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Resources for Assisting Elderly Individuals with Insomnia: An Occupational Therapy Perspective

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Resources for assisting elderly individuals with insomnia: An occupational therapy perspective

by

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A Scholarly Project
Submitted to the Occupational Therapy Department
of the
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This Scholarly Project Paper, submitted by Michelle Linn Anderson 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.

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ABSTRACT

The purpose of this scholarly project is to provide a resource manual for elderly individuals, and those providing care to elderly people, to assist the individual in relieving symptoms of insomnia. Insomnia affects elderly individuals worldwide. Studies document that approximately 50% of individuals in the United States over the age of 65 are noted to have either clinically diagnosed or self-diagnosed insomnia (National Institute of Neurological Disorders and Stroke, 2007). As the population worldwide continues to age, it is important that occupational therapists, elderly individuals, family members and care providers be aware of the impact that symptoms of insomnia may have on an individual. Occupational therapists can take a proactive role that is within their scope of practice, to assist clients in achieving a restful nights sleep, and improving in abilities to function during daily tasks and routines while also preventing injury.

Evidence obtained through a comprehensive literature review confirms that symptoms of insomnia can have a negative impact on an individual’s participation and mastery in meaningful occupational tasks of daily living. Studies have shown that sleep deprivation often leads to several negative side effects such as “depression, heart disease, hypertension, irritability, slower reaction times” or an overall decreased ability to function the next day (Sleep Deprivation, 2010, para. 4). Other symptoms may include: trouble falling asleep and/or staying asleep, and during wakefulness: reduced awareness and focus, trouble with memory, decreased or weakened motor organization leading to clumsiness, irritability, offensive social communication or conduct, or motor vehicle
accidents secondary to exhaustion and sleep deprivation (American Sleep Association, 2010; WebMD, 2010).

The product of the scholarly project is a resource manual created to increase client, family and caregiver awareness about insomnia, accompanying symptoms, and holistic treatment ideas to increase sleep hygiene and participation in daily living tasks. Within the guide, several different aspects of insomnia are broken down, including some of the negative side effects that may occur with sleep loss. The manual also provides holistic ways in which to treat side effects, including consulting with a doctor, as well as becoming a self-directed and motivated learner in improving ones overall quality of life through participation in meaningful occupations of daily living.
CHAPTER I
INTRODUCTION

Perhaps one of the most influential factors affecting the lives of those over the age of 65 is the quality of sleep that each person is getting every night. Currently, half of the population within the United States (US) is plagued with problems of falling asleep, staying asleep or getting enough sleep due to symptoms of insomnia (National Institute of Neurological Disorders and Stroke, 2007). Many individuals who have insomnia do not report it; however, it is estimated that insomnia and sleep problems can impact up to 80% of all elderly individuals (Cherniack, 2006; Kim & Sok, 2007). With this growing problem, geriatric individuals, family members, and care providers wrestle with the effects of sleep deprivation and the impact insomnia has on daily living participation. Therefore, occupational therapists are faced with the challenge of decreasing and eliminating symptoms of insomnia through client-centered, evidence-based methods.

Perhaps the first step in solving the problem of insomnia is recognizing that an inadequate or interrupted night of sleep does negatively affect an individual’s quality of life. An extensive review of published materials was completed to determine what, if any, common stereotypes or misconceptions exist about geriatric individuals who have insomnia. For example, according to Greene (2008), one of the most common stereotypes is that an elderly person needs less sleep, when in fact, he or she still requires the same amount of sleep as in his or her 50’s (Greene, 2008).
Through a review of the literature, application of clinical reasoning skills, conversations with professional experts as well as elderly individuals, it was determined that a resource manual is needed by individuals over the age of 65 to help alleviate his or her symptoms of insomnia. The intended audience of this scholarly project and resource manual include occupational therapists, as well as his or her geriatric clients and/or families with elderly members who have decreased quality of sleep due to insomnia. The manual can also be used within sleep clinics, regional hospitals, nursing homes or other settings where elderly individuals with insomnia may reside or receive occupational therapy services.

Approximately 80 evidence-based resources were analyzed, synthesized, and incorporated into the manual. The resource manual clearly defines medical terminology in consumer friendly terms, describes sleep hygiene, and provides therapeutic approaches to be used under the guidance of the physician and occupational therapist. Additional features include several activities to challenge the reader on what he or she has learned, as well as strategies about how to apply learned skills.

Two theoretical models are used: the Canadian Model of Occupational Performance (CMOP) and principles of Adult Education Theory. The CMOP emphasizes client-centered practice by the occupational therapist and it can be easily understood by members of the geriatric community (Townsend & Polatajko, 2007). It contains an assessment that provides client-centered information, goal setting, and theoretical usefulness in generating reading materials for clients used in therapy (e.g. sleep journal or sleep hygiene program) (Law, 2005).
Chapter two provides a complete review of literature. Chapter three describes the methodology used to guide the creation of the resource manual. Chapter four provides a summary of the product; the complete resource manual can be found in the appendices. The final chapter of this project, chapter five, reviews key findings and describes strategies for implementing and evaluating the usefulness of the product.
CHAPTER II
REVIEW OF LITERATURE

Introduction

Insomnia affects elderly individuals worldwide. Studies document the following: Forty-four percent of elderly individuals within one Italian province described having insomnia (Bonanni, Tognoni, Maestri et al., 2009), 32.9% of all people in China (Liu & Liu, 2005), and 50% of US geriatric individuals are noted to have either clinically diagnosed or self-diagnosed insomnia (National Institute of Neurological Disorders and Stroke, 2007). Other studies found insomnia and sleep problems impact up to 80% of all elderly individuals (Cherniack, 2006; Kim & Sok, 2007). Since sleep is included in the Occupational Therapy Practice Framework, it is essential that occupational therapists clearly recognize the role occupational therapy can perform in helping clients achieve a restful sleep and subsequently improve functional abilities during daily tasks and routines while also preventing injury secondary to the effects of insomnia (American Occupational Therapy Association, 2008).

New research studies indicate that many people are experiencing the physical and psychological effects of sleep loss, thus indicating the need for therapists in geriatric settings, including in-patient, out-patient, and the community-based well elderly to treat insomnia (Bonanni et al., 2009; Creighton, 1995; Isaia et al., 2010). From these studies, the problems associated with poor sleep or quality of sleep emerges, as well as indications for treatment. Thus, several key points illuminate how an occupational
therapist working with elderly individuals in declining function may also investigate whether poor functioning is the result of inadequate patterns of sleep. The literature review highlights information needed by occupational therapists to understand insomnia, and the impact insomnia has on an elderly individual’s ability to function and enjoy a high quality of life. The sections of the review include: definitions of key terms, a description of sleep cycles, insomnia, and health conditions associated with insomnia. Current research regarding treatment, sleep hygiene programs and holistic approaches are also discussed to provide a basis of knowledge for occupational therapy practitioners, family members and elderly individuals with insomnia. Finally, the role of occupational therapy with clients experiencing insomnia is described.

Definitions

Over the past ten years, numerous studies have been completed with elderly individuals concerning problems with a lack of sleep. However, within each of these different studies the definitions of insomnia and quality of sleep greatly vary. To promote further understanding and clarification of these definitions, research has been conducted and the writer has chosen the most suitable definition based upon the purpose and proposed outcome of the intended product: a resource manual.

Insomnia is defined as being or incorporating “(a) difficulty initiating sleep (sleep onset), maintaining sleep (sleep maintenance), and/or poor quality of sleep (nonrestorative sleep) for at least one month and (b) causing clinically significant distress of impairment in social, occupational, or other areas of functioning” (Krishnan & Hawranik, 2008, p. 591). Such a comprehensive definition accommodates all individuals who have sleep problems.
For purposes of the product, geriatric individuals are described as any person who is over the age of 65. Even though the definition of elderly is ever changing, this age is chosen based upon the definitions provided in several of the studies utilized in the paper and product (Bonanni et al., 2009; Isaia et al., 2010; Kim & Sok, 2007).

Quality of sleep is a client described, self-reported value and is based on the individual’s feelings of drowsiness upon rising after sleeping and continued sleepiness throughout the day, the sense of feeling rested and rejuvenated upon arising, and the number of times that an individual wakes up during the time that he or she was sleeping (Harvey, Stinson, Whitaker, Moskovitz, & Virk, 2008).

Sleep

Those proposing interventions for improving restful sleep should develop a fundamental understanding of sleep, specifically sleep cycles. It has been noted that sleep has been separated into two basic phases and four fundamental substages. The two primary phases include rapid eyemovement (REM) and non-rapid eyemovement (NREM) sleep (Avidan, 2003). The four substages of NREM sleep include: (1) decreased bodily movement with the individual’s eyes closed, (2) light sleep and (3-4) slow wave or delta wave sleep (WebMD, 2010). Thus, if an individual is receiving adequate or a good quality of sleep each night he or she will cycle through these phases and stages approximately four to five times each night (Chudler, 2010).

When delving deeper into the topic of REM and NREM sleep, it is important to recognize why each phase is important and what happens if an individual does not receive an adequate amount of sleep. REM sleep has been defined as, a state of sleep that continuously cycles throughout the night during which dreaming and rapid eye
movements are present (Mosby, 2006). Additionally, during this time an individual’s brain shows neuronal activity in areas of the forebrain and midbrain with the release of the hormone cortisol (Dement & Vaughan, 1999). The essential function of REM sleep is to control and balance affect-related information that an individual has received throughout the day into a storage arrangement that has previously been confirmed as successful (Gibbs, 2009).

Brain researchers have noted that during the time of REM sleep the following brain areas are active: “left premotor area, left primary motor and sensory cortices, left inferior parietal lobule and bilateral occipital areas (precuneus, cuneus and lingual gyrus)” (Ogawa, Abe, Nittono, & Yamazaki, 2010, p. 1). Other study findings have determined sleep related brain function is correlated with how an individual can become successful with both his or her visuomotor skills and ability to analyze and categorize the immense amounts of information that he or she may need to become aware of for use in the future (Peigneux et al., 2003). Meanwhile research also determined that elderly individuals with insomnia may have difficulty accessing short and long term memories, while also noting a high correlation between insomnia and the onset of early dementia (Rongve, Boeve, & Aarsland, 2010).

While 20% of an individual’s sleep time is spent in rapid eye movement sleep, it is also necessary to be more aware of the impacts of NREM sleep as well. NREM sleep is currently thought of as more important than REM sleep, even if only for the reason that an individual spends approximately 80% of his or her time in this phase each night (Chudler, 2010). The specific definition of NREM sleep has been characterized as “quiet sleep” because all of the following functions are decreased: blood pressure, breathing,
brain temperature and bodily movements (Dotto, 1990). The overall function of NREM sleep is to help heal or rejuvenate an individual’s body through signaling the brain to increase the number of antibodies that are being made. This process allows the individual to ensure that he or she has the necessary assistance that is required in promoting tissue restoration and correcting any maladaptive biological rhythms (McNeil, 2007).

Insomnia

It is important to understand the different types of insomnia and which types of insomnia more frequently impact elderly individuals. Dr. Ammar Hussieno noted that “elderly individuals often have problems with their circadian cycle being disturbed” (A. Hussieno, personal communication, May 29, 2010). Individuals who have this problem generally do not have difficulties falling asleep or getting enough sleep, but rather they more commonly go to bed at 8:00 p.m. and rise at 4:00 a.m. It has been noted that up to 20% of the 9,000 community-based geriatric clients who participated in a sleep survey indicated that they suffered from waking too early in the morning (Foley et al., 1995; Welsh & Ptácek, 2009).

Insomnia can be organized into two general classifications, “chronic (ongoing) or acute (short-term)” (U.S. Department of Health and Human Services, 2010). Chronic insomnia means having symptoms such as the inability to initiate and/or continue to sleep for a minimum of three nights a week for more than a month. Acute insomnia generally lasts for a shorter time period. Insomnia may be associated with, or caused by, “psychological problems, medical problems, poor lifestyle choices and poor sleep habits” (Hauri & Linde, 1990, p. 23). Since clients may feel belittled if an occupational therapist
or family member brings up some of these topic areas, it is important to communicate in a supportive tone rather than in a negative or criticizing tone.

Regardless of sleeping patterns or types of insomnia an individual has, there are several common stereotypes or misconceptions about geriatric individuals who have insomnia (Greene, 2008). Many times, people assume that an elderly individual’s general lack of sleep is due to the fact that as people age they need less sleep. However, it can be noted that as individuals age, they still need the same amount of sleep as they did when they were in their 50’s (Greene, 2008). As people age (65+) they often have difficulty getting to sleep and staying asleep due to a mixture of medical concerns such as “high blood pressure, medication side effect and bad habits” (Stibich, 2007, para. 3).

Additionally, it is a common misconception that taking a simple sleeping pill will cure any sleeping problems that an individual might have (Greene, 2008). Sleeping pills can potentially be seriously detrimental to an elderly individual’s overall health (Charles, 2007). Research has indicated that sleeping pills are not meant for extended use because they can potentially cause addiction, rebound insomnia, daytime drowsiness, short-term amnesia, reduced respiration and motor vehicle accidents (Hauri & Linde, 1990). Most sleep medicines include cautionary statements about possible side effects and contraindications that may occur upon usage (Kripke, 2008).

The final common stereotype about sleep is that every person needs eight full hours of sleep in order to properly function with his or her tasks of daily living. Even though national studies have concluded that the average adult needs approximately seven to eight hours of sleep each night, the precise amount will vary based upon each individual and his or her circadian cycle (University of Maryland Medical Center, 2010).
The most common night-time symptoms associated with insomnia include trouble falling asleep and/or staying asleep, often due to racing thoughts (American Sleep Association, 2010). Daytime symptoms from insomnia are often comprised of reduced awareness and focus, trouble with memory and decreased or weakened motor organization. Additional symptoms include being clumsy, irritable and offensive with social communication or conduct and motor vehicle accidents because of exhausted, sleep-deprived drivers (WebMD Inc., 2010). Such symptoms are the most documented reasons why individuals seek medical services, often resulting in a further referral to a psychiatrist, though this may or may not be the answer that the individual was originally seeking (Greene, 2008).

**Health Conditions Associated with Insomnia**

One may note that not only can insomnia be due to health conditions, but it can also cause other health concerns to arise. Studies have shown that sleep deprivation often leads to several negative side effects such as “depression, heart disease, hypertension, irritability, slower reaction times” or an overall decreased ability to function the next day (Sleep Deprivation, 2010, para. 4). Decreased sleep impacts an individual's quality of life and engagement in meaningful occupations (Gillam, 2009). Often the effects of insomnia become a “what-came-first” scenario: insomnia or depression, hypertension or insomnia, insomnia or diabetes, and so forth (M. Stout, personal communication, April 8, 2010).

In addition, those with a deficiency of Vitamin D within his or her body often are more likely to have acute insomnia (Deliz, 2008). In a related research study, one clinician noted that by having women take a Vitamin D₃ supplement they showed dramatically lower levels of osteoporosis and insomnia (Rennekamp, 2010). Thus, it is
highly recommended that women prevent both problems by taking a daily supplement of Vitamin D₃.

A similar study found that individuals who do not have enough melatonin may have an increased chance of developing abnormal circadian sleeping patterns or behavioral concerns (Braam et al., 2010). Melatonin is created by the pineal gland in an individual’s brain. Activities as simple as stretching, yoga or meditation may naturally increase the level of melatonin within an elderly individual’s body (Wong, 2008). Research also finds that individuals who engage in a daily exercise program report amplified energy levels, healthy appetite, better quality and quantity of nightly sleep, and positive mood (Amen, 1998). Those with insomnia related problems should first consult his or her physician to determine if his or her insomnia is acute and can potentially be corrected with the use of a daily Vitamin D₃ supplement or the implementation of an exercise program.

It has been noted that an overall lack of sleep, whether due to previous health conditions or insomnia, generally leads to decreased functioning with basic activities of daily living, instrumental activities of daily living, work, leisure or other social activities (Avidan, 2003; Krishnan & Hawranik, 2008). Based upon extensive exploratory studies, researchers now know that elderly individuals who do not get enough sleep have an increased chance of attaining a hip fracture due to impaired visuomotor control (Avidan et al., 2003). Additionally, those who are having poor sleep are also more likely to be in a motor vehicle accident due to decreased reaction times (Lyznick, Doege, Davis, & Williams, 1998). Perhaps the most pressing problem resulting from insomnia is the decline in cognition, and therefore; also in learning (Haimova, Hanukaa, & Horowitz,
2008; Maquet, 2001). Thus, assisting elderly individuals with insomnia to alleviate his or her symptoms of insomnia must include resolving possible sleep-related cognitive deficits. Addressing sleep and cognition will ensure the individual has better potential for changing maladaptive sleep hygiene habits or environmental influences.

Overview of Treatment Approaches

Sleep Hygiene Programs

One common theme found within all of the articles, both inside and outside of the US, include the importance of recognizing the external factors that may impact sleep. This process is described as part of a sleep hygiene program. A sleep hygiene program is “a common term for a collection of behaviors which relate to the promotion of good sleep, and are the primary focus of most sleep education and primary care interventions” (Ellis, Hampson, & Cropley, 2002, p. 157). A good sleep hygiene program might include limiting caffeine, alcohol and nicotine that an individual uses daily, creating a daily exercise routine and looking at the individual’s sleep environment to make sure that it is dark, comfortable and sleep conducive (Ellis et al., 2002). A sleep hygiene program, when combined with medications, often achieve the best results.

Even though adding a sleep program to an elderly individual’s daily routine is the most commonly mentioned protocol throughout the research, it has been questioned whether it is the “gold-standard” treatment method (A. Hussieno, personal communication, May 29, 2010). In a phone interview, Dr. Ammar Hussieno, a sleep specialist located in Casper, Wyoming, noted that he achieves the best results with his elderly clients through the use of combining medications such as Ambien with cognitive behavioral therapy (A. Hussieno, personal communication, May 29, 2010).
Other research studies indicate that the best treatment method for insomnia in older clients would be to take a holistic outlook by combining many different therapeutic treatment methods (Avidan, 2003; Krishnan & Hawranik, 2008) such as: consulting a physician, having the client keep a sleep journal/diary, utilizing a tool (similar to a wrist band) to record bodily movements at night, asking questions about daytime symptoms and interviewing the individual whom he or she sleeps with (or other family members/care providers if the person sleeps alone at night) (Avidan, 2003; Wyoming Medical Center, 2010; McKenna, 2009).

Other approaches include recording a client’s daily routine or habits that might impair sleep patterns/routines at night, documenting the use of over-the-counter as well as prescribed medications. Additional approaches may consist of the individual going to a sleep clinic for specific testing, having the client identify possible maladaptive sleep hygiene habits, eliminating external noise, maintaining a regular sleep schedule and regulating lighting and activities within the bedroom (Avidan, 2003; Wyoming Medical Center, 2010; McKenna, 2009).

Sleep journals or diaries are utilized as effective tools in several studies. The primary purpose of these journals is to record when the client sleeps, awakens, and in some cases what he or she may have dreamed about during sleep (Friedman et al., 2009; Sleep Deprivation, 2010). It is important to note that when combining this intervention tool with a sleep hygiene program the most beneficial results occur when the client has increased awareness of his or her sleep habits. The most structured sleep hygiene program requires elderly clients to not utilize over-the-counter sleep aids, avoid afternoon rest breaks and to consume no more than two cups of coffee before lunch or one glass of
an alcoholic beverage. The program also requires that individuals maintain a consistent mealtime and bedtime routine, keep the bedroom only for sleeping or romantic purposes, document his or her daily concerns, and take a hot bath or shower approximately two hours before his or her designated sleeping time (Friedman et al., 2009).

**Holistic Approaches**

Holistic approaches for treating insomnia focus on alternative treatment methods that do not include pharmaceuticals. Holistic health is defined as a clinician’s ability to look at a client’s physical, emotional, mental and spiritual needs during treatment. A holistic approach searches for the underlying origin of an individual’s symptoms versus administrating a drug to momentarily cure the client’s symptoms (Perkins, 2007). For those individuals who require more help than just writing in a sleep journal or participating in a sleep program, there are several alternative options that they can utilize that do not require medication. Some of these herbal supplements and techniques were described earlier. Multiple case studies have noted the use of drinking a tart juice may be beneficial. One such study indicated that “CherryPharm, a tart cherry juice blend, has modest beneficial effects on sleep in older adults with insomnia with effect sizes equal to or exceeding those observed in studies of valerian and in some, but not all, studies of melatonin, the two most studied natural products for insomnia” (Pigeon, Carr, Gorman, & Perlis, 2010, p. 1). Although some herbal remedies may have a therapeutic benefit, the herbal industry is unregulated and inconsistent, leading to a “buyers beware” situation.

**Yoga**

Yoga can also play a role in helping elderly individuals to sleep better. Recent research results indicate that individuals who participate in yoga demonstrate not only a
better quality of sleep, but also improvement in his or her overall ability to function and participate within daily tasks (Chen et al., 2010). Other benefits of participating in a yoga program are found to include an overall decline in the amount of time it takes an individual to fall asleep; an increase in the amount of sleep that an individual receives each time that he or she sleeps; and a dramatic improvement in the overall general perception of feeling well rested (Manjunath & Telles, 2005). One possible reason for such significant outcomes is that yoga programs are said to be “easy-to-learn and tolerable to perform” by elderly individuals with insomnia who participated in one research study (Khalsa, 2004).

Auricular Acupuncture

Auricular acupuncture is a “therapeutic method by which specific points on the auricle is stimulated to treat various conditions” (Lee, Shin, Suen, Park, & Ernst, 2008, p. 1744). Currently auricular acupuncture and other Eastern therapeutic approaches have begun to become more widely known and used within the United States. Researchers noted that individuals who participated in auricular acupuncture had a dramatic alleviation of symptoms for up to a two-week period (Kim & Sok, 2007). Combining auricular acupuncture with transcutaneous electrical acupoint stimulation and acupressure obtained the best results (Cheuk, Yeung, Chung, & Wong, 2007). In a British study, results indicated that auricular acupuncture is proven to be more effective in improving sleep quality than music therapy treatment (Hughes et al., 2009). Best overall results for auricular acupuncture occurred when combined with either herbal remedies or prescription medications (Cao, Pan, Li, & Liu, 2009).
Bright Light Therapy

Light therapy is being studied as a means to treat geriatric clients with insomnia; however, results are yet consistently unproven (Montgomery & Dennis, 2002). Proponents of bright light therapy recommend seating an individual needing treatment in front of a light box giving off high (approximately 10,000 lux) fluorescent light for approximately two hours each day (Montgomery & Dennis, 2002). Allegedly, bright light therapy is most useful when helping elderly individuals regulate or reset his or her circadian rhythm cycles and/or behavior with regard to sleep habits (Gammack, 2008). Results from other studies confirmed that use of light therapy not only changed an individual’s circadian cycle, but also decreased symptoms of depression (Prasko, 2008).

Cognitive Behavioral Therapy

Cognitive behavioral therapy (CBT) is a practical treatment intervention that addresses an individual’s patterns of thinking that are dysfunctional and the thoughts that create misconceptions about any topic, such as sleep and/or insomnia (Warman & Beck, 2003). When CBT was utilized as part of the therapeutic milieu in treating elderly individuals with insomnia, it was determined to be the most beneficial with regard to individual maintenance rather than total mitigation of symptoms (Montgomery & Denni, 2003; Siebern & Manber, 2010). Individuals who are most receptive to CBT results are those who have “(a) severe trouble initiating or maintaining sleep, (b) symptoms… not exclusively due to a chronobiologic sleep disorder, (c) primary medical or psychiatric conditions that would not contraindicate treatment, and/or (d) the presence of maladaptive coping mechanisms or presleep hyperarousal” (Perlis & Smith, 2006, p. 15). Clients using CBT were able to correct, maladaptive thoughts and feelings about sleep,
reduce harmful daytime symptoms, and demonstrate positive improvements in sleep patterns (Jansson & Linton, 2005).

Role of Occupational Therapists

Occupational therapy is an ever growing and expanding profession which focuses on improving a client’s quality of life by helping the individual to successfully participate in his or her basic activities of daily living or occupations. To accomplish this, occupational therapists demonstrate the ability to evaluate clients, provide quality interventions and treatments. These specific occupational therapy services focus on “promoting health and wellness to those who have or are at risk for developing an illness, injury, disease, disorder, condition, impairment, disability, activity limitation, or participation restriction” (American Occupational Therapy Association, 2004). Overall, occupational therapists use a holistic approach that incorporates looking at a client's body, mind and soul with regard to the current ability of the person to participate in occupational tasks.

The role of an occupational therapist who is working with geriatric individuals who have insomnia should also utilize a holistic method. During the assessment process, best practice dictates that the occupational therapist should go beyond asking the typical questions about the number of steps into the individual’s home or what kind of bathroom setup he or she has in his or her residence. Rather, occupational therapists might ask how his or her clients are sleeping each night, and as a result how he or she is currently performing in daily occupations. Additionally, therapists can incorporate interventions such as calming strategies and progressive muscle relaxation techniques as part of the therapy program (McCoy, 2010). A comprehensive and multifaceted therapeutic
approach allows clinicians to apply both evidence-based practice and holistic care. By applying this therapeutic approach, clients are provided with an increased chance to participate in valued occupational tasks (Giese, 2005).

