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Developing a Website of Occupation- Based Resources for Healthy Aging at Dominican University of California

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Developing a Website of Occupation-Based Resources for Healthy Aging at Dominican
University of California

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A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree

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School of Health and Natural Sciences

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This thesis, written under the direction of the candidates' thesis advisor and approved by the Chair of the program, has been presented to and accepted by the Faculty of the Occupational Therapy department in partial fulfillment of the requirements for the degree of Master of Science in Occupational Therapy.

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Abstract

The purpose of this project was to create a website to promote healthy aging at Dominican University of California. The website contains relevant information to promote healthy aging and publicizes Dominican University of California's activities and programs centered around healthy aging. The design of this thesis is a virtual context project that focuses on occupation based resources for healthy aging and highlights the role of occupational therapy in health aging. The healthy aging website is currently located on the homepage of the Occupational Therapy Department of Dominican University of California website.

The need for a Dominican University of California healthy aging website was driven by the lack of a virtual context that provides healthy aging information in one area. Dominican University of California has long been providing services of interest for older adults and healthy aging through community based programs in the occupational therapy and nursing departments, but did not have a website that promoted healthy aging. The Dominican University of California healthy aging website provides evidence-based, occupation centered resources that highlight the role and influence occupational therapy has in healthy aging. It is within the scope of Occupational Therapy to be advocates and educators in the prevention of disease and disability, and the promotion of healthy aging. The goal of this thesis project was to provide older adults, Dominican University of California health professions students, and the general public with access to the internet with a credible resource on all aspects of healthy aging.

Introduction

The fastest growing age group in the United States is older adults. An older adult is any individual over the age of 65 (Centers for Disease Control and Prevention [CDC], 2012). The older American population is expected to rise dramatically in the next 20 years. The adult population over age 65 will be 72 million by 2030 (U.S. Census Bureau, 2011). This means that by 2030, it is estimated that one in five Americans will be 65 or older (CDC, 2012).

Currently, there are about 4.2 million people over the age of 65 in California (U.S. Census Bureau, 2010). In the town of San Rafael, located in Marin County California, 16% of the population are over the age of 65. This is 5% above the average in California (U.S. Census Bureau, 2010). Because of this, San Rafael can be considered a “naturally occurring retirement community” (NORC). NORCs are locations with a higher than average percentage of older residents, primarily living independently in their homes (Buday& Carpenter, 2007).

Marin County provides many services to older adults to promote healthy aging, which the CDC describes as the “development and maintenance of optimal physical, mental and social well-being and function in older adults” (2012). These services include transportation, community centers, newsletters, programs and a Commission on Aging in Marin County. Dominican University of California, located in San Rafael, California, provides health promotion services for older adults as part of their health professions training programs in nursing and occupational therapy.

While there are many health promotion services and resources available to older adults in Marin County, there is a need for a supportive environment that enables the increasing number of older adults to age well. Dominican University of California recently supported the development of a Center for Healthy Aging through a Strategic Initiative Grant (SIG). Included in the plan for

Healthy Aging was the construction of a virtual context that would organize and publicize resources and information on healthy aging (personal communication, August 29, 2012). The purpose of this project was to create a website to promote healthy aging using a virtual context available to be viewed by anyone, but catered to older adults.

Literature Review

The healthy aging website was created to provide a convenient virtual location where older adults can find information related to healthy aging. In order to find the information to meet this goal, a review of the literature on healthy aging was conducted. This literature review examines the promotion of healthy aging through research on the six dimensions of wellness, occupational therapy education-based interventions, home adaptations, community partnerships that promote healthy aging, and the use of the internet by older adults.

Six Dimensions of Wellness

In this section of the literature review, the Six Dimensions of Wellness and their relationship to healthy aging will be discussed. The Six Dimensions of Wellness, as defined by the National Wellness Institute, are: occupational, physical, social, intellectual, spiritual, and emotional wellness (National Wellness Institute, 2012). The Dimensions of Wellness model is an appropriate theoretical model because its holistic perspective is congruent with what occupational therapy promotes. The following sections will provide further explanations on the Six Dimensions of Wellness.

Occupational wellness. Occupational wellness occurs when individuals experience satisfaction and fulfillment from the work they perform (National Wellness Institute, 2012). Through both volunteering and paid employment, individuals can experience this. In a study done by psychologist Stephanie Brown, volunteering was shown to be beneficial to the health of older

adults. She reported that people who help others through volunteering or their jobs, have a longer lifespