Measures:

- Collect completed Multidimensional Assessment of Fatigue (to be analyzed and recorded in a recommended follow-up project/study)
- Obtain baseline data
  - Administer 10 minutes prior to the beginning of first program session
- Obtain program outcome scores to measure improvement
  - Administer at end of last session
  - Administer by phone three weeks following program conclusion

There will be six content modules, one for each of the six 90-minute group sessions. Each content module will include:

- Introduction/warm-up
- Review of prior week's challenges and successes
  - Not included in first module
- Teaching component
- Practice activity
  - Include rest breaks as needed
  - Demonstrations
- Homework
- Conclusion/Summary

Each of the six content modules will have one or two main objectives modified from Packer's et al. (1995) energy conservation manual, as follows:

- Define fatigue and teach the benefits of rest and fatigue management using energy conservation principles.
- Cover how to communicate/advocate to others about personal needs. Educate how to use proper body mechanics throughout daily activities.
- Outline purpose and creation of activity stations (work-spaces participants set up to minimize energy demands).
- Describe how to set priorities by banking (storing) and budgeting energy.
- Instruction on balancing a schedule by analyzing and modifying daily activities.
- Review future plans, teach goal setting, and provide an opportunity for participants to provide feedback on the program.

At the end of RE:CHARGE program unit, first-year OT students at University of Puget Sound will have hands-on experience leading groups and an opportunity to incorporate knowledge gained through the curriculum. Students will be supervised and provided feedback on how they led and used therapeutic use-of-self during group sessions. Participants in the RE: CHARGE group will learn new techniques such as work simplification and fatigue management to better engage in meaningful occupations and improve overall quality of life.

Outcomes

The goals and objectives of RE: CHARGE program are designed to be evaluated after the implementation of all six sessions. The pilot session covered a portion of the first session of the manual, which provided general information to define fatigue and fatigue's impact on occupational performance. Participants were educated partially on fatigue and the concept of energy management was introduced. Only a small portion of the program was administered, and

therefore the goals for the entire program were not measured or reached by the completion of this project.

Goal 1: After attending six energy conservation program sessions, participants will have a decrease of fatigue on the Multidimensional Assessment of Fatigue by at least 10%.

Progress towards goal. Participants were not given the Multidimensional Assessment of Fatigue due to time constraints and they only participated in a portion of one treatment session, therefore Multidimensional Assessment of Fatigue pre and post scores were not obtained and results were not analyzed.

Goal 2: After attending the energy conservation program, participants with fatigue will be educated about techniques and strategies that will increase their energy throughout the day.

Objective 1: After attending the energy conservation program, participants with fatigue will be able to independently identify at least four general energy-conserving techniques within their ADLs/IADLs to increase their energy throughout the day.

Objective 2: After attending the energy conservation program, participants with fatigue will be able to independently implement at least four energy-conserving techniques while performing ADLs/IADLs to improve their ability to participate in occupations.

Progress towards goal. Not yet met. The pilot session consisted only of a portion of the first session; only the basics in defining fatigue, its impact, how rest helps reduce fatigue and introducing energy management were addressed; therefore, the goal and objectives could not be met due to participants not being given the education and instruction.

Goal 3: After attending the energy conservation program, participants with fatigue will be able to evaluate their habits to improve their energy throughout the day.

Objective 1: After attending the energy conservation program, participants with fatigue will be able to identify at least four energy-draining habits.

Objective 2: After attending the energy conservation program, participants with fatigue will be able to identify at least four energy-saving habits.

Progress towards goal. Not yet met.

Goal 4: After reading the energy conservation manual and leading a program, first-year OT students will have greater knowledge and experience in leading a fatigue management group treatment program with members of the community with chronic fatigue.

Objective 1: After leading an energy conservation program, first-year OT students will be able to independently identify at least three basic steps to leading an energy conservation group.

Objective 2: After leading an energy conservation program, first-year OT students will be able to independently identify at least three strategies to help reduce fatigue for populations with chronic fatigue symptoms.

Progress towards goal. Not yet met. At the end of the pilot session, the first year OT students commented on their appreciation for having the experience leading a group discussion with people from the community.

During the implementation of the six-week energy conservation course, the goals and objectives will be met. Goal 1 will be assessed with the administration of the Multidimensional Assessment of Fatigue at the beginning of the first program session, on the last day of the program and three weeks after the conclusion of the program. Student leaders will record pretest and posttest scores along with any other relevant information such as participants' attendance. To

assess objectives for goals 2 and 3 participants will submit homework assignments in preparation for group discussions. Goal 4 objectives will be assessed through demonstration and completion of an energy conservation program as outlined by the manual. The supervising instructor will provide formative feedback after the group session to support the student's professional development through leading the program.

Limitations

In developing this project, it was important to consider the use of language within the manual to ensure first-year OT students at University of Puget Sound are able to understand and implement treatment sessions. Information within the manual also needed to be accessible for first-year students at their current level of mastery of related course content. Additionally, in creating this project, it was important to think about how to use language, both the delivery of content by students and in handouts, so the participants, who may have varying backgrounds and levels of education, could understand the information provided during treatment sessions. It is important to note that this energy conservation program manual is not diagnosis specific and is intended to be a general treatment plan for clients of any diagnosis. The advantage of a generic program is that it meets the needs of a broader population, however, students implementing treatment sessions may encounter diagnosis-specific questions or issues that the manual will not address with their clients.

The first limitation to the project was the timing of the pilot session within the first-year OT student curriculum. Students had not yet received fatigue, energy conservation, or group leadership training or education before piloting a teaching session. To remedy this, second-year OT students and program designers provided a brief 15-minute education and instruction on

fatigue and energy conservation before the client participants arrived. The second limitation was a tight time-frame of one week for first year students to review the manual, which conflicted with their coursework deadlines. This resulted in students not having familiarity with the manual prior to the initiation of the pilot session, and therefore they did not adhere consistently with the manual procedures. Under other circumstances, it would have been more beneficial if the students had been able to thoroughly read through and practice using the provided manual. To prevent this from recurring, an instructional page describing how to run an energy conservation session, with a detailed outline of procedures and recommendations, was inserted at the beginning of the manual to help guide student leaders. Lastly, was its brief length of 60-minutes, instead of the 90-minute recommendation of the manual, due to time constraints of room availability and scheduling conflicts.

Recommendations

It is recommended that RE: CHARGE program be offered as an authentic learning experience in the second semester of the Master of Science in Occupational Therapy (MSOT) program for the OT 2016 cohort. The program would fit into the curriculum best during the second semester of the two-year program and be implemented after students have had education in leading groups and had the unit on fatigue and energy conservation. It would be best if pairs of students administer one session of the manual per week for six weeks, as the faculty of the OT program sees fit. For the best learning experience, it is recommended that each student participant experience the role of being a leader and a co-leader at least once, and therefore it is proposed that each student participate in at least two treatment sessions acting in each role.

To measure the effectiveness of the program, it is recommended that results of the Multidimensional Assessment of Fatigue forms from the first and last session of treatment be recorded and analyzed as a future research project. The purpose of the research project would be to determine if there is a reduction of fatigue in clients who participated in the six-session RE: CHARGE program taught by first year OT students at the University of Puget Sound.

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Resources

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