As part of the evaluation process, a therapist might use an occupational model such as the Canadian Model of Occupational Performance and Engagement (CMOP-E). The CMOP-E is a client-centered model allowing clients to help lead the therapeutic intervention process through communicating about specific values the individual has within his or her occupations or life roles (Cole & Tufano, 2008). The CMOP-E is selected for this project secondary to its guiding principles of addressing spirituality and self care. Spirituality, which can include meditation or yoga, is shown to have a clearly defined impact on both an individual’s overall well-being and participation in daily tasks (Belcham, 2004). The impact on an individual’s ability to participate in self-care tasks, such as obtaining enough sleep in order to more accurately function the next morning, is greatly impacted when symptoms of insomnia are present. Thus, the client centered and collaborative aspects of the model allow individual clients the opportunity to delve into occupations that he or she finds meaningful, in hopes of impeding symptoms of insomnia.

The CMOP-E includes an assessment tool, the Canadian Occupational Performance Measure (COPM) that provides clients even more opportunity to participate in the therapeutic treatment process. The COPM specifically asks the client to rate different activities, including sleep, not only in the item’s level of importance to the client, but also the level of success that the client has with each given activity (Law, 2005). It is important to note that use of the COPM and theoretical model is proven
highly effective in past research studies (Edwards, Baptiste, Stratford, & Law, 2007). A similar study indicated that the “COPM is helpful in the goal-setting process and in planning treatment interventions…. However, problems were found using the instrument with clients who had poor insight or in acute settings” (Wressle, Marcusson, & Henriksson, 2002, 40).

Thus, it is important to consider other theoretical models that will help the individual best achieve his or her overall goal of improving quality of sleep and daily functioning while participating in occupational tasks of daily living. Supplementing use of the COPM with adult learning theory provides guidance in how people learn and participate in basic activities of daily living.

Adult Learning Theory

Adult learning is broken down into five basic categories: “(1) letting learners know why something is important to learn, (2) showing learners how to direct themselves through information, and (3) relating the topic to learners’ experiences. In addition, (4) people will not learn until they are ready and motivated to learn. Often this (5) requires helping them to overcome inhibitions, behaviors, and beliefs about learning” (Conner, 2004, p. 1). Additionally, adult learning is broken down into four basic learning types: active, experiential, project based and self directed learning (Conlan, Grabowski, & Smith, 2003). One may note that individuals who are most likely to master this process are said to be those who “have the highest levels of readiness for self-directed learning: a complex mixture of knowledge, skills, attitudes, and habits” (Guglielmino & Guglielmino, 2003, p. 27).
Key principles of adult learning with regard to elderly individuals with insomnia may include his or her cognitive function; desire to learn about a new topic, interest in becoming more independent in daily tasks and the motivational need to focus on problem solving to improve his or her quality of life (JISC Regional Support Centre for the East Midlands, 2010). These principles, when applied to a geriatric individual, mean that the client must above all be ready to learn before he or she can begin to assess his or her own learning preference and/or learning style. One article indicated that “adult learners possess a different self-image, more life experiences, the fear of failure, a greater expectation to immediately use learning, a diminished speed and retention of learning, and some basic physical differences that can impact their abilities to learn” (Kennedy, 2003, p. 1). Clients with insomnia who have other co-morbidities or symptoms of cognitive deficits may have a more challenging time with learning new materials or treatment strategies (M. Stout, personal communication, April 8, 2010). Therefore, occupational therapists should work with clients to first understand his or her cognitive, motivation or learning abilities. This can be screened through utilizing assessment tools such as the COPM. Each of these items helps therapists to see not only what functional abilities that the client values, but also his or her ability to attend to a task, learn new materials and correct errors. By incorporating these assessment tools into the evaluation process, the therapist gains a more holistic client perspective.

Conclusion

Around the world the percentage of elderly individuals who have insomnia has been steadily rising. Since a lack of sleep is associated with decreased functioning in
basic activities of daily living, it is recommended that occupational therapists become aware of the role that he or she may have in treating elderly clients who have insomnia.

When REM and NREM sleep cycles are interrupted, an individual may experience decreased visual motor reaction times, information processing, cognitive responses and tissue restoration. Based upon an extensive literature review, occupational therapists can play a major role in helping elderly clients with insomnia to enhance quality of sleep and thus improve this population’s ability to participate in meaningful occupations. Therefore, this population would greatly benefit from a large print resource manual. The manual will include the results indicated from research studies and incorporate the use of holistic, therapeutic techniques. These evidence based techniques may range from yoga to acupuncture, cognitive behavioral therapy, or integrating a complex sleep hygiene program. Theoretical models like adult learning theory and the COPM-E, assist occupational therapists in ensuring therapeutic interventions have relevance to clients. When these models are paired with assessment tools such as the COPM, results are shown to be the most advantageous based upon higher client compliance rates (Wressle, et al., 2002). The outcome of this literature review supports the need for creating a resource manual for elderly clients and family members to help aid them in relieving his or her symptoms of insomnia to improve daily functioning and gain a restful sleep.

