Occupational Therapy in Oncology: A Guide for the Occupational Therapist Working on the Oncology Care Team

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OCCUPATIONAL THERAPY IN ONCOLOGY: A GUIDE FOR THE
OCCUPATIONAL THERAPIST WORKING ON THE ONCOLOGY CARE TEAM

by

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This Scholarly Project Paper, submitted by Kaitlyn Radi & Anna Schumacher 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.

Dr. Sonia Zimmerman
Faculty Advisor

December 18th 2013
Date
PERMISSION

Title Occupational Therapy in Oncology: A guide for the occupational therapist working on the oncology care team

Department Occupational Therapy

Degree Master's of Occupational Therapy

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CHAPTER II
LITERATURE REVIEW

Cancer Definition

"Cancer refers to any one of a large number of diseases characterized by the development of abnormal cells that divide uncontrollably and have the ability to infiltrate and destroy normal body tissue" (Mayo Clinic, 2013, para. 1). Although cancer is the second leading cause of death in the United States (Mayo Clinic, 2013, para. 2), the number of survivors in the United States has increased from 3 million to 9.8 million survivors since 1972 to 2001 (CDC, 2001) and increased to 11.7 million cancer survivors by 2007 (CDC, 2011). More than one million people lived for 25 years or more after being diagnosed in 2007 (CDC, 2011). The largest groups of cancer survivors include breast cancer at 22 percent of the U.S. population, prostate cancer at 19 percent, followed by colorectal cancer at 10 percent. However, of the 11.7 million survivors, 7 million were 65 years or older (CDC, 2011). Due to the capability to detect cancer earlier, treatment effectiveness, and ability to more accurately diagnose cancer, the number of patients being diagnosed with cancer is increasing (CDC, 2012). Better after diagnosis follow-up cancer care and an aging population in the United States have also contributed to this number.

The Center for Disease Control and Prevention (2012) suggests that in order to continue improvement in healthcare regarding cancer treatment, certain strategies must be implemented. These strategies include evidence-based community interventions,
developing research projects that involve minority groups, continued research that studies interventions effective in reducing cancer inconsistencies in healthcare, and using media and channels as a marketing outlet (CDC, 2012). Cancer has an impact on many people in the United States and a growing number are continuing to live despite the effects of the disease.

**Impact of Cancer Process**

**Psychological Effects**

Among cancer survivors, psychological and physical symptoms occur in relation to the disease itself and the treatment. Due to the severe influence cancer has on a patient’s quality of life, psychological aspects have become increasingly examined aspects in cancer research (Laoutidis & Mathiak, 2013). According to Mallinson, Cella, Cashy, and Holzner (2006) patients with cancer often endure symptoms of pain, cognitive deficits, and anxiety or depression leading to impairments in social functioning. As chemotherapy treatment continues and cancer treatment decreases, cognitive performance continues to decline (Collins, MacKenzie, Tasca, Scherling, & Smith, 2012). Patients may endure body image problems, depression, anxiety, cognitive, and perceptual deficits (Vockins, 2004). In addition, stress and strain related to poor finances due to cancer treatments is linked with an increased risk of severe depression and anxiety (Sharp, Carsin, & Timmons, 2012). Lemoignan, Chasen, and Bhargava (2010) reveal that patients with cancer may also face fear of reoccurrence, infertility, and family/caregiver distress. Toxicity of cancer treatments largely contributes to a decline in a person’s neurological function (Minisini et al., 2008). Psychological effects are a large part of the cancer experience and continue to change and/or increase over time.
Physical effects

In addition to psychological effects, treatments for cancer are inevitably accompanied by physical side effects. These include nausea, vomiting, hair loss, fatigue, pain, poor appetite, stomach swelling, loss of bowel control (Cobeanu, 2013; Price et al., 2013). Another study has indicated that chemotherapy-induced anemia can inadvertently cause decreased energy and activity levels, weakness, fatigue, and cardiac ischemia (Kleinman et al., 2011). Ness et al. (2008) indicates that 18.1 percent of adult survivors with cancer reported physical impairments. Most common physical cancer-related problems, according to Penfold (1996), include neurological deficits (hemiplegia, loss of coordination), paraplegia/quadriplegia from spinal malignancy, loss of limb or part from amputation, pathological fractures, shortness of breath, fatigue, lymphedema, auditory and visual disturbances, and pain (Penfold, 1996). Furthermore, Vockins (2004) reports that patients may experience generalized weakness, neurological/sensory deficits, radiation-induced brachial plexopathy, pain, fatigue, paraplegia, pathological fracture, and peripheral neuropathy, which in turn affect the patient’s ability to participate in occupations. Through review of cancer symptoms and effects of cancer treatment, physical impacts on a patient are both prominent and diverse.

Levels of Care

Within the specialty area of oncology, the levels of care most commonly observed include primary care, oncology specialist care, palliative care, and living with cancer care. The goals of intervention especially for intervention, are different for each level and reflect the experience of the patient with cancer and his or her needs.
Primary Care

"Primary care is the level of a health services system that provides entry into the system for all new needs and problems, provides person-focused (not disease-oriented) care over time, provides care for all but very uncommon or unusual conditions, and coordinates or integrates care, regardless of where the care is delivered and who provides it" (John Hopkins University, 2013, para. 1).

According to Smith and Toonen (2007) throughout the process of primary care in oncology, the primary care physician fulfills various roles. These include informing the patient of what his/her diagnoses is, helping to make decisions relating to treatment, offering psychological support, treating co-morbidities, providing appropriate preventive care, as well as being cognizant of and working with professionals during ongoing care of cancer treatment (Smith & Toonen, 2007).

Despite a patient’s prognosis, therapeutic procedures can change a patient’s life experiences (Edge, Page, Balch, Fleming, & Morrow, 2002). Initially, a patient is assessed using different screening tools, including technology (Edge et al., 2002; Rimer, Schildkraut, & Hiatt, 2000). According to Lichter (2000), during primary care an oncologist considers the type of cancer, the typical prognosis of that particular cancer, and treatment options available. These considerations enable an oncologist to choose the best treatment route for the patient (Lichter, 2000). The primary care team members are not specifically recognized in the research literature. Limited research is available pertaining to primary care, however what literature there is available emphasizes the relationship between the primary care provider, the patient, and oncologists.
Part of the relationship between healthcare providers and patients involves communication. In Mao et al.'s (2009) cross-sectional survey of 286 patients experiencing breast cancer, survivors were asked a series of questions regarding their satisfaction with primary care physicians and their oncologists in providing helpful follow-up care throughout the patient's span of having cancer. Primary care physicians were ranked by breast cancer survivors according to the following: communication with oncologist; knowledge about appropriate follow-up care for breast cancer survivors; awareness of potential long term effects of breast cancer treatment; skills associated with diagnosing and treating symptoms of cancer and cancer therapy; attention to emotional well-being; helping patients to live healthier in regards to diet, exercise, and weight; and sensitivity to the patient's needs as a whole person (Mao et al., 2009). Patient-primary care physician contact varied considerably with annual visits and two to four times annually the most reported frequencies. Smaller numbers of patients reported seeing the primary physician monthly or between five and eleven times per year (Mao et al., 2009). The breast cancer survivors in this study indicated that their average overall rating of their primary care experience was 65 out of 100. The lowest rated item in the survey was inter-specialty communication, indicating that they felt their oncologists and primary physicians had poor communication regarding their care (Mao et al., 2009). Mao et al. (2009) concluded that seeking information from patients with breast cancer to form interventions and follow-up care will be necessary due to changing needs of patients with cancer throughout their journey through life with cancer. In a randomized control trial conducted by Grunfeld et al. (1999), 296 patients with breast cancer indicated that communication was not satisfactory between patients and their primary provider. Patients
felt that their doctor should listen more to what they said. Patients indicated they like to be involved in making decisions about their treatment plan in addition to having better management of psychosocial issues if they were given the opportunity for better communication during their cancer treatment/care (Grunfeld et al., 1999).

**Oncology Specialist Care**

There are numerous treatment options for patients living with cancer. Chemotherapy is a commonly used treatment option for patients who are considered high risk for cancer returning following surgical removal (Perry, Anderson, & Dunehower, 2000). Chemotherapy is most often used for regulating advanced or metastatic disease. This treatment is described as either adjuvant or neoadjuvant. Adjuvant chemotherapy is a treatment administered for systemic disease before the cancer spreads, and even before surgery. Neoadjuvant chemotherapy is utilized early on in the treatment process when micrometastases are present. There are also treatments that are taken intravenously or orally. These can include single agent therapy and chemohormonal therapy (Perry et al., 2000). Single agent therapies are pharmaceuticals that are available for certain types of cancers. Also, chemohormonal therapy may be a treatment option for patients with acute leukemias. According to Perry et al. (2000) this type of therapy involves chemotherapy in addition to hormones that are delivered intravenously.

In some cases, surgery can be used to remove tumors in addition to chemotherapy treatment (Perry et al., 2000). An alternative approach to surgery is radiation and can be equally effective. Wide varieties of malignancy are treated commonly with radiotherapy (Connell, Mariel, & Hellman, 2000). Radiation as a treatment for patients includes tumor radiobiology or normal tissue radiobiology (Lichter, 2000). Radiation causes an
interaction that occurs between cells, tissues, and radiation exposure yielding a biological change, leading to cell death or damage.

If radiation or chemotherapy proves ineffective for a patient with cancer, gene therapy is an alternate strategy that may be considered (Vose et al., 2000; Hwu, 2000). Malignant diseases can be treated by bone marrow transplants, a form of gene therapy. This type of procedure returns the cells back to normal functioning through infusion of stem cells in bone marrow. Additionally, gene therapy transfer techniques aid in improving the immune system’s response to cancer.

After traditional treatment, symptoms of cancer, such as pain, fatigue, weakness, anorexia, dry mouth, constipation, early satiety, dyspnea, weight loss, and insomnia may continue to persist (Smith & Toonen, 2007). Various alternative medicines are available and may aid in relieving symptoms. These alternative medicines include massage, aromatherapy, prayer, acupuncture, imagery, hypnosis, biofeedback, meditation, journaling, music therapy, therapeutic touch, vitamins and herbs. Due to the relaxing elements of these techniques, alternative medicines are used adjunctively with traditional treatments throughout various stages of treatment (Smith & Toonen, 2007).

**Palliative care**

Due to the physical and psychological components caused by cancer and cancer treatment, palliative care is a prominent area of cancer care. Palliative care

"is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment
and treatment of pain and other problems, physical, psychosocial and spiritual”
(The World Health Organization, 2013, para. 1).

According to Schneider and Walter (2007), treatment should address grief and loss prior to death and recognize those patients who are at high risk for not being able to grieve well. In addition to addressing grief and coping skills, psychosocial and spiritual aspects of patients and their family members/caregivers should be taken into consideration throughout palliative care (Schneider & Walter, 2007).

Research indicates relaxation techniques, coping strategies (mindfulness therapy and acceptance/commitment therapy), consultation, patient and family coping are all part of palliative care in cancer treatment. Miller and Hopkinson’s (2008) retrospective audit identified relaxation training as an effective method to use in conjunction with other therapies to reduce stress in patients with breast cancer in the oncology and palliative setting. Relaxation training includes techniques such as, induction script, progressive muscle relaxation, passive neuromuscular relaxation, autosuggestion, guided visualization, and unguided visualization. The properties of an induction script involve therapist instruction related to basic muscle awareness and breathing patterns. Progressive muscle relaxation incorporates the tensing and relaxing of separate muscle groups in a distinct order to facilitate a relaxed state. Passive neuromuscular relaxation asks the patient to focus on the thought of muscle tension, but not actually tensing muscles. The use of autosuggestion engages the patient in strategies to train the mind to provide suggestion such as sensing the limbs as heavy and warm to train the mind to listen to verbal instructions. The use of guided visualization involves the patient imagining a pleasant or safe environment with verbal assistance from the therapist.
progressing to unguided visualization focuses on similar environments independently (Miller & Hopkinson, 2008).

Results of a study designed to identify strategies used to increase minimization of symptoms (pain, anorexia, abdominal swelling and nausea) and decrease physical burden, as well as, hopelessness/helplessness suggested that coping strategies such as mindfulness-based interventions and acceptance/commitment therapy be utilized (Price et al., 2013). In a randomized control trial, mindfulness-based interventions were proven to be effective in reducing depression, anxiety, stress, and improving quality of life (Foley, Baillie, Huxter, Price & Sinclair, 2010). Acceptance/commitment therapy, a cognitive approach that explicitly assesses emotions and acceptance was found to reduce psychological distress, increase quality of life, and decrease cognitive-emotional avoidance (Rost, Wilson, Buchanan, Hildebrandt, & Mutch, 2012).

In Ford, Catt, Chalmers, and Fallowfield’s (2012) meta-analysis of both qualitative and quantitative literature, the researchers found a decline in cognitive function and other neurological effects as brain tumors worsened impacting the patient’s ability to participate in daily life activities. Also, a theme of a lack of communication between patients and their primary physician regarding diagnoses, prognosis, and alternative versus traditional treatment options was found. Nearly all of the participants reported that they desired their healthcare provider to be more compassionate and empathetic, as well as to provide positive feedback to families and the patient. Ford et al. (2012) similarly found that communication is key to relieve anxiety because the patients were able to predict their treatment progress and therefore experience a higher level of control. In addition to communication between the patient and the healthcare provider,
clinicians also provide consultation services to the patient. In a randomized control trial of early palliative care, Jacobsen et al. (2011) discovered that palliative care clinicians often provide consultation to patients regarding symptom management, patient and family coping, illness understanding and education (Jacobsen et al., 2011).

**Living with Cancer**

The Center for Disease Control and Prevention (2009) identified the top ten cancers affecting both men and women living with cancer in the United States. These types of cancers are as following from most to least prevalent: prostate, female breast, lung and bronchus, colon and rectum, corpus and uterus, urinary, bladder, melanomas of the skin, non-Hodgkins lymphoma, kidney and renal pelvis, and thyroid. Ness et al. (2008) states that patients diagnosed with cancer are living longer; some survivors are likely to have limitations in work and social participation because of physical and cognitive symptoms, leading to financial and relational distress.

The long-term effects of both cancer and cancer treatment can hinder the patient’s ability to return to normal living (Short, Vosey, & Tuncelli, 2005). Despite prominent barriers related to the effects of having cancer or receiving cancer treatment, return to normal living is a clear desire of the cancer survivor (DeSanto-Madeya, Bauer-Wu, & Gross, 2007; de Boer et al., 2011). A number of qualitative studies provide insight into the challenges of returning to normal living (la Cour, Nordell, & Josephsson, 2008; DeSanto-Madeya et al., 2007; Strang, 1992).

In a qualitative study of 45 adults living with cancer, la Cour et al. (2008) found that participants’ daily lives centered around self-care, house work, and leisure. Social relationships were limited to immediate family and close friends, although there was a
desire to participate in social relations with other people. The participants reported experiencing physical discomfort throughout the day which affected the activities they chose or were able to participate in (la Cour et al., 2008).

la Cour et al. (2008) discussed the need and desire for familiar routines, including valued activities such as work. One participant shared that she valued structure and routine in her day, which provided a sense of commitment similar to work. Implementation of support services pertaining to developing and maintaining routines for people with advanced cancer is suggested (la Cour et al., 2008). Similarly, DeSanto-Madeya et al. (2007) conducted a qualitative study of 84 women diagnosed with breast cancer and identified a recurring desire to maintain normal routines. The participants reported that daily life included cancer-care activities, care of others, diversion, household, rest, phone, self-care, social visits, time with family, and work. However, due to the effects of cancer, participants reported experiencing limitations requiring them often slow down or pace their activities (DeSanto-Madeya et al., 2007).

In a qualitative study of 44 males and 49 females living with various types of cancer, the frequency of social activity, such as, hobbies or seeing friends, was found to be decreased due to the intensity of pain (Strang, 1992). Patients who were experiencing pain visited friends less frequently compared to patients who were not experiencing pain; some patients stated that they isolated themselves from friends completely. When these patients did see friends, visits were not nearly as long as usual due to reported decrease in ability to concentrate and weakness (Strang, 1992).

Not only does pain disrupt engagement in life experiences, but secondary physical side effects do as well. Resulting social and psychological problems include
distress, depression, anxiety, role functioning, lack of social support, and disability (Heiney & McWayne, 2005). Strang (1992) reported family roles had shifted since the patient living with cancer could not partake in social activities in his or her usual way. For example, patients were having difficulty cleaning or completing household tasks. As a result, a woman’s family role as a mother shifted because now help was needed from other family members such as a husband or children to complete tasks (Strang, 1992). A majority of patients also reported that pain made them tired, and in turn meant needing more help from family members, further affecting performance of activities supporting family roles.

In terms of work-related challenges, differences appear to be related to the type of cancer experienced. Hubbard, Gray, Ayansina, Evans, and Kyle, (2013) found that 61.1 percent of women diagnosed with breast cancer were working at the time they were diagnosed. Bradley, Neumark, Luo, and Schenk (2007) studied women with breast cancer and men with prostate cancer and found that approximately 20 percent of both populations indicated that treatments negatively impacted their ability to work. Persons with cognitive and physical deficits specifically reported greater levels of interruption of daily life with increased financial insecurity than patients diagnosed with cancer who were unemployed (Bradley et al., 2007). Similarly, qualitative research data on the experiences of patients who were diagnosed with leukemia showed that cancer had significantly decreased productivity and their ability to keep up with financial necessities independently (Adejoh, Temilola, & Olayiwola, 2013). Hewitt, Breen, and Devesa’s (1999) found that living with cancer resulted in financial dilemmas, problems with insurance coverage, and limited employment options. Twenty percent of participants
indicated that these economic issues are present from the time of diagnoses and persist throughout the rest of their lifetime (Hewitt et al., 1999). Ultimately, the effects of cancer and cancer treatment impact various areas of a patient living with cancer’s life.

Assessments

In the specialty area of oncology, assessments have been employed to evaluate various aspects of a patient’s life including physical, quality of life (QOL), cognitive, and psychological aspects. Physical assessments are used to evaluate the symptoms patients in oncology endure. In order to examine the patient’s ability to function daily and identify areas of importance in one’s life, quality of life assessments are utilized. Cognitive assessments are used to determine of the level mental functioning. Finally, psychological assessments are used to evaluate the emotional component of the patient. Table 1.
presents results of a literature review of interdisciplinary tools which may be used to evaluate the physical, quality of life, cognitive, and psychological components of a person’s life.

Table 1. Oncology-Based Assessments

<table>
<thead>
<tr>
<th>ASSESSMENT (Author)</th>
<th>TYPE</th>
<th>PURPOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brief Fatigue Inventory (The University of Texas M. D. Anderson Cancer Center)</td>
<td>Physical</td>
<td>Determines the level of cancer-related fatigue and how it impacts daily living (Hatchett &amp; Beller, 2012).</td>
</tr>
<tr>
<td>Functional Assessment of Chronic Illness Therapy-Fatigue Scale (FACIT-Fatigue) (Cella)</td>
<td>Physical</td>
<td>Assesses the specific functional and physical aspects of fatigue associated with cancer diagnosis (Hubbard et al., 2013)</td>
</tr>
<tr>
<td>Rating of Perceived Exertion (RPE), (Borg)</td>
<td>Physical</td>
<td>Assesses how patients with cancer feel after physical activity (Hatchett &amp; Beller, 2012)</td>
</tr>
<tr>
<td>Rotterdam Symptom Checklist (de Haes, Olschewski, Fayers,)</td>
<td>Physical</td>
<td>Examines symptoms in cancer patients that apply to the patient. (Skerman, Yates &amp; Battistutta, 2012).</td>
</tr>
<tr>
<td>Visser, Cull, Hopwood, &amp; Sanderman</td>
<td>Physical</td>
<td>Examines the physical symptoms experienced by patients with cancer overtime (Locke et al., 2007).</td>
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<tr>
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<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Symptom Distress Scale (SDS)</td>
<td>Physical/</td>
<td>Clinically assesses symptoms. (Lindblad, Ring, Glimelius, &amp; Hansson, 2002)</td>
</tr>
<tr>
<td>(McCorkle &amp; Young)</td>
<td>QOL</td>
<td></td>
</tr>
<tr>
<td>The Memorial Symptom Assessment Scale (Portenoy, Thaler, Kornblith, Lepore, Friedlander-Klar, &amp; Kiyasu)</td>
<td>QOL</td>
<td></td>
</tr>
<tr>
<td>Disability Rating Scale (DRS)</td>
<td>QOL</td>
<td>Deciphers the levels of disability relating to employment, functioning, cognitive abilities for ADLs, eye opening, motor response, and communication ability (Huang, Wartella, and Kreutzer, 2001).</td>
</tr>
<tr>
<td>(Rappaport)</td>
<td></td>
<td></td>
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<tr>
<td>East Cooperative Oncology</td>
<td>QOL</td>
<td>Rate the ability to function in daily life of patients diagnosed with cancer in order to assess their QOL (Locke et al., 2007; Taylor &amp; Currow, 2013).</td>
</tr>
<tr>
<td>Group Performance Status scale (ECOG)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Oken, Creech, Tormey, Horton, Davis, McFadden, Carbone)</td>
<td></td>
<td></td>
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<tr>
<td>Evaluation of Individual Quality of Life (SEIQoL)</td>
<td>QOL</td>
<td>Examines the quality of life (QOL) and allows the patient to identify important areas. (Lindblad et al., 2002)</td>
</tr>
<tr>
<td>(McGee, O’Boyle, Hickey, O’Malley, Joyce)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functional Assessment of Cancer Therapy-Brain (FACT-B) (Cella)</td>
<td>QOL</td>
<td>Examines the physical, social, emotional, and functional aspects that impact QOL (Locke et al., 2007).</td>
</tr>
<tr>
<td>Functional Independence Measure (FIM) (Uniform Data Services for Medical Rehabilitation)</td>
<td>QOL</td>
<td>Evaluates self-care, continence, mobility, transfers, communication, and cognition and the patient’s level of independence in each area (Huang et al., 2001).</td>
</tr>
<tr>
<td>Karnofsky Performance Status Scale (KPS) (Karnofsky &amp; Burchenal)</td>
<td>QOL</td>
<td>Measures the patient’s ability to function (Huang et al., 2001).</td>
</tr>
<tr>
<td>Patient Generated Index (PGI)</td>
<td>QOL</td>
<td>Evaluates the patient’s QOL and determine the most important areas to the patient (Lindblad et al., 2002)</td>
</tr>
<tr>
<td>(Ruta, Garratt, Leng, Russell,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrument</td>
<td>Domain</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
<td>--------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Quality of Life Index for Cancer (Ferrans &amp; Powers)</td>
<td>QOL</td>
<td>Examines satisfaction and importance in various areas of life (Lindblad et al., 2002).</td>
</tr>
<tr>
<td>Valued Activity Inventory for Adults with Cancer (VAI-AC) (Lyons, Hegel, Hull, Li, Balan, &amp; Bartels)</td>
<td>QOL</td>
<td>Assesses physical and mental function, symptom intensity, and mood (Lyons, Hegel, Hull, Li, Balan, &amp; Bartels, 2012).</td>
</tr>
<tr>
<td>Cambridge Cognitive Examination (CAMCOG) (Roth et al.)</td>
<td>Cognitive</td>
<td>Assesses orientation, language, memory, praxis, calculation, abstract thinking and perception (Minisini et al., 2008).</td>
</tr>
<tr>
<td>Mini Mental State Exam (Folstein et al.)</td>
<td>Cognitive</td>
<td>Screen for cognitive issues in patients with cancers (Locke et al., 2007).</td>
</tr>
<tr>
<td>Montreal Cognitive Assessment (MoCA) (Nasreddine et al.)</td>
<td>Cognitive</td>
<td>Screen for mild cognitive impairments, including small changes (Baxter, Dulworth, &amp; Smith, 2011).</td>
</tr>
<tr>
<td>Palliative Performance Scale (PPS) (Anderson, Downing, &amp; Hill)</td>
<td>Cognitive</td>
<td>Focuses on decision making and communication abilities in palliative care settings (Ma et al., 2010).</td>
</tr>
<tr>
<td>WAIS Digit Symbol Substitution (Wechsler)</td>
<td>Cognitive</td>
<td>Measures the processing speed in older adults living with cancer (Kvale et al., 2010).</td>
</tr>
<tr>
<td>Beck Depression Inventory-II (BDI-II) (Beck, Steer, &amp; Brown)</td>
<td>Psychological</td>
<td>Assess the level of depression in patients with cancer (Hatchett &amp; Beller, 2012).</td>
</tr>
<tr>
<td>Depression Anxiety Stress Scales-21 (Lovibond &amp; Lovibond)</td>
<td>Psychological</td>
<td>Analyzes the psychological well being of patients living with cancer (Sharp et al., 2013).</td>
</tr>
<tr>
<td>Profile of Mood States-Short Form (POMS-SF) (McNair et al.)</td>
<td>Psychological</td>
<td>Rates the extent the patient feels in each of the following categories: fatigue/inertia, tension/anxiety, vigor/activity, depression/dejection, confusion/bewilderment, and anger/hostility (Locke et al., 2007)</td>
</tr>
<tr>
<td>The Center for Epidemiological Studies-Depression (Radloff)</td>
<td>Psychological</td>
<td>Assess symptom of depression in older cancer survivors (Kvale et al., 2010).</td>
</tr>
</tbody>
</table>
Interventions

Interventions related to patients enduring cancer consist of psychological and physical approaches that either assist with specific occupations such as work or suppress symptoms such as depression and anxiety, increasing energy level, or quality of life in cancer survivors.

Psychological Interventions

Studies have found psychological interventions such as cognitive behavioral therapy, psychoeducation, stress management, and supportive groups are effective for persons with cancer (Classen et al., 2001, Fawzy et al., 1990, Fukui, Koike, Ooba, & Uchitomi, 2003; Richardson, Shelton, Krialeo, & Levine, 1990). According to a study by Andrykowski et al. (1996) evaluating psychological issues that patients with cancer face, psychological interventions are important to consider for patients with cancer to prevent continuing issues related to emotional stress, fatigue, decrease in energy level. In a randomized control trial conducted by Classen et al. (2001), 125 women with metastatic breast cancer were randomly assigned to either a control or intervention group. Sixty-one participants were in the control group, where no intervention was given to patients and 64 participants were placed in the intervention group where participants participated in weekly supportive expressive group for one year. Using survey outcome measures relating to quality of life and event scales, the results indicated that supportive expressive group therapy is effective for patients who have metastatic breast cancer due to the significant reduction of distress among participants (Classen et al, 2001).

Fawzy et al., (1990) studied patients diagnosed with malignant melanoma that were given interventions that included health education, development of problem-solving
skills, stress management, and psychological support. The interventions were found to improve patients psychological health compared to a control group who had no psychological interventions. The experimental group also included active-behavioral and active-cognitive coping mechanisms. Patients revealed they experienced less fatigue, confusion, and depression (Fawzy et al., 1990). Similarly, in Fukui et al.’s (2003) qualitative study of Japanese women with breast cancer, results indicated interventions that included health education, development of problem-solving skills, stress management, and psychological support were also beneficial.

Several types of group therapy have been identified in the literature. Research indicates patients who are living with cancer benefit from support groups (Bottomeley, Hunton, Roberts, Jones, & Bradley, 1997; Edelman, Craig, & Kidman, 2000). Support groups for patients with cancers have been found to increase the quality of life for patients newly diagnosed with cancer (Edelman et al., 2000). In a review of randomized control trials regarding psychological interventions, Greer (2002) identified the effects of psychological interventions, such as cognitive behavioral therapy, psychoeducational therapy, and supportive-expressive group therapy as beneficial. For patients living with cancer, the majority of studies indicated quality of life had increased due to the impact of psychological interventions (Greer, 2002). Edelman and Kidman (1999) and Edelman, Lemon, Bell, and Kidman (1999) both examined the effectiveness of cognitive behavioral therapy groups for patients with cancer to improve overall quality of life. The results of both studies supported the use of cognitive behavioral therapy groups (Edelman & Kidman, 1999; Edelman et al., 1999).
Physical Interventions

Physical interventions for patients with cancer have been shown to improve overall psychological health and offset symptoms that coincide with cancer and cancer treatment. In randomized control trial of the effects of home-based activity interventions for breast cancer patients, Pinto, Frierson, Rabin, Trunzo, & Marcus, (2005) found that women in the intervention group had decreased fatigue, improved mood and body image self-esteem, and higher energy, and increased overall psychological well being. The home-based activity intervention included exercising for ten minutes or less for at least two days during the week; the goals were increasingly graded over the 12-week intervention program where participants increased workout time to 30 minutes of exercising a day for 5 days out of the week. The program encouraged use of moderate-intensity activities at 55 to 65 percent of the participants’ maximum heart rate. Activities that were considered moderate-intensity in this program were fast walking, biking, swimming, or using home exercise equipment (Pinto, Frierson, Rabin, Trunzo, & Marcus, 2005).

In a systematic review of 34 randomized control trials, Knols, Aaronson, Uebelhart, Fransen, and Audefemakpe (2005) found that patients with cancer benefited from physical exercise during and after cancer treatment. Overall, physical exercise improved psychological well-being in addition to quality of life because participants found they had higher levels of energy, changed mood, and improved self-esteem. Similarly, Stevinson, Lawlor, & Fox’s (2004) systematic review of 33 randomized control trials analyzing effects of physical interventions on patients experiencing cancer, found that exercise positively affected patients with cancer. Exercise suppressed
symptoms of fatigue, increased physical function, and increased quality of life (Stevinson et al., 2004).

In a review of 26 studies that involved cardiovascular training, resistance, and flexibility training, as well as resistance training alone, cancer treatment side effects were successfully offset by resistance exercise interventions. Exercise helped patients to have improved quality of life and physical function (Galvao & Newton, 2005). The majority of studies reviewing effects of physical interventions reveal that quality of life is increased, fatigue is decreased, and positive psychological outcomes experienced.

**Work-related interventions**

Cancer diagnoses in working age patients are becoming more common, with nearly half of the adult cancer survivors being under 65 years old (Short et al., 2005). Multiple researchers (Hubbard et al., 2013; Baines, Yarker, Amir, Wynn, & Munir, 2012; de Boer et al., 2011; Thijs et al., 2012) have noted work-related interventions including high-intensity physical exercise, psychological interventions, medical, multidisciplinary, and vocational interventions influence return-to-work outcomes. de Boer et al. (2011) conducted a systematic review of randomized control trials to determine the most effective return-to-work interventions for patients with cancer. Cancer survivors reported work as a necessary area of life to return to in hopes of regaining a normal life (de Boer et al., 2011). Patients with cancer revealed that it was helpful to have support and contact with coworkers and work supervisors, advice from occupational physicians and general physicians, and an understanding of the long-term symptoms of cancer, such as cognitive deficits and fatigue. Work supervisors revealed that it was essential to have communication with stakeholders, work accommodations for the patient with cancer, and
knowledge of the occupational physician’s role in the return to work process (de Boer et al., 2011). de Boer et al. (2011) found that in effort to prevent further barriers in the workplace for patients with cancer, collaborating with the employer in return-to-work interventions was beneficial. In their randomized control trial study, Thijs et al. (2012) reported cancer patients believe high-intensity physical training to be beneficial for patients with cancer who are currently working. Patients in the intervention group showed a significant increase in working hours per week (Thijs et al., 2012). Baines et al. (2012) interviewed healthcare providers including occupational health physicians, consultant surgeons, nurses, oncologists, general health practitioners, and occupational health advisors regarding giving of work-related advice. Results suggested that providers inform patients about work abilities and sustainability, such as formal training of work-related support in early stages of treatment and how to be successful in the transition from being a patient to a survivor, so that the patient can make informed decisions (Baines et al., 2012).

Hubbard et al. (2013) conducted a randomized control trial to determine the feasibility of a vocational rehabilitation program for women with breast cancer. Returning to work after being diagnosed with cancer was crucial for survivors because having steady income was directly linked to improved quality of life. Furthermore, returning to work was seen as a way of regaining a sense of normality, self-concept, and identity. Strong organizational support and informal personal and emotional support from co-workers resulted in positive return-to-work experiences for cancer survivors (Hubbard et al., 2013). In another randomized controlled trial, Thijs et al. (2012) found high-intensity physical training to be useful for working patients with cancers. Patients in the
intervention group showed significantly less reduction in working hours per week. In the same study, patients with breast cancer were encouraged to return to work and become socially active, and were counseled by oncology nurses who specialized in psychological aspects of the cancer care. Greater social recovery, return to work and adaptation to breast loss resulted from these nurse-led sessions. Patients who performed physical training supplemented by coping skills training provided by an oncology nurse had even greater return-to-work outcomes than those receiving psychological care alone (Thijs et al., 2012). Return-to-work interventions can include many aspects from physical activities to psychological and can be useful for patients living with cancer.

Role of Occupational Therapy

Occupational therapy has the potential to play an influential role in cancer care throughout a patient’s treatment and progression of the disease (Costa & Othero, 2012; American Occupational Therapy Association (AOTA), 2009; National Council for Hospice and Specialist Palliative Care Services (NCHSPC), 2000; Penfold, 1996; Peranich, Reynolds, O’Brien, Bosch, & Cranfill, 2010; Varon & Loveland, 2011). The occupational therapist follows the occupational therapy process: evaluation, intervention and outcomes (AOTA, 2009). The use of assessments to assist with both evaluation and measuring outcomes have been noted in several research studies relating to patients with cancers.

Assessments

Limited research exists regarding assessments that occupational therapist specifically utilized in cancer care. Descriptions of assessments utilized are presented in broad terms. According to Costa and Othero (2012), assessments for patients who have
cancer should analyze all areas of the person’s life, influence of disease on functional ability, and the patient’s goals for themselves. Penfold (1996) suggests that home assessments appear in the treatment plan of a patient with cancer to address safety and optimal functional performance within the patient’s home. Overall, assessments conducted by occupational therapists in regard to this population include general, non-specific oncology assessments in addition to home evaluations which are also not explicitly unique to this population. Table 2 presents a listing of assessments identified in the occupational therapy literature as used or developed by occupational therapists and appropriate to oncology care.

Table 2. Occupational Therapy Assessments for Oncology

<table>
<thead>
<tr>
<th>ASSESSMENT (Author)</th>
<th>TYPE</th>
<th>PURPOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modified Barthel Index (Shah, Vanclay &amp; Cooper)</td>
<td>Occupational</td>
<td>Assesses the extent a patient can function independently and has mobility to complete activities of daily living (Taylor &amp; Currow, 2003)</td>
</tr>
<tr>
<td>Modified version of the Lawton Instrumental Activities of Daily Living Scale (MIADL) (Abrams, Beers &amp; Berkow)</td>
<td>Occupational</td>
<td>Assesses the ability to perform ADLs and IADLs of those patients diagnosed with cancer (Taylor &amp; Currow, 2003)</td>
</tr>
<tr>
<td>Screening ToC (Cooper)</td>
<td>Occupational</td>
<td>Examines areas of occupation including work, leisure, driving and ADLs specifically for patients with cancers (Taylor &amp; Currow, 2003)</td>
</tr>
<tr>
<td>Timed Instrumental Activities of Daily Living (Owesley, Mc3win, Sloane, Stalvey, &amp; Wells)</td>
<td>Occupational</td>
<td>Assesses performance skills in IADLs in older adults with cancer (Kvale et al., 2010)</td>
</tr>
<tr>
<td>Home Assessment (OT)</td>
<td>Physical</td>
<td>Assesses for safety risks in home environment (Hoy, Twigg, &amp; Pearson, 2008)</td>
</tr>
</tbody>
</table>
Interventions

Occupational therapists implement treatments for patients who are living with cancer. Patients with cancer endure episodes of stress, so re-establishing a routine in effort to return to normal living at home is necessary to include in treatment (Lloyd, 1989). Occupational therapists treating a patient with cancer may come across two types of problems, either cancer-related or treatment related (Sutton, 1992). Treatment-related problems that a patient may endure and often seen by occupational therapists, may be peripheral neuropathy or cerebral edema caused by chemotherapy. Cancer-related issues of concern to the occupational therapist in intervention planning for a patient with cancer include neurological problems causing loss of coordination, paraplegia/quadriplegia, loss of limb due to metastases, pathological fractures, shortness of breath, general weakness, lymphodema, auditory or visual impairments, pain, or cognitive/perceptual problems all depending on where tumors may reside or what type of cancer the patient has (Sutton, 1992).

A British occupational therapist, Penfold (1996), presented a proposed role of occupational therapy in oncology. The role of occupational therapy in cancer care is described as comprehensive, taking a holistic view of patients, and aiding in physical, psychological and social aspects of the patient’s daily life. Penfold (1996) categorized two types of problems that require occupational therapy intervention-- cancer-related and treatment-related. Occupational therapy services in cancer care are recommended to encourage the patient to live realistically with cancer, by considering the patient’s needs and desires. The patient, along with their family, should be involved in the treatment planning to achieve client-centeredness and to empower the patient. Throughout the
duration of treatment, occupational therapists should pay careful attention to the fluctuations in the patient’s current condition because modification to treatment plan may be necessary. With the presence of one or both of these problems during treatment, occupational therapists treat functional deficits when treating a patient with cancer (Penfold, 1996).

According to Penfold (1996), areas of function most commonly addressed by occupational therapists working in oncology include personal care, work duties, role-related tasks, leisure, and play. Assessments should examine daily habits and routines, effects of cancer on function, and the patient’s priorities for treatment. The treatment plan will vary according to the stage the patient is in. Occupational therapists are encouraged to collaborate and communicate effectively with other healthcare professions in order to make certain that patients and their families have adequate support necessary to be successful at home. Occupational therapy in cancer care was expected to expand due to increasing diagnoses of cancer and increase in the amount of time patients were living with cancer (Penfold, 1996).

More recently, in a randomized control trial conducted by Yuen, Mitcham, and Morgan (2006), 12 post-therapy cancer survivors were assigned to either an energy conservation group implemented by an occupational therapist or usual care. In the study, energy conservation techniques were found to be effective in managing patient’s fatigue. Energy conservation is an aspect of intervention that occupational therapists may also want to consider (Yuen, Mitcham, & Morgan, 2006).
Primary Care

Although there are no reports of primary care occupational therapists specializing in oncology in the occupational therapy literature, there is a need for occupational therapists in primary care teams (Muir, 2012). Although Muir (2012) does not address oncology primary care specifically, the concepts and ideas introduced are believed to be applicable to this specialty area of practice. The occupational therapist’s holistic approach offers the ability to develop a strong patient-therapist relationship wherein feel they are respected, understood, and shown compassion, and therefore more likely to be active participants in the change process (Morris, 2011; Muir 2012). Since this is where the health care plan typically begins, establishing the early support and rapport with a patient can benefit health rather than seeing the patient when he or she has an unstoppable/inecurable illness or accident (Muir, 2012).

It is difficult for primary care physicians to meet all the needs a patient may have providing an opportunity for occupational therapists to become part of the primary care team (Muir, 2012). Occupational therapists are well-suited for this role because they are trained in cognitive, physical, social, and emotional human development. Occupational therapists are skilled in the process of activity analysis, behavior modification, lifestyle changes, promotion of health and wellness, use of adaptive equipment, and develop interventions throughout a person’s time with a disease (Muir, 2012). Occupational therapists can specifically assist the physician with interventions that encourage prevention of disease/disability or decrease the disease process, provide services to aide other healthcare professionals to deliver holistic care, and consider ways that symptoms may be affecting function or participation. Occupational therapists may be able to reduce
the amount spent in healthcare by providing home-based interventions that can be done alone or with supervision prior to referrals or further interventions. Lastly, occupational therapists can aide patients in participating in occupations through modifying or adapting activities and give group education to address pertinent issues the patient may be facing (Muir, 2012).

Mackenzie, Clemson, & Roberts (2013) describe an example of a partnership between the occupational therapist and the general practitioner working in a community setting to promote falls prevention. Challenges identified were poor communication between the general practitioner and the occupational therapist, as well as the general practitioner’s lack of awareness of occupational therapy services. Although recognized as an important addition to practice, current literature does not address clear models to facilitate an effective partnership between the practitioner and the occupational therapist (Mackenzie et al., 2013).

**Palliative care**

Hospice and palliative care are closely related in that both address end-of-life. In Benthall and Holmes (2011) identify hospice care as the primary community-based organization that assists those with end-of-life care, whereas palliative care was identified as extending to home health, assisted living facilities, skilled nursing facilities, retirement communities and hospitals. The American Occupational Therapy Association position statement on end-of-life care (2009) identified that palliative care can begin at anytime during the course of treatment and may include curative care. Contrary to the beliefs of many patients and caregivers alike, services provided during end-of-life care are reimbursable, including modifying the environment in order to facilitate participation in
daily routines, prevent injury during activities of daily living for both patients and
caregivers, and maximize functional performance to better participate in meaningful
occupations (Benthall & Holmes, 2011). In order to raise awareness of palliative care,
occupational therapists should be up-to-date with literature and current research on end-
of-life care, observe interactions between palliative care professionals to gain a better
understanding of potential team member’s awareness of occupational therapy, and
advocating to other professionals about the role of occupational therapy. By completing
these steps of increasing awareness occupational therapy and its role in palliative care
settings is promoted (Benthall & Holmes, 2011).

The AOTA (2009) position statement on the role of occupational therapy in end-
of-life care defines hospice as “a philosophy of care for individuals of any age with life-
limiting illnesses for whom further curative measures are no longer desired or
appropriate”(p.1). AOTA (2009) and the Canadian Association of Occupational Therapy
(CAOT) (2008) agree that the role of occupational therapy in hospice care is provide
symptom management and assist the patient in activities of daily living in order to
improve quality of life. Several factors impact the quality of life of patients in hospice
care such as maintaining function and occupational engagement, sense of control,
contributing to others, focusing on relationships, and spirituality (AOTA, 2009). The
occupational therapists must consider environmental, contextual, and personal factors in
evaluation of barriers to occupational performance and patient satisfaction. Also,
occupational therapists must collaborate with the patient and family to ensure that the
therapeutic process is meaningful and client-centered (AOTA, 2009).
Pizzi and Briggs (2004) described the process of occupational therapy and physical therapy in hospice settings. Hospice care values were closely related to that of occupational therapy values identified in the OT Practice Framework. The occupational therapists' role was to provide a better quality of life by extending functional ability and comfort, assist with adjustments to different aspects of life, promote and ensure safety, occupational engagement in meaningful activities, support for physical, emotional and spiritual factors regarding end-of-life (Pizzi & Briggs, 2004).

According to the National Council for Hospice and specialist Palliative Care Services (2000), occupational therapists address palliative care for patients with cancer by keeping patients as independent as possible, in order to maintain his or her quality of life. Needs of patients are assessed on an ongoing basis. Occupational therapists may assist with multiple areas of living. To address the environmental and physical needs, occupational therapists may assess wheelchair seating, provide necessary equipment for returning home, retrain patients with cancer in his or her personal/domestic activities of daily living, educating on energy conservation, complete home assessments, and splints. In terms of mental functioning, occupational therapists can provide cognitive and perceptual retraining, implementing relaxation techniques, aiding in patient's lifestyle by finding out the patient's hobbies and leisure interests, providing education and resources for caregivers of the patient enduring cancer, and aiding in psychological issues due to loss of function (NCHSPCS, 2000). The NCHSPCS (2000) identified an increasing number of occupational therapist in palliative care due to the increasing acknowledgment of helping patients living in their home.
Varon and Loveland (2011) provide additional support for occupational therapy as a prominent service in a patient’s last month of life. Occupational therapists continue to provide interventions supporting the family and the patient to assist with occupational performance, modify the patient’s home environment, provide comfort care, and planning discharge for the patient (Varon & Loveland, 2011; VanderPloeg, 2001). Since health promotion is largely missing from the palliative care setting, VanderPloeg (2001) suggests that occupational therapists also assume this role in palliative care, extending the use of clinical and professional reasoning skills (VanderPloeg, 2001).

Several qualitative studies have been conducted in recent years to better understand the provision of occupational therapy services for persons in terminal stages of life. Lyons, Orozovic, Davis, and Newman (2002) examined the experience of doing, being, and becoming in those patients diagnosed with a life-threatening illness in a hospice setting. Doing encompassed dealing with losing and maintaining occupations as well as preserving physical and mental function. Being included relationships with others that give pleasure and a sense of worth and self-reflection. Becoming is a concept which included learning new things, making a contribution and making a contribution. Doing, being, and becoming are identified as potential benefits to occupational engagement, and meeting the needs of patients with life-threatening illness (Lyons et al., 2002).

Jeyasingam, Agar, Soares, Plummer, and Currow (2008) explored the unmet needs of patients with terminal illness, including cancer, and their caregivers. The greatest challenges according to the patients were using stairs, transfers, walking, leisure, and showering, whereas the greatest challenges from the view of caregivers were climbing stairs, walking, transfers, transport, and leisure activities. Other unmet needs
recognized were assistance with medications, assistance with home maintenance, and in-house assistance (Jeyasingam et al., 2008). Unmet needs were also identified in Taylor and Currow’s (2003) cross-sectional study of inpatient, outpatient, and palliative care patients diagnosed with cancer. The patient identified unmet needs including advice about alternative equipment or procedures to complete activities of daily living as well as work, leisure and driving interventions. These needs significantly increased as functional performance decreased (Taylor & Currow, 2003).

Lala and Kinsella (2011) used phenomenological methods to inquire about the meaning of occupations in eight older adults experiencing terminal illness primarily were diagnosed with cancer. Several themes emerged from the data including: living with death, reworking everyday life, guided by the will of the body, focused on relationships, attentive to small things, and existential relationships. Living with death involved making end of life arrangements, saying good-byes, finding distractions in the form of occupations, and participating in activities that they have always yearned to do. Reworking everyday life involved adjusting to completing activities differently, life revolving around doctor appointments, and being at home for long periods of time. Guided by the will of the body referred to participants need to be more attentive to their body in order to keep from pushing themselves to hard. Focused on relationships included spending most of their time with family members and friends, God, other patients, and health care professionals. Attentive to small things described a new appreciation for the little things that were given to them or done for them. Lastly, existential relationships involved the participants’ identification of a need for reflection to come to terms with death. Lala and Kinsella (2011) suggest that occupational therapists
expand practice beyond the biomedical model and offer emotional support in palliative care; no specific suggestions were identified.

Keesing and Rosenwax (2011), Australian occupational therapists, examined the role of occupational therapy in palliative care and the occupational needs of the people who are dying and their caregivers. Fourteen caregivers and 18 occupational therapists participated in the study. Several themes emerged from the qualitative study including: occupational disengagement and deprivation; disempowerment due to lack of communication between service providers and lack of acknowledgment of the patient and their family; lack of occupation due to lack of time and resources; and frustration of occupational therapists regarding limited opportunities to care for patients in palliative care. Keesing and Rosenwax (2011) concluded that patient and caregivers needs were not being met within occupational therapy’s current role is that of primarily providing adaptive equipment and discharge planning. In addition, time limitations, lack of resources, lack of knowledge of other healthcare providers, patients, and the community were identified as barriers to expansion of the role of occupational therapy in palliative care in Australia.

Halkett, Ciccarelli, Keesing, and Aoun (2010) further examined barriers to occupational therapy in palliative care in Western Australia. Both occupational therapists and other healthcare professionals that worked in palliative care were included in this study. Four barriers were identified including: healthcare professionals lack of knowledge and thinking about what occupational therapists do; inadequate promotion of occupational therapists; lack of funding for occupational therapy involvement from initial diagnoses and frequent visits afterwards; and limited research on the role of occupational
therapists in palliative care. There is a need for further research about the role of occupational therapy in palliative care (Halkett et al., 2010).

**Living with cancer**

Published research or expert opinion related to the role of occupational therapy in the provision of care to persons living with cancer is quite limited. Two studies are presented here, the first a small exploratory study examining the experience of breast cancer and the second a survey of childhood cancer survivors as young adults to examine the late effects of cancer. Vrkljan and Miller-Polgar (2001) interviewed three women in their early to mid-50s to discuss the experience of progressing through four emotional stages after their breast cancer diagnoses. Results indicated that *Doing = Living* (p. 240). *Doing = Living* refers to the engagement of patients in meaningful activities in order to provide life enhancement. These stages identified by the subjects were deconstruction (period of loss of occupational engagement and diminished self-esteem), transition (period of feeling overwhelmed and deciding to resume meaningful occupations), reconstruction (period of adaptation and modification), and the transition to living person (period of resuming engagement in previous occupations). Patients who were living with cancer reported still needing to participate in daily occupations just as they did before their diagnosis. Occupational engagement in meaningful activities is recommended as the primary focus of occupational therapy, along with assisting the patient through life transitions (Vrkljan & Miller-Polgar, 2001).

Berg and Hayashi (2013) conducted a survey of 42 young adult childhood cancer survivors between 18 and 25 years of age to determine the impact of the six late effects of cancer on daily activities and coping strategies employed. Late effects include memory,
body image, fatigue, cognition, pain, and depression. Eighty-eight percent survey
responders struggled with at least one of the six identified late effects with memory and
fatigue identified as the largest barriers to daily activities. Participants further reported
cognitive issues, depression, and negative body image that negatively impacted their
social participation, educational activities, and work performance. Fatigue was found to
impact work activities; the majority of participants earned $20,000 or less per year due to
deficits in ability to fulfill work and educational requirements. Berg and Hayashi (2013)
further identified sleep and rest, fitness, quiet leisure, and support of family and friends as
the most commonly implemented coping strategies to counter the impacts of the six late
effects.

Summary

A review of the cancer-related literature revealed four levels of care-- primary
care, oncology specialist care, palliative care, and living with cancer. At each level,
psychological and physical effects impact the patient diagnosed with cancer’s capacity to
participate in valued occupation. Due to these effects, implementing strategies to
overcome psychological and physical barriers should be considered in primary, oncology
specialist care, palliative care, and living with cancer.

Primary care involves providing information about diagnoses, making treatment
decisions, offering psychological support, treating any co-morbidities, providing
preventative care, and being cognizant of other professionals involved during the ongoing
care of cancer treatment (Smith & Toonen, 2007). Although research shows that patients
want to be involved in treatment decision-making process and desire improved
management of psychosocial issues (Grunfeld et al., 1999), other research demonstrated
that communication between the oncologist/primary care physician and the patient was poor (Mao et al., 2009).

In oncology specialist care, there are a variety of treatments that can be utilized for people with cancer. Traditional treatments include chemotherapy, adjuvant therapy, chemo-hormonal therapy, surgery for removing tumors, radiation, bone marrow transplant (gene therapy), and pharmaceuticals/single agent therapy (Lichter, 2000; Hwu, 2000; Perry et al., 2000; Vose et al., 2000). Alternative treatments are primarily used to manage negative symptoms and may include relaxation techniques, aromatherapy, prayer, acupuncture, imagery, hypnosis, meditation, biofeedback, journaling, music therapy, therapeutic touch, vitamins and herbs (Smith & Toonen, 2007).

Palliative care addresses grief and loss, coping skills (mindfulness therapy and acceptance/commitment therapy), psychosocial and spiritual aspects of patients and their families, consultation, relaxation techniques (induction script, progressive muscle relaxation, passive neuromuscular relaxation, autosuggestion, guided visualization, and unguided visualization (Miller & Hopkinson, 2008; Schneider & Walter, 2007).

Research findings regarding living with cancer show that cancer survivors often experience limitations in work, social participation, and finances (Ness et al., 2008). Patients living with cancer clearly have a desire to return to normal living (DeSanto-Madeya et al., 2007; Short et al., 2005; de Boer et al., 2011). Research participants share a desire for structure and routine in their day in order to manage care of others, household tasks, resting, using phone, self-cares, social visits, time with family, and working (DeSanto-Madeya et al., 2007; la Cour et al., 2008).
There are psychological, physical, and work-related approaches to interventions that assist patients living with cancer in returning to work, suppressing symptoms, increasing energy level, and improving overall quality of life. Psychological interventions include cognitive therapy, psycho-education, stress management, and supportive groups (Andrykowski et al., 1996; Bottomeley et al., 1997; Classen et al., 2001; Edelman, Craig, & Kidman, 2000; Fawzy et al., 1990; Fukui et al., 2003; Richardson et al., 1990). Researchers found that exercise, home-based activities, resistance exercises, flexibility training, and high intensity training aided in returning back to work and increasing quality of life (Knols et al., 2005; Stevinson et al., 2004; Pinto et al., 2005; Galvao & Newton, 2005). Work-related intervention incorporate aspects of both psychological and physical interventions as well as medical, multidisciplinary, and vocational interventions (Baines et al., 2012; de Boer et al., 2011; Hubbard et al., 2013, Thijs et al., 2012).

The role of occupational therapy is not clearly defined across the four stages of cancer care. The role of occupational therapy is most clearly defined in palliative care at present. There is opportunity for occupational therapists to work in all levels of care given the occupational therapist’s knowledge base and holistic approach to care. Occupational therapists have the potential to develop a strong relationship with a patient in primary care aimed toward decreasing the problems affecting the patient’s occupational performance and thereby improving patient satisfaction; providing patient and caregiver education; and reducing the amount of time spent in healthcare through home-based interventions (Muir, 2012). This same relationship could be easily extended to the level of care known as living with cancer, as patients are guided toward positive transition to re-engaging in valued occupations.
The role of occupational therapy is developed and reflected in a number of official documents from the American and Canadian Occupational Therapy Associations, as well as the National Council for Hospice and Specialist Palliative Care Services. Palliative occupational therapy is described as providing includes wheelchair seating, equipment for returning home, re-training in activities of daily living, energy conservation techniques, home assessments, and splinting (NCHSPCS, 2000). Cognitively, occupational therapists retrain cognition and perception, implement relaxation techniques, assist in finding hobbies and leisure interests, provide education resources for caregivers, and aid in grief and loss counseling (NCHSPCS, 2000).

Occupational therapists prevent injury, maximize functional performance, and involve the patient in meaningful activities (Benthall & Holmes, 2011). Occupational therapists also are involved in spiritual and caregiver support that is useful near the end of life (LaLa & Kinsella, 2011). Time limitations, lack of funding, and a lack of knowledge by other healthcare professionals regarding the role of occupational therapy in palliative care complicate provision of care and serve as potential barriers to optimal occupational therapy involvement (Halkett et al., 2010; Keesing & Rosenwax, 2011).

There is limited literature on occupational therapy’s role in working with persons living with cancer. Berg and Hayashi (2013) identified barriers in activities of daily living due to impairments in memory and increased fatigue. Most commonly used coping strategies include sleep and rest, fitness, leisure, and family/friend support (Berg & Hayashi, 2013). According to OTNA (Occupational Therapy Needs Assessment), 56 percent of the 102 patients living with cancer found that there was a need for occupational therapy services.
There is a need for occupational therapists to be included in all levels of care that a patient with cancer endures. Further research, especially that providing quantifiable proof of the efficacy of occupational therapy at all levels of care would serve to strengthen the role of occupational therapy and effective interventions. Primary care, oncology specialist care, and living with cancer are the levels of care requiring the most attention from the profession of occupational therapy at this time. Although Muir (2012) suggests a series of roles specific to the occupational therapist working in primary care, the same concepts are applicable to oncology specialist care.

This scholarly project aims to develop a guide for the occupational therapists in oncology specialist care. The guide will address the occupational therapy process (assessment, intervention planning, intervention implementation, discharge planning), provide an overview of the occupational therapist’s role and discuss outcome measurements in the oncology care context. A fact sheet describing various types of cancer, the symptoms, and typical treatments specific to those cancers is provided as an advocacy tool. Additional resources for the occupational therapist working in oncology specialist care are provided. The guide will serve as an educational tool for occupational therapists entering oncology specialist care. Chapter three presents the methods used to develop this scholarly project including decisions made and the justification. Chapter four presents a guide for occupational therapists working in oncology specialist care. Chapter five summarizes the project and discusses recommendations for future work.
CHAPTER III
METHODOLOGY

This project begins with a literature review conducted using online databases available from the Harley E. French Library of Health Sciences. The purpose of the literature review was to build a knowledge base related to the topics of cancer, cancer treatment, treatment effects, and role of occupational therapy in oncology. The following databases were utilized: Academic Search Premier, CINAHL, Cochrane, EBSCOhost Databases, OT Search, PubMed, PsychInfo, ScienceDirect, and SCOPUS. Phrases such as cancer, cancer treatment, oncology, oncology treatment, occupational therapy and oncology, primary care oncology, occupational therapy and primary care, palliative care, palliative care and oncology, living with cancer, occupation and cancer, occupational therapy and cancer and assessments, cognition and cancer, symptoms of cancer, and ADLs and Cancer. Information retrieved from credible websites was used to aid in finding definitions and statistics. Biomedical and occupational therapy textbooks were used in the development of this scholarly project.

There is limited literature regarding the use of occupational therapy models in oncology. Désiron, Donceel, de Rijk, and Van Hoof (2013) compared Occupational Adaptation (CA), Person-Environment-Occupation (PEO), and the Model of Human Occupation (MOHO) models to find the best fit to use with patients who have cancer. MOHO was selected for its perspective of the person and the environment, specifically volition, habituation, roles, and personal causation. Roles and routines are often affected
due to the effects of cancer and cancer treatment. MOHO describes human interactions with the social and physical environment upon participating in occupation (Kielhofner, 2008). The environment is viewed to be capable of facilitating or inhibiting performance. The person is described in MOHO in the terms of volition, habituation, personal causation, interests and values. Each of these components of the person can either inhibit or prohibit occupational performance, as well (Kielhofner, 2008). Understanding each of these components helps the occupational therapist develop a holistic picture of the patient and make meaningful goals for the patient experiencing cancer.

The *Occupational Therapy Practice Framework: Domain and Process* (2nd ed.; AOTA, 2008ε) was used as to direct the proposed course of action. Each step of the occupational therapy process was examined closely and included in the guide. Major concepts were applied to oncology practice and patients by providing the reader with step-by-step instructions to use in order to develop clinical thinking skills. Areas of possible concern were highlighted in a chart to make sure that pertinent factors are taken into consideration from the perspective of the MOHO model. By using the *Occupational Therapy Practice Framework: Domain and Process* (2nd ed.; AOTA, 2008a), the guide will be easier for occupational therapists to implement into practice.

The main purpose of this guide is to advocate and establish a role for occupational therapists on the oncology team. Implementation of this guide will assist occupational therapists to advocate for and practicing in the oncology care team. Chapter four presents the guide to primary care oncology, including advocacy materials, possible assessments and outcome measures, and examples of each stage of the occupational therapy process, as well as additional resources for occupational therapists to utilize in oncology.
CHAPTER IV

THE PRODUCT
Occupational Therapy in Oncology

A guide for the occupational therapist working on the oncology care team

Authors: Kaitlyn Radi, MOTS, Anna Schumacher, MOTS, Sonia Zimmerman, PhD, OTR/L, FAOTA
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Introduction

The number of individuals being diagnosed with cancer is increasing (Center for Disease Control and Prevention, 2012), and patients are living longer.

Although occupational therapists work with patients who have cancer, this population is not provided occupational therapy services until the late stages of cancer. See Appendix A. for the role of occupational therapy in oncology fact sheet from AOTA (American Occupational Therapy Association). Due to the increased survivor population, occupational therapists need to be included not only at the palliative stages of a patient with cancer’s treatment, but beginning in oncology specialist care.

The object of the guide presented here is to provide an overview of the role of occupational therapy in oncology specialist care, important oncology assessments, the intervention process, and the outcome measures in addition to supplemental example goals and interventions. Each section of the guide highlights the main objectives that occupational therapists may utilize when working on the oncology care team.

The guide uses terminology associated with the Model of Human Occupation (MOHO) and is tailored to occupational therapists working in oncology. Through synthesis of information, occupational therapists can develop a plan using the information provided in a logical manner beginning with the evaluation and ending with outcome measures.

Supplemental information provided in this guide includes an educational handout: to be shared with oncologists (see Appendix B.), explaining the occupational therapists role and how occupational therapy can strengthen the oncology care team. In addition, a
referral form for oncologists to refer to occupational therapists is included (see Appendix C). Further resources, references, and recommendations are provided for occupational therapists pursuing a role on the oncology care team. See Appendix D. and E. for additional resources and FAQs, respectively. The role of the occupational therapist in oncology specialist care is based on the roles described by Muir (2012) for the occupational therapists working in a primary care setting due to the similarities between primary care and oncology specialist care. These include the following:

- Assisting the physician with interventions that encourage prevention of disease/disability or decrease the disease process,
- Providing services to aide other healthcare professionals to deliver holistic care
- Considering ways that symptoms may be affecting function or participation,
- Providing home-based interventions
- Aiding patients in participating in occupations through modifying or adapting activities and giving group education (Muir, 2012).

**Collaborative Roles**

Occupational therapists and oncologists work side by side with a clear understanding of each other’s roles. Table 1. presents the unique roles oncologists offer patients in oncology specialist care and complimentary roles occupational therapists bring to the oncology care team. Although the same problems are often addressed, occupational therapists approach the problem from a functional standpoint. Is the patient able to participate functionally in the occupations they desire? For further information on the
occupational therapists role and a one page informative handout to give to the oncologist see Appendix B.

**Table 1. Collaborative Roles**

<table>
<thead>
<tr>
<th>Oncologist’s Role</th>
<th>Shared Approaches</th>
<th>Occupational Therapist’s Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Inform patient of diagnosis</td>
<td>• Client-centeredness</td>
<td>• Consult patient and family</td>
</tr>
<tr>
<td>• Help make treatment decisions</td>
<td>• Collaborative</td>
<td>• Educate patient and family about how symptoms/treatment affect functional abilities</td>
</tr>
<tr>
<td>• Offer psychological support</td>
<td>• Education</td>
<td>• Offer support for family and patient</td>
</tr>
<tr>
<td>• Treat co-morbidities</td>
<td>• Support</td>
<td>• Provide resources</td>
</tr>
<tr>
<td>• Provide preventative care</td>
<td></td>
<td>• Provide alternatives for occupational participation</td>
</tr>
<tr>
<td>• Work with professional during ongoing care</td>
<td></td>
<td>• Offer plan for dealing with life transitions (stages of cancer)</td>
</tr>
<tr>
<td>• Communicate with occupational therapist</td>
<td></td>
<td>• Provide strategies for accepting diagnosis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Communicate with doctor about treatment plan</td>
</tr>
</tbody>
</table>

---

**MOHO**

The Model of Human Occupation (MOHO) is used to organize and explain the occupational therapy process. Figure 1. describes each component (person and environment) and the interaction between them is viewed by MOHO. The person is composed of multiple aspects: volition, personal causation, interests, values, habituation (roles and routines), and performance capacity. All aspects can either inhibit or prohibit occupational performance. The environment plays a role in influencing occupational
participation through social (people and interactions between them) and physical (spaces, lighting, noise, temperature, etc.) components.

**Figure 1. The Person and Environment**

**THE PERSON**

<table>
<thead>
<tr>
<th>Volition</th>
<th>Habituation</th>
<th>Performance Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>• personal causation</td>
<td>• habits</td>
<td>• skill</td>
</tr>
<tr>
<td>• interests and values</td>
<td>• roles</td>
<td>• musculoskeletal, neurological, &amp; cardiopulmonary systems</td>
</tr>
<tr>
<td></td>
<td>• routines</td>
<td>• cognition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• individual experience</td>
</tr>
</tbody>
</table>
THE ENVIRONMENT

Social
- family
- friends
- co-workers
- peers

Physical
- lighting
- noise
- spaces
- temperature
- objects

Table 2. describes problems the patient may be facing when undergoing cancer and cancer treatment and ideas of intervention that could be utilized with this population. The left hand column addresses specific MOHO concepts regarding the person or the environment and problems that may occur within these two domains. Interventions are described in the right hand column addressing the problems/challenges listed.

**Table 2. MOHO Concepts in Oncology**

<table>
<thead>
<tr>
<th>MOHO Concept</th>
<th>Problems/Challenges of Client</th>
<th>Occupational Therapy Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Volition</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Personal Causation</td>
<td>• Feelings of depression due to diagnosis/prognosis leading to loss of interest</td>
<td>• Inform patient of goals that are within his or her abilities</td>
</tr>
<tr>
<td>• Values</td>
<td>• Feeling inadequate while participating in occupations due to fatigue, nausea, weakness, pain, etc.</td>
<td>• Encourage patient to recognize what he or she can do and accept what limitations may be</td>
</tr>
<tr>
<td>• Interests</td>
<td></td>
<td>• Modify routine</td>
</tr>
<tr>
<td><strong>Habituation</strong></td>
<td>• Loss of role as</td>
<td></td>
</tr>
<tr>
<td>• Roles</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7
<table>
<thead>
<tr>
<th>Habits</th>
<th>Consult family members and patient about expected symptoms and prognosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Habit due to increased need for help from children and/or spouse</td>
<td></td>
</tr>
<tr>
<td>• Unable to meet role expectations due to side effects of treatment/cancer (pain, nausea, weakness, fatigue, depression)</td>
<td></td>
</tr>
<tr>
<td>• Loss of role as a worker/provider, due to need for decreased hours at work, or lack of working</td>
<td></td>
</tr>
<tr>
<td>• Loss of routine due to work absence, inability to child rear, volunteer</td>
<td></td>
</tr>
<tr>
<td>• Feelings of depression attributed to role/routine loss</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance Capacity</th>
<th>Activities that address attention and memory</th>
</tr>
</thead>
<tbody>
<tr>
<td>And Skills</td>
<td>Problem solving with working to modify work/home/etc. environment to trigger memory</td>
</tr>
<tr>
<td></td>
<td>Discussing coping strategies for pain management and acceptance of disease</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Family expectations</td>
</tr>
<tr>
<td>• Difficulty communicating and relating to others</td>
</tr>
<tr>
<td>• Over stimulating home environment</td>
</tr>
</tbody>
</table>

| Help patient be able to discover what is difficult for him or her and ask for help |
| Assertiveness training |
| Family education |
| Patient education |
Occupational Therapy Process

In oncology specialist care, the occupational therapists will initiate long-term therapeutic relationships with clients, extending throughout the course of their illness. The *Occupational Therapy Practice Framework: Domain and Process* (AOTA, 2008a) proposes a guideline for occupational therapists to follow throughout the occupational therapy process in any type of setting. Three steps are identified in the framework: evaluation, intervention, and outcomes. The OT Practice Framework also emphasizes that the therapist is open to changing interventions and desired outcomes based on the needs and skills of the client. It is important to note that the three steps (evaluation, intervention, and outcomes) can be addressed multiple times during the patient’s treatment process from oncology specialist care to palliative care, meaning a patient can be evaluated during any phase of the intervention plan. To prepare the clinician for practicing on the oncology care team, an overview of the therapy process is addressed in this section.

Evaluation

The first step in the occupational therapy process is evaluation. Evaluation includes gaining information from the client to build an occupational profile and observing occupational performance. Performing a chart review prior to meeting with the client will assist in deciding what gaps need to be filled, influencing which questions need to be answered or confirmed. When working with patients diagnosed with cancer
several evaluations may have to be used to gain insight into the patient’s experience and to provide optimal treatment. See Appendix F. for a complete listing of MOHO assessments that may be used in the evaluation process.

**Occupational Profile**

When formulating the occupational profile, a semi-structured interview or a structured interview assessment is most often employed. Questions to ask the patient should address past occupations and experiences, routines and habits, interests, values, needs, concerns about occupational performance, and personal goals in order to gain a picture of the individual’s occupational identity. Table 3. presents MOHO based assessments used to build the occupational profile.

**Table 3. MOHO Occupational Profile Assessments**

<table>
<thead>
<tr>
<th>CONCEPT</th>
<th>NAME (Author)</th>
<th>TYPE</th>
<th>PURPOSE</th>
<th>TIME</th>
<th>POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Capacity,</td>
<td>Occupational Performance History Interview-II (OPHI-II) (Kielhofner et al., 1998)</td>
<td>Semi-structured interview</td>
<td>Gathers information regarding a patient’s occupational adaptation and his/her view of their life</td>
<td>45-60 minutes</td>
<td>Adolescents and Adults with various diagnoses</td>
</tr>
<tr>
<td>Volition, Habituation</td>
<td></td>
<td>Outcome Measure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Habituation, Volition</td>
<td>The Role Checklist (Oakley, Kielhofner, &amp; Barris, 1985)</td>
<td>Self-Report Checklist Outcome Measure</td>
<td>Gain patient’s perception of their ability to participate in their occupational roles and the meaning they place on those roles</td>
<td>2-15 minutes</td>
<td>Adolescents and Adults</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance capacity, Volition, Environment</td>
<td>Worker Role Interview (WRI) (Braveman et al., 1995)</td>
<td>Semi-structured interview and rating scale Outcome Measure</td>
<td>Examine psychosocial factors influencing work performance</td>
<td>30-60 minutes</td>
<td>Originally for injured workers but currently addresses any individual with a disability</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>--------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Performance Capacity</td>
<td>Occupational Circumstances Assessment-Interview and Rating Scale (OCAIRS) (Forsyth et al., 2005)</td>
<td>Semi-structured interview Outcome Measure</td>
<td>Examines the extent of the patient’s occupational adaptation</td>
<td>20-30 minutes Rating: 5-20 minutes</td>
<td>Adolescent and adults with various diagnoses</td>
</tr>
<tr>
<td>Performance Capacity</td>
<td>Occupational Self Assessment (OSA) (Baron, Kielhofner, Lyengar, Goldhammer, &amp; Wolenski, 2006)</td>
<td>Self-report Outcome Measure</td>
<td>Examines patient’s self-perception of occupational competence, importance of occupational functioning, and environmental adaptation</td>
<td>10-20 minutes</td>
<td>Variety over the age of 12 able to report</td>
</tr>
</tbody>
</table>

**Analysis of Occupational Performance**

It is essential to include observations of occupational performance in the evaluation as well. Skilled observation provides a different perspective on the patient’s actual skill level and occupational performance skills and patterns. The occupational therapist should think about the demands of meaningful occupations and the skill required to complete them, as well as the context surrounding the occupation. Structured assessments should also be utilized in order to objectively differentiate the client’s
strengths and weaknesses, and identify client factors and performance patterns. Table 4 presents MOHO-based assessments used to conduct skilled observation of the patient.

**Table 4. MOHO Observation-based Assessments**

<table>
<thead>
<tr>
<th>CONCEPT</th>
<th>NAME (Author)</th>
<th>TYPE</th>
<th>PURPOSE</th>
<th>TIME</th>
<th>POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Capacity</td>
<td>Assessment of Motor and Process Skills (AMPS) (Fisher, 2003)</td>
<td>Observation-based Outcome Measure</td>
<td>Examines patient’s motor and process skills while engaging in occupation</td>
<td>30-60 minutes</td>
<td>Kids 3+ years old; Adolescents; Adults</td>
</tr>
<tr>
<td>Performance Capacity</td>
<td>Model of Human Occupation Screening Tool (MOHOST version 2.0) (Parkinson, Forsyth, &amp; Kielhofer, 2006)</td>
<td>Screening tool Observation Outcome Measure</td>
<td>Determine the need for services and level of occupational functioning using the concepts of MOHO</td>
<td>Varies (days to weeks) Scoring: 10-20 minutes</td>
<td>Adults with psychosocial and/or physical impairments</td>
</tr>
</tbody>
</table>

**Developing Problem Statements and Goals**

After both the occupational profile and analysis of the client are completed, the therapist works with the patient to determine problem statements and formulate goals (outcomes) to be addressed in therapy. Goals are provided without timelines due to the varying lengths of stay patients may have in oncology specialist care.

Problem statements are determined by synthesizing the patient’s functional deficits and top priorities, and what he or she wants and needs to do. Problem statements yield therapy goals and help the therapist formulate an intervention plan. Problem
statements are written to reflect the occupation in which the individual is experiencing difficulty and performance skill(s) directly influencing occupational performance in occupations. Table 5. Presents samples of problem statements and goals developed using MOHO as a theoretical background for patients in oncology care.

Table 5. MOHO Sample Problem Statements and Goals

<table>
<thead>
<tr>
<th>MOHO Concept</th>
<th>Problem Statements</th>
<th>Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volition</td>
<td>1. Patient is unable to participate in horseback riding as evidenced by increased fatigue and weakness leading to decreased interest and feelings of hopelessness.</td>
<td>1. Patient will be able to recognize her limitations and abilities as well as being cognizant of parts of the days she may have energy.</td>
</tr>
<tr>
<td></td>
<td>2. Patient is unable to maintain role as a mother as evidenced by needing assistance with dressing and cooking due to increased symptoms of fatigue, cognitive impairments, and weakness from treatment.</td>
<td>2. Patient will formulate a plan to efficiently complete occupations with modified independence.</td>
</tr>
<tr>
<td>Habituation</td>
<td>3. Patient is unable to complete work tasks in a timely manner due to decreased memory and attention.</td>
<td></td>
</tr>
<tr>
<td>Performance Capacity</td>
<td>4. Patient has difficulty meeting family expectations such as child rearing, cleaning, driving, cooking, etc. as evidenced by children’s comments and concerns.</td>
<td>3. Patient will use 3 learned memory and attention strategies to complete a work task independently.</td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td>4. Family will verbalize understanding of prognosis, strengths and weaknesses of family member in effort to formulate a plan for completing tasks together.</td>
</tr>
</tbody>
</table>

**Intervention**

The goals developed in the stage of evaluation and the information gathered aide in building client-centered interventions. There are three stages of intervention; intervention planning, intervention implementation, and implementation review.
Intervention Planning

Intervention planning begins with identification of the frame(s) of reference compatible with the selected occupation-based model, in this case MOHO. The use of theory influences the types of intervention chosen and clarifies the purpose. This guide utilizes the Model of Human Occupation (MOHO) to best meet the needs of patients with cancer. In addition, it is recommended that selected interventions are evidence-based and reflect best practice. Collaboration with patients ensures that therapy is meaningful and motivating, as well as addressing the patient’s desired outcomes. In this stage outcome measures are chosen based on information gathered from the occupational profile and analysis of occupational performance. Areas to be addressed in outcome measures are symptom management, cognitive abilities, and physical abilities, as well as the client’s skill level in valued areas of occupation.

Taylor (2008) describes six therapeutic modes (empathizing, instructing, encouraging, problem-solving, collaborating, and advocating). These modes are important to utilize throughout intervention and will vary depending on the goal of specific intervention, the patient, and the therapist. For example, it is quite likely that the therapist will need to employ the empathizing mode throughout the intervention process due the patient’s state of vulnerability after being diagnosed with a life-threatening illness. Table 6. presents the goals, interventions, and modes.

Table 6: Sample MOHO Goals, Interventions, and Modes

<table>
<thead>
<tr>
<th>Goals</th>
<th>Interventions</th>
<th>Modes to Utilize</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Patient will be able to recognize her limitations and abilities as well as be cognizant of energy levels</td>
<td>#1: Therapist will discuss with the patient her prognosis and how symptoms/treatments affects</td>
<td>#1. Encouraging - This mode is suggested due to patient vulnerability caused by new diagnosis and new</td>
</tr>
<tr>
<td>during the day.</td>
<td>functional capabilities in daily occupations.</td>
<td>limitations they haven’t had before.</td>
</tr>
<tr>
<td>----------------</td>
<td>---------------------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td></td>
<td>#2: Therapist will assess patient’s current functional/energy level using the Fatigue Level Scale in addition to informal interview. Results will be discussed and assessed with patient.</td>
<td>#2. Instructing- This mode is suggested because this session would include informing the patient of results and limitations in effort to guide future treatment sessions.</td>
</tr>
<tr>
<td></td>
<td>#3. Therapist will work with patient to create a schedule of times during the month to horseback ride revolving around times of treatment and symptoms.</td>
<td>#3. Collaborating-This mode is suggested because the therapist and patient will be discussing solutions through sharing ideas about patient’s lifestyle, treatments, and symptoms she is experiencing.</td>
</tr>
<tr>
<td>2. Patient will formulate a routine to efficiently complete occupations with modified independence.</td>
<td>#1. Therapist will discuss patient’s prognosis/diagnosis with family to inform them of what to expect.</td>
<td>#1. Instructing-This mode is suggested because the therapist is teaching the client about her specific type of cancer and how the treatments and symptoms of cancer affect occupations.</td>
</tr>
<tr>
<td></td>
<td>#2. Therapist and patient will work together to develop a routine in order to efficiently complete tasks within the role of a mother.</td>
<td>#2. Problem-Solving- This mode is suggested because the therapist and patient work together to find solutions, such as routine, to help her be successful in her role as a mother.</td>
</tr>
<tr>
<td>3. Patient will use 3 learned memory and attention strategies to</td>
<td>#1. Therapist will teach client 3 memory-enhancing strategies (i.e. to-do-list,</td>
<td>#1. Instructing-This mode is suggested because the therapist is teaching the</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>complete a work task independently.</td>
<td>sticky notes, phone alerts, computer alerts, color-coating) to implement at work.</td>
<td>patient which strategies may be helpful at work.</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>#2. Therapist will use activities to enhance attention (games on ipad, paper-pencil tasks, reading directions to a recipe with external distractions)</td>
<td>#2. Encouraging-This mode is suggested because the therapist is encouraging the patient to develop attention skills.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Family will verbalize understanding of prognosis, strengths and weaknesses of family member in effort to formulate a plan for completing tasks together.</th>
<th>#1. Therapist will create an educational handout regarding the patient’s specific type of cancer (symptoms, treatment effects, functional capacity) for the family.</th>
<th>#1. Instructing- This mode is suggested because the therapist is teaching the family about their loved one’s diagnosis.</th>
</tr>
</thead>
<tbody>
<tr>
<td>#2. The therapist will ask the patient’s family questions about what types of deficits their mom or spouse may have based off the educational handout provided. (i.e. “your mom is making a meal after work. What types of difficulties may she experience?”)</td>
<td>#2. Problem-solving-This mode is suggested because the therapist is addressing problems the patient may experience with the family therefore preventing further pressure on the patient due to unrealistic expectations.</td>
<td></td>
</tr>
</tbody>
</table>

**Intervention Implementation**

Interventions are implemented to improve the patient’s occupational performance and attain mutually-desired outcomes. Interventions are expected to be compatible with both the selected occupation-based model (MOHO) and the frame(s) of reference. The events of the session are then documented in relation to the outcomes. Assessments (including reassessments) help monitor the client’s weaknesses and strengths and monitor
changes in the patient’s experience of cancer. Reference Table 2. for MOHO concepts addressed in treatment.

**Intervention Review**

Lastly, in the intervention review a weekly appraisal of the improvements towards outcomes observed during intervention are evaluated and documented, as well as the overall effectiveness of the intervention plan. Patients with cancer have fluctuating performance levels caused by the use of new treatments or remission of cancer. The intervention plan reflects change and is often modified, especially after discontinuation of other treatments such as chemotherapy and surgery.

**Outcomes**

The overall effectiveness of the intervention plan is determined by the outcomes of therapy. Depending on the prognosis of cancer, outcomes will vary whether they are more maintenance-based or future-oriented. Outcome measures are used to support desired outcomes. Outcome measurement is also an effective tool to evaluate the overall intervention process. Both standardized and non-standardized outcome measures are used to elicit the patient’s response and true experience of therapy. Therapy should be meaningful and motivating in order to achieve positive outcomes. The results will shape the plan for future interventions used with the patient and future patients.

The stages of the occupational therapy process are not always linear. Evaluation is likely ongoing. Goals need to be readjusted to meet the changing needs of the patient. Patients diagnosed with cancer may have multiple issues and require that a number of occupations be addressed. Occupations will vary in importance level depending on the
stage of cancer treatment. The use of outcome measures assists the occupational therapist to determine when a goal has been achieved. This allows the focus of therapy to shift to other areas of need and other goals. Ultimately, the focus of the occupational therapy process is on client-centered, collaborative problem-solving in pursuit of individualized health and wellness.

MOHO outcome measures are listed in Table 7. The concepts from MOHO are provided with the assessment, as well as the type, purpose, amount of time it takes to complete an assessment, and the population that the outcome measure assesses. See Appendix G. for all assessments used in oncology that can be used in addition to outcome measurements if needed.

**Table 7. MOHO Outcome Measures**

<table>
<thead>
<tr>
<th>CONCEPT</th>
<th>NAME (Author)</th>
<th>TYPE</th>
<th>PURPOSE</th>
<th>TIME</th>
<th>POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Capacity, Volition, Habituation</td>
<td>Occupational Performance History Interview-II (OPHI-II) (Kielhofner et al., 1998)</td>
<td>Semi-structured interview</td>
<td>Gathers information regarding a patient’s occupational adaptation and his/her view of their life</td>
<td>45-60 minutes</td>
<td>Adolescents and Adults with various diagnoses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Outcome Measure</td>
<td>Complete within 2 sessions to fit time for rating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Habituation, Volition</td>
<td>The Role Checklist (Oakley, Kielhofner, &amp; Barris, 1985)</td>
<td>Self-Report Checklist</td>
<td>Gain patient’s perception of their ability to participate in their occupational roles and the meaning they place on those roles</td>
<td>2-15 minutes</td>
<td>Adolescents and Adults</td>
</tr>
<tr>
<td>Performance capacity, Volition, Environment</td>
<td>Worker Role Interview (WRI) (Browman et al., 1995)</td>
<td>Semi-structured interview and rating scale Outcome Measure</td>
<td>Examine psychosocial factors influencing work performance</td>
<td>30-60 minutes</td>
<td>Originally for: injured workers but currently addresses any individual with a disability</td>
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<td>Observation-based Outcome Measure</td>
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<td>Screening tool Observation Outcome Measure</td>
<td>Determine the need for services and level of occupational functioning using the concepts of MOHO</td>
<td>Varies (days to weeks)</td>
<td>Adults with psychosocial and/or physical impairments</td>
</tr>
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<td>Semi-structured interview Outcome Measure</td>
<td>Examines the extent of the patient's occupational adaptation</td>
<td>20-30 minutes</td>
<td>Adolescent and adults with various diagnoses</td>
</tr>
<tr>
<td>Performance Capacity</td>
<td>Occupational Self Assessment (OSA) (Baron, Kielhofner, Lyengar, Goldhammer, &amp; Wolenski, 2006)</td>
<td>Self-report Outcome Measure</td>
<td>Examines patient's self-perception of occupational competence, importance of occupational functioning, and environmenta l adaptation</td>
<td>10-20 minutes</td>
<td>Variety over the age of 12 able to report</td>
</tr>
</tbody>
</table>
Throughout the therapist process, it is important to be cognizant of what factors are most important to consider about the patient throughout the entire intervention process (evaluation, intervention, and outcome). These factors include the current symptoms the patient is experiencing and the type of treatment he or she is receiving, as well as the treatment-related adverse effects. See Appendix H. for information on the top 13 most common cancers in the U.S., common treatments and symptoms. Consistent with MOHO, Figure 2. reviews important aspects of the patient to include for a comprehensive evaluation, well-planned intervention, and positive outcomes. Possible areas to address during each phase of the therapy process are provided.
Figure 2. Considerations During the Occupational Therapy Process

**Evaluation**
- **Occupational Identity**: Roles negatively influenced by cancer treatment or symptoms
  - The type of cancer the patient has
  - The treatment the patient is planning to receive
  - The patient's view of themselves after being diagnosed and how others viewed them
- **Occupational Competence**: The occupations that the patient is either able or unable to do
  - The patient's past occupations in which he or she has been successful
  - Creating goals that are appropriate for patient's progress
  - Being aware of decreased or increased performance capacity due to progression or remission of cancer
- **Volition**
  - The patient's interests/priorities/goals
  - The roles that are most important to him or her
  - The patient's values
- **Habituation**
  - The patient's routine
  - Symptoms that cause barriers to patient's routine
- **Environment**
  - Resources for the patient
  - Family support
  - Home set-up
  - Opportunities
  - Demands
  - Barriers
  - **Occupational Participation**
  - Activity analysis of the patient's meaningful occupations

**Intervention**
- Intervention planning
  - Informing staff members and family members of how patient's symptoms affect functional performance in occupations
  - Possible changes in routines or roles due to progression/remission
  - Possible changes in routines or roles due to progression/remission
- **Occupational Competence**
  - Gather appropriate outcomes measures (OSA, FIM, COPM, etc.) depending on client needs
  - Matching the patient's skill level with the intervention
- **Volition**
  - Tailoring intervention plan to patient's interests
- **Habituation**
  - Possible changes in routines or roles due to progression/remission
- **Environment**
  - The next stage of treatment (outpatient, home health, inpatient, etc.)
  - The family's perspective
  - Who the patient is living with
- **Occupational Participation**
  - Grading intervention perceived abilities and actual abilities

**Outcomes**
- Measurements
  - Determine whether or not the assessments meet the goals
  - Outcomes should relate to wellness and occupational participation
  - Using outcomes measurements that are helpful in other stages of cancer

21
References


declines in older cancer survivors: an analysis of data from the ACTIVE trial. *European Journal of Cancer Care, 19*(1), 110-117


Appendix A.

Fact Sheet and Written Consent
The Role of Occupational Therapy in Oncology

Cancer is a general term used to describe the abnormal growth of cells in any part of the body. There are more than 100 types of cancer, which may affect specific tissues, organs, blood, or lymphatic systems. Treatment for cancer commonly includes surgery, chemotherapy, radiation, and/or hormonal therapy. With earlier detection and improved treatments, there has been a steady increase in the number of cancer survivors over the past decade. Cancer or the treatments involved in one’s care may lead to changes in physical, cognitive, and emotional well-being. Sometimes just doing daily activities leaves little energy for leisure, social, or work-related tasks. Occupational therapy practitioners have the knowledge and expertise to modify activities and environments to allow individuals to do the things they want and need to do to maintain quality of life.

Role of Occupational Therapy

The role of occupational therapy in oncology is “to facilitate and enable an individual patient to achieve maximum functional performance, both physically and psychologically, in everyday living skills regardless of his or her life expectancy” (p. 75). Due to the uniqueness and complexity of human occupation, each individual diagnosed with cancer will experience different limitations in his or her various occupations/roles and restrictions in participation throughout the course of the disease, based on lifestyle choices.

Cancer and its treatment can cause interruptions in daily routines affecting how individuals perform their self-care, work, leisure, or social activities. For example, individuals may experience difficulty with self-care activities such as bathing or dressing. Others may experience difficulty performing essential job functions such as lifting, carrying, or having the mental or physical endurance to work full time. Some individuals with cancer may experience difficulties with leisure activities such as traveling, gardening, or exercising while others may experience difficulty socializing with friends and family. Individuals with cancer may experience these difficulties as a result of the disease or from the effects of its treatment. Common side effects of cancer or its treatment include fatigue, pain, weakness, cognitive difficulties, anxiety or depression, and changes in self-esteem or self-image. Occupational therapy practitioners address these effects through intervention aimed at restoring function such as developing home exercise programs to improve strength and mobility; modifying activities such as teaching individuals ways to conserve energy during important everyday activities; or modifying environments such as the workplace, home, or community.

Occupational therapy intervention methods can remediate, compensate, or adapt a client’s abilities to assist him or her in achieving a maximum level of independence and quality of life. Some examples can include:

- Management of activities of daily living (ADLs) such as bathing and dressing through adaptations to the activity and environment, and/or the use of assistive technology.
- Lifestyle management such as preventative health, improved fitness, etc. This may include education emphasizing the person’s strengths and positive coping strategies that enable him or her to be in control of lifestyle choices.
- Sleep and fatigue management such as education in and demonstration of energy conservation and relaxation management techniques to support health and the ability to participate in meaningful activities.
- Cognitive strategies to address memory, organizational executive function deficits, and low-energy tasks that focus on restoring engagement in daily occupations such as sitting in the park, reading a newspaper, or conversing with a friend.
Therapeutic exercise and positioning to maintain functional range of motion, mobility, and strength such as home exercise programs, splinting, wheelchair fitting, bed positioning, etc. to provide support and comfort.

Lymphedema management to reduce limb swelling, which can limit range of motion and the ability to move and complete ADLs.

Who Can Benefit?
Occupational therapy services are appropriate for individuals throughout the continuum of cancer care, including those who are newly diagnosed, undergoing treatment, receiving hospice or palliative care, or who are in the survivorship phase of care. Caregivers may also benefit from instructions in home programs and/or observing occupational therapy treatment. This will provide them with tools to offer support and assistance to their loved ones in performing daily activities.

Where Are Occupational Therapy Services Provided?
Occupational therapy services for those along the continuum of cancer care may be provided in
- general or specialty hospitals,
- rehabilitation centers,
- hospice units, and
- the home.

In hospital settings, occupational therapy may focus on ADLs such as dressing, bathing, or using adaptive equipment to maintain one's highest level of independence. In rehabilitation centers, occupational therapy services may continue to include those elements but expand to include environmental modification and helping individuals reconnect with leisure activities, community participation, and return-to-work activities. Occupational therapy in hospice units may also address self-care or leisure activities and the use of adaptive equipment or environmental modifications, including positioning and pain management strategies. In the home, occupational therapy practitioners may address home modifications and caregiver education to maximize one's safety and independence.

Many cancer survivors continue to require occupational therapy services once treatment is completed in order to transition back to their daily activities. These interventions are sometimes provided in hospitals or other settings, such as survivorship programs designed to address fatigue, weakness, cognitive difficulties, pain, or depression. Intervention following completion of treatment addresses the long-term or late effects of cancer treatments, which may last for months or years and may affect ongoing participation in daily activities.

Conclusion
Cancer or the treatments involved in one's care may lead to changes in physical, cognitive, and emotional well-being regardless of the current stage of disease or medical intervention. Occupational therapy practitioners use a collaborative, client-centered approach that supports each individual in shaping the therapeutic intervention and identifying meaningful goals. Occupational therapy practitioners look more broadly than at the cancer treatment itself to provide comprehensive interventions that focus on one's ability to successfully participate in everyday activities and maintain or improve quality of life.

References
Hi Kaitlyn,

You may use it as long as the AOTA copyright information is included, you aren’t publishing this guide, and there won’t be any sales or profit associated with it. If you have any other questions, please let me know. Thank you for helping to promote OTs role in this area!

Sincerely,

Laura

Laura Collins
Director of Communications
American Occupational Therapy Association, Inc.
4720 Montgomery Ln. Suite 200
Bethesda, MD 20814-3449
301-652-2582 x2866
301-652-7711 (Fax)

To whom it may concern,

My name is Kaitlyn Radi and I am an occupational therapy student at UND. Anna Schumacher (another UND student) and I are working on our scholarly project which is a guide for occupational therapists describing the role of occupational therapy in primary care oncology. May we use the "Role of Occupational Therapy in Oncology Fact Sheet" as a resource for occupational therapists to reference for our guide?

Thanks,

Kaitlyn Radi, MOTS
Anna Schumacher, MOTS
FW: Role of OT in Oncology Fact Sheet

Radi, Kaitlyn <kaitlyn.radi@my.und.edu>

Sat 12/14/2013 3:45 PM

To: Schumacher, Anna <anna.schumacher@my.und.edu>

From: Sheila Longpre <longpre@nova.edu>
Sent: Monday, November 18, 2013 3:31 PM
To: Radi, Kaitlyn
Subject: RE: Role of OT in Oncology Fact Sheet

Kaitlyn:
Of course! Good luck on your project.

In addition, if you have not checked these out yet, you should read *The Role of the Occupational Therapist in Oncology* by Sarah L. Penfold and the book *Occupational Therapy in Oncology and Palliative Care* by Jill Cooper. They are amazing resources.

Sheila M. Longpre’

Sheila M. Longpré, MOT, OTR/L
Assistant Professor and Director of Clinical & Community Relations
Entry Level Doctor of Occupational Therapy (OTD) Program
Nova Southeastern University - Tampa
College of Health Care Sciences, Department of Occupational Therapy
3632 Queen Palm Drive, Tampa, FL 33619-1378
P: 813.574.5346 / F: 813.574.5330 / E: longpre@nova.edu
Immediate Assistance: 813.574.5340

From: Radi, Kaitlyn [mailto:kaitlyn.radi@my.und.edu]
Sent: Monday, November 18, 2013 3:12 PM
To: Sheila Longpre
Subject: Role of OT in Oncology Fact Sheet

Professor Sheila Longpré,

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https://pod51035.outlook.com/owa/...
Thanks for your time,

Kaitlyn Radi. MOTS
Anna Schumacher, MOTS
Appendix B.

Pamphlet
Occupational Therapy

Joining the oncology care team

Living Life to its Fullest!

Reasons For OT:

- Save time
- Background in psychosocial, cognitive, and physical disabilities
- Work in health promotion and prevention
- Skilled in activity analysis
- Knowledge of assistive technology and adaptive
- Group/family education
- Behavior modification
- Lifestyle interventions
- Provide consultation for families/caregivers
- Support groups

OT Role

- Consult patient and family
- Inform patient about how symptoms & treatments affect functional performance
- Offer support for family and patient
- Provide resources
- Educate family and patient
- Provide alternatives for occupational participation
- Offer a plan for coping with life transitions (stages of cancer)
- Supply strategies for supporting and accepting diagnosis
- Communicate with doctor about treatment plan
- Group education

For More Information:

OTIS.org
INDIOTA.org
FW: permission

Radi, Kaitlyn <kaitlyn.radi@my.und.edu>

Sat 12/14/2013 3:43 PM

to: Schumacher, Anna <anna.schumacher@my.und.edu>

From: Linda <radilinda21@gmail.com>
Sent: Saturday, December 14, 2013 3:20 PM
To: Radi, Kaitlyn
Subject:

We give permission to Kaitlyn Radi and Anna Schumacher to use the photo of us.

Sincerely,

Linda Radi
Larry Radi

Sent from my iPhone
Appendix C.

Referral Form
Referral for OT

This referral form is intended to be completed by the oncologist to complete during treatment session. The terms used throughout the referral coincide with the concepts from MOHO used throughout the guide. Each item is defined for clarity and is relevant for the occupational therapists to decipher areas of need for the patient.

MOHO Concepts

1. **Volition:**
   Personal Causation (the patient’s ability, the patient’s definition of success, and understanding of his or her strengths and limitations, having a sense of control)

   Values (what the patient considers highly important in his or her life; i.e. valuing doing a good job at work or valuing being with family)

   Interests (what the client enjoys doing or wants to do)

2. **Habituation:**
   Roles (the patient’s identity based on what he or she does for a living. A patient may have multiple roles: i.e. the role of a mother, father, worker, wife, husband, student, etc.)

   Habits (the patient’s usual way of doing things)

3. **Performance Capacity and Skills:** skills the patient has whether motor, psychologically, socially, etc.

4. **Environment:** physical and social aspects of an environment. (i.e. social aspects=co-workers, family members, peers, strangers, etc., physical aspects=office space, lighting, noise level, home, etc.)
OT Referral

Client Name:_______________

Physician:_______________

DOB:_______________

Date:_______________

Is the client wanting or indicating a need for occupational therapy in the following areas? (Circle “yes” or “no”)

1. Volition
   Personal causation: Yes  No
   Values: Yes  No
   Interests: Yes  No

2. Habituation
   Roles: Yes  No
   Habits: Yes  No

3. Performance
   Capacity & Skills Yes  No

4. Environment Yes  No

Adapted from © 2004 Derbyshire Mental Health Services NHS Trust. U.K./S. Cratchley, S. Parkinson, S. Town. S. Waiting, with thanks to A. Lucas & K. Wilshere.
Appendix D.

Additional Resources
Additional Resources

Books:


Websites:


Cancer-related Organizations:

- Cancer Centers of America
- Center for Disease Control and Prevention
- John Hopkins
- Mayo Clinic
- The University of Texas M. D. Anderson Cancer Center
- The American Cancer Society
- World Health Organization

Journals of Interest:

- *Acta Oncologica*
- *Cancer Causes and Control*
- Cancer Treatment Reviews
- Critical Reviews in Oncology/Hematology
- European Journal of Cancer
- Journal of Clinical Oncology
- National Comprehensive Cancer Network
  AJCC Cancer Staging Manual (6th ed.).
- Psycho-Oncology
Appendix E.

FAQs
Frequently Asked Questions (FAQ’s)

1. How do I begin working as an OT into oncology specialist care?
   - Contact an oncology facility
   - Make an appointment to meet with the oncologist
   - Provide the oncologist with the letter displayed in the APPENDICES
   - Discuss with colleagues
   - Raise awareness of the importance of OT

2. Where can I go to find out more about specific types of cancer or cancer treatments? For more resources on oncology see Appendix D.

Books:

Websites:
     http://www.mayoclinic.com/health/cancer/D5090

Organizations:
   - World Health Organization
   - John Hopkins Hospital
   - The American Cancer Society
3. How are occupational therapists reimbursed in oncology specialist care?

Reimbursement happens when a physician refers an occupational therapist. Occupational therapists network with oncologist and staff to obtain referrals. Referral form and fact sheet will aide in advocating for occupational therapy’s role in oncology, specifically oncology specialist care (see Appendix E. and F.) for referral form and fact sheet.
Appendix F.

MOHO Outcome Assessments
<table>
<thead>
<tr>
<th>CONCEPT</th>
<th>NAME (Author)</th>
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<tbody>
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<td>rating scale</td>
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<td>Screening tool Observation Outcome Measure</td>
<td>Determine the need for services and level of occupational functioning using the concepts of MOHO</td>
<td>Varies (days to weeks)</td>
<td>Adults with psychosocial and/or physical impairments</td>
</tr>
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</table>
Appendix G.

Oncology Assessments
Oncology Assessments

Occupational Therapy Assessments for Oncology

<table>
<thead>
<tr>
<th>Assessment (Author)</th>
<th>Type</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brief Fatigue Inventory (The University of Texas M. D. Anderson Cancer Center)</td>
<td>Physical</td>
<td>Determines the level of cancer-related fatigue and how it impacts daily living (Hatchett &amp; Beller, 2012).</td>
</tr>
<tr>
<td>Functional Independence Measure (FIM) (Uniform Data Services for Medical Rehabilitation)</td>
<td>QOL</td>
<td>Evaluates self-care, continence, mobility, transfers, communication, and cognition and the patient's level of independence in each area (Huang, Wartella, &amp; Kreutzer, 2001).</td>
</tr>
<tr>
<td>Quality of Life Index for Cancer (Fernans &amp; Powers)</td>
<td>QOL</td>
<td>Examines satisfaction and importance in various areas of life (Lindblad, Ring, Glimelius, &amp; Hansson, 2002).</td>
</tr>
<tr>
<td>Valued Activity Inventory for Adults with Cancer (VAI-AC) (Lyons, Fiegel, Hull, Li, Halan, &amp; Bartels)</td>
<td>QOL</td>
<td>Assesses physical and mental function, symptom intensity, and mood (Lyons et al., 2012).</td>
</tr>
<tr>
<td>Cambridge Cognitive Examination (CAMCOG) (Roth et al.)</td>
<td>Cognitive</td>
<td>Assesses orientation, language, memory, praxis, calculation, abstract thinking and perception (Minisini et al., 2008).</td>
</tr>
<tr>
<td>Mini Mental State Exam (Folstein et al.)</td>
<td>Cognitive</td>
<td>Screen for cognitive issues in cancer patients (Locke et al., 2007).</td>
</tr>
<tr>
<td>Montreal Cognitive Assessment (MoCA) (Nasreddine et al.)</td>
<td>Cognitive</td>
<td>Screen for mild cognitive impairments, including small changes (Baxter, Dulworth, &amp; Smith, 2011).</td>
</tr>
<tr>
<td>Beck Depression Inventory-II (BDI-II) (Beck, Steer, &amp; Brown)</td>
<td>Psychological</td>
<td>Assess the level of depression in patients with cancer (Hatchett &amp; Beller, 2012).</td>
</tr>
</tbody>
</table>

Appendix H.

Top 13 Cancers in U.S.
Top 13 Most Common Cancers in U.S.

<table>
<thead>
<tr>
<th>Type of Cancer</th>
<th>Symptoms</th>
<th>Treatments</th>
</tr>
</thead>
</table>
| Prostate       | Symptoms rarely develop in isolation.  
                 - Pain  
                 - Fatigue  
                 - Incontinence  
                 - Erectile Dysfunction  
                 - Hot flashes  
                 - Fatigue  
                 - Loss of libido  
                 **Symptoms rarely develop in isolation.** | Radiation/surgery  
                                           Hormonal therapy |
| Breast         | Lymphodema  
                 - Fatigue  
                 - Hot flashes  
                 - Inflammation  
                 - Pain  
                 - Dyspnea  
                 - Cachexia  
                 - Depression  
                 - Metastasis  
                 - Nausea and vomiting  
                 - Lymphoma (<.1%) | Adjuvant chemotherapy  
                                           Radiation  
                                           Surgery  
                                           Endocrine therapy |
| Lung           | Shortness of breath  
                 - Coughing  
                 - Wheezing  
                 - Coughing up blood  
                 - Chest pain  
                 - Respiratory infections (bronchitis or pneumonia) | Chemotherapy  
                                           Radiation  
                                           Surgery |
| Bronchus       | Constant chest pain  
                 - Shortness of breath  
                 - Wheezing  
                 - Bloody/rust-colored sputum  
                 - Hoarseness  
                 - Tumor | Surgery (removal of part of the bronchus) |
| Colon         | Bright red/dark red blood in stool | Surgery  
|              | Change in bowel movements         | Chemotherapy  
|              | Constipation                      | Radiation  
|              | Thinner stool                     |           
|              | Abdominal discomfort              |           
|              | Weight loss                       |           
|              | Constant fatigue                  |           
|              | Vomiting                          |           |
| Rectum       | Pain                              | Surgical  
|              | Bowel obstruction                 | Radiation  
|              | Fistul/sphincter damage           | Chemotherapy |
| Corpus       | Unusual vaginal bleeding, spotting, or discharge | Hysterectomy  
|              | Vaginal bleeding after menopause  | Radiation  
|              | Frequent urination                | Chemotherapy  
|              | Painful urination                 | Radiation  
|              | Pain during sexual intercourse    |           
|              | Pain in the pelvic area           |           |
| Uterus       | Pelvic/Upper abdomen/lung failure  | Hormonal  
|              | Pelvic pain/pressure              | Chemotherapy  
|              | Abnormal vaginal bleeding or discharge (CDC) | Radiotherapy |
| Bladder      | Blood in urine                    | Radiation  
|              | Increased frequency of urination  | Surgery  
|              | Pain or burning with urination    |           
|              | Incomplete emptying of bladder    |           |
| Melanomas of skin | Change in the size, shape, or color of a mole | Biopsy  
<p>|              | Oozing or bleeding from a mole    |<br />
|              | Itchy, hard, lumpy, swollen       |           |</p>
<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Symptoms</th>
<th>Treatments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Hodgkin's lymphoma</td>
<td>- Painless swelling in lymph nodes&lt;br&gt;- Fever&lt;br&gt;- Night sweats&lt;br&gt;- Fatigue&lt;br&gt;- Weight loss&lt;br&gt;- Skin itch&lt;br&gt;- Recurring infections&lt;br&gt;- Abdominal swelling&lt;br&gt;- Facial/arm swelling&lt;br&gt;- Cough&lt;br&gt;- Shortness of breath</td>
<td>Chemotherapy&lt;br&gt;Radiation&lt;br&gt;Biologic therapy&lt;br&gt;Surgery</td>
</tr>
<tr>
<td>Kidney</td>
<td>- Blood in urine&lt;br&gt;- Rapid, unexplained weight loss&lt;br&gt;- Low back pain&lt;br&gt;- Loss of appetite&lt;br&gt;- Swelling in ankles/legs&lt;br&gt;- Mass/lump on side or lower back&lt;br&gt;- Fatigue&lt;br&gt;- Recurrent fever&lt;br&gt;- High blood pressure&lt;br&gt;- Anemia&lt;br&gt;- Unrelieved pain in the side</td>
<td>Radiation&lt;br&gt;Targeted Therapy&lt;br&gt;Biological Therapy&lt;br&gt;Chemotherapy&lt;br&gt;Arterial embolization&lt;br&gt;Surgery</td>
</tr>
<tr>
<td>Thyroid</td>
<td>- Hoarseness or loss of voice&lt;br&gt;- Difficulty swallowing&lt;br&gt;- Throat or neck pain&lt;br&gt;- Breathing problems&lt;br&gt;- A cough</td>
<td>Radiation&lt;br&gt;Surgery&lt;br&gt;Thyroid Hormone Therapy&lt;br&gt;Radioactive iodine&lt;br&gt;Pharmaceuticals</td>
</tr>
</tbody>
</table>

References:


Chapter V

SUMMARY

Conclusion

Based on analysis of the professional literature available, it is concluded that there is a need for occupational therapists to work with adults as part of the oncology specialist care team. The guide developed for this scholarly project is designed to provide a model for occupational therapy oncology specialty care. The guide informs therapists interested in oncology specialist care of the therapy process in this setting based on the model of human occupation. In addition, resources for professional advocacy are provided, including a pamphlet to teach oncologists about occupational therapy, resource references on oncology, frequently asked questions, and a fact sheet on the role of occupational therapy in oncology from AOTA. The only level of care in oncology that had a significant amount of literature and a defined occupational therapy role was in palliative care. Oncology specialist care literature consists of medical treatments that doctors utilize in cancer and does not include occupational therapy services. Future research should be conducted to explore and confirm the role of occupational therapy in oncology specialist care, as well as the efficacy of using the model of human occupation in this practice specialty area.

Another limitation is that the guide is directed solely at adults diagnosed with cancer; nor are specific types of cancer addressed separately. It is difficult to specify symptoms and treatments without knowing the diagnosis (cancer type) of the individual.
It is recommended that future endeavors develop guides that address specific cancers, as well as pediatric and youth populations in oncology specialist care settings. In doing so, occupational therapy interventions could be tailored to the individual’s cancer type, symptoms, and treatments.

Another limitation is that the literature does not document occupational therapists currently practicing in oncology specialist care. It is recommended that those interested in pursuing work in oncology specialist care will need to develop their own network of health care providers, especially occupational therapists. Using the materials in the appendix of the guide to advocate, tools are provided to easily communicate with doctors and other professionals informing them of the value of occupational therapy and how the role of occupational therapy is pertinent to the oncology population. These include a pamphlet informing the oncologist of the occupational therapy role and a referral for the oncologist to use to refer patients to occupational therapy.

A final recommendation for future action regarding the role of occupational therapy in oncology specialty care is to provide continuing education in the form of therapist workshops for occupational therapists interested in entering the oncology specialty care or any level of care in oncology and instructions on how to utilize the guide properly and general information regarding individuals with cancer. A general review of the levels of cancer care, as well as education regarding use of the guide could be provided. Opportunities to network with therapists engaged in similar practice would be provided.

The first step of implementation of this scholarly project is through an oral comprehensive examination on December 5, 2013 and a University of North Dakota
School of Medicine and Health Sciences Frank Lowe Research Day poster presentation in April 2014. The guide will be described and available for peer, faculty, and other clinician review.
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