Chapter three describes the methodology and process used for the development of the product. As part of this process, an emphasis was placed upon the importance of utilizing theoretical models of practice such as the adult learning theory and the COPM-E in the construction of a resource manual for elderly individuals with insomnia. It also
includes specific considerations including learning techniques when working with and creating a manual for geriatric clients.
CHAPTER III

METHODOLOGY

The method used to inform the creation of the sleep manual includes studying the role of the occupational therapist and reviewing the literature. The former literature review consisted of illuminating the problem of insomnia with elderly adults and studies investigating intervention. The literature being utilized in the creation of the manual includes research articles, text books and a review of holistic and perscriptive medicine, self-directed learning styles, and theoretical occupational therapy approaches.

This large body of information was then broken down into several additional steps: noting the kind research being done both within and outside of the United States, as well as different areas of intervention that are currently available such as; the benefits of sleep hygiene or sleep protocol programs; auricular acupuncture and other holistic therapeutic treatments such as yoga, and meditation or guided imagery. The writer also reviewed other self-help sleep texts currently available to the public. Based on the analysis of the existing information, it was determined there is a need to develop a manual focused on the needs of elderly individuals who have insomnia. The goal of the scholarly project is to provide older adults, family members, caregivers and occupational therapists with resources to assist geriatric clients with symptoms of insomnia supported with evidence-based information.

Using evidentiary information is a necessary part of any occupational therapist’s practice. Many health care facilities emphasize using evidence-based practices for reasons such as its impact on future research, selecting the most effective treatment
strategies for both an individual and his or her specific diagnoses and for third party reimbursement (Hertel, 2005).

Regarding research on insomnia, it is interesting to note that the number of articles on insomnia and the elderly in other countries is almost equal to and/or exceeds that of articles found within the United States. The following four countries: China, Japan, Korea and Italy demonstrate a high interest in research on elderly individuals with insomnia, indicating the problem has a global scope. When looking deeper into these studies it is also noted the researchers generally sampled a large client population (e.g. 50+ participants) and also had high client participation rate (Bonanni et al., 2009; Liu & Liu, 2005; National Institute of Neurological Disorders and Stroke, 2007). Each of these factors helps to increase the weight and value of evidence regarding validity and reliability. Large samples provide a better basis upon which to generalize the findings to the general population needing treatment. International articles also emphasize the importance of incorporating holistic methodology into treatment, such as auricular acupuncture and implementation of a sleep hygiene program (Kim & Sok, 2007; Liu & Liu, 2005).

Research articles specifically addressing insomnia in the United States within the last 10 years were limited in terms of adequate sampling and intervention focus. Of the articles that met the writers criteria, the majority were found in journals such as Sleep, Gerontological Social Work and the American Geriatric Society. Articles addressing sleep in the occupational therapy literature were not only limited, but also the majority of these articles were older than 10 years and, thus not current enough for utilization in the project.
Models

In the creation of this scholarly project, two theoretical models are utilized to help guide the creation of the resource manual. These two theoretical approaches include the Canadian Model of Occupational Performance and Engagement as well as key principles of adult learning theory. Each of these theories helps provide foundation for the scholarly project.

Canadian Model of Occupational Performance and Engagement

As part of the evaluation process, the project proposes using an occupational model with a client-centered focus such as the Canadian Model of Occupational Performance and Engagement (CMOP-E) (Townsend & Polatajko, 2007). The CMOP-E allows clients to participate in and lead the therapeutic intervention process by communicating one’s values and integral life roles (Cole & Tufano, 2008). The model also emphasizes spirituality and self care. Insomnia impacts upon an individual’s ability to participate in self-care tasks, and thus, impairs success in valued roles. Using the client-centered collaborative aspects of the CMOP-E provides the therapist and the individual an opportunity to address sleep as it relates to occupations that he or she finds meaningful, in hopes of improving his or her quality of life through appropriate interventions improving sleep.

Adult Learning Theory

Key principles of adult learning theory are also incorporated in the development of the resource manual. The concepts utilized in this resource manual include “(1) letting learners know why something is important to learn, (2) showing learners how to direct
themselves through information, and (3) relating the topic to learners’ experiences” (Conner, 2004, p. 1). In addition to these three learning concepts, several activities in the manual help individuals discover what type of learner that he or she may be: active, reflective, sensory, intuitive, visual, sequential, global, verbal or self-directed learner (Conlan, Grabowski, & Smith, 2003). Based upon the individual’s response, specific interventions can be recommended that are congruent with the individual’s learning style.

Key principles of adult learning theory with regard to elderly individuals who have insomnia may include addressing the client’s cognitive function, desire to learn about a new topic, interest in becoming more independent in daily tasks, need for motivation, and problem solving skills in order to improve his or her quality of life (JISC Regional Support Centre for the East Midlands, 2010). Kennedy (2003, p. 1) reports that “adult learners possess a different self-image, more life experiences, the fear of failure, a greater expectation to immediately use learning, a diminished speed and retention of learning, and some basic physical differences that can impact their abilities to learn.” It is important to keep in mind older clients with insomnia, especially those having co-morbidities or symptoms of cognitive deficits, may have a more challenging time with learning new materials or treatment strategies (M. Stout, personal communication, April 8, 2010). Keeping this in mind, seven different activities are included in the resource manual that challenge an individual to recall what is being learned as well as apply it to relevant treatment options. This repetition allows for increased retention of materials as well as immediate use of knowledge to improve quality and quantity of sleep.

Methods to ensure the targeted audience will be able to easily read and access the materials within the manual included: having readability checked by the author’s advisor,
Dr. Janet S. Jedlicka, as well as assistance from the director of the Casper College writing center, Mr. Robert Mittan, and also through *Microsoft Word* readability tool (Microsoft Office Word, 2007). A large font is consistently applied throughout the manual to decrease potential eyestrain of the reader. In chapter four, a brief outline of the resource manual is presented. The completed resource manual is located in the appendices of this scholarly project.
CHAPTER IV
PRODUCT/RESULTS

The goal of the manual is to provide elderly individuals with resources to restore participation in meaningful activities and improve quality of life by offering strategies to promote a sleep hygiene program and increase both quality and quantity of sleep. The resource manual is entitled *Resources for assisting elderly individuals with insomnia: An occupational therapy perspective.*

The first section of the manual introduces the target audience to why the manual was created as well as the topic of insomnia as a health issue of many elderly adults. The second section introduces the reader to principles of adult learning, sleep hygiene, and the Canadian model. Section three is the main reader resource composed of information about learning preferences, learning styles, a proposed sleep hygiene program, a sleep journal, cognitive behavioral therapy techniques and other holistic therapeutic approaches including yoga, the use of vitamin and herbal supplements, bright light therapy and auricular acupuncture. The use of prescription medications used in treating insomnia is also briefly discussed in this section. The literature suggests best results are gained through a combination of more than one intervention (Avidan, 2003; Krishnan & Hawranik, 2008). In addition, several activity pages are provided within the resource manual for the client to complete in order to ensure that the client selects interventions matching his or her learning style. A link to an online learning style test is also provided within the resource manual for the individual and his or her family member to ensure that
the correct learning style was chosen to be applied. All of the text is substantiated by personal communication with professionals in the field of sleep, including a physician in a sleep clinic and a chiropractor working with geriatric clients experiencing symptoms of insomnia, as well as multiple international and United States research articles.

After the reader works through the intervention process, if he or she is seeking additional information, four appendices are found at the end of the manual. Appendix one provides information about sleep clinics located in Colorado, Nebraska, North Dakota, South Dakota and Wyoming. Appendix two contains examples of yoga workout ideas with pictures. Appendix three contains a sleep journal, also known as a sleep log set up tool, which can help individuals to track when they fall asleep, how long they stay asleep and how many times he or she is getting up in the middle of the night. The final appendix (four) has the answers to all the challenge activities included in the manual for the reader.

Chapter five provides a summary of the purpose and process used to develop this scholarly project. Limitations are discussed and recommendations for implementation of the resource manual are described.
CHAPTER V

SUMMARY

Conventional wisdom suggests that an individual’s golden years are his or her best years. However, if an individual struggles with symptoms of insomnia, he or she may notice a decline in function and successful completion of meaningful daily occupational tasks. The scope of international interest and research into insomnia and its effects on the quality of life of the elderly indicates that numerous individuals around the world are asking: “Why can’t I fall asleep… how long will I have these sleepless nights…what can I do to get better?”

In order to address these questions, it became essential to conduct an extensive literature review. Based upon the writer’s analysis of the literature, the need for a resource manual became evident and a manual created by the writer is included in the Appendix. The manual is for elderly individuals, family members, caregivers and occupational therapists, it includes resources targeted at alleviating the symptoms of insomnia in geriatric clients over the age of 65.

The creative aspects of this resource manual include an easy-to-read bulleted design and the utilization of large font. The manual also included several opportunities for client involvement and participation, as it challenged individuals to utilize cognitive skills to complete seven different activities. Four appendices were created to provide users with additional information and support. In these appendices are the locations to
local sleep clinics, a sleep journal/log, basic yoga activities and answers to the learning activities found within the manual.

Upon complete review of the project and its supporting research articles, several limitations should be noted. First, very few of the current research articles included in the review of literature were randomized control trials, meaning the body of evidence supporting the current manual is not the best or most complete evidence. Future revisions to the manual will be necessary as more is learned about sleep and the elderly. Second, the literature review is limited to the population of individuals 65 years and older and therefore, is not indicated for younger adults or children. Finally, in regard to the field of occupational therapy, very minimal research into the treatment of insomnia has been completed, especially within the United States. The addition of sleep and rest has only been in the practice framework of occupational therapy for a few short years (American Occupational Therapy Association, 2008). Further study into sleep and rest using theories of occupation will be needed to develop the best course of intervention.

A survey was included in the appendices of the resource manual to gather feedback from users. This will allow the manual to be updated in the future to better serve the needs of elderly individuals. Multiple copies of the scholarly project will be printed so the writer can disperse the knowledge gained within this project to as many individuals as possible. It is the writer’s hope that this scholarly project will eventually be distributed at local sleep clinics and in-patient/out-patient clinics located within a four state radius. In this manner a wide variety of elderly individuals with symptoms of insomnia will be able to easily read the manual and ask his or her physician or
occupational therapist if the interventions provided within the text would be appropriate for use in treatment.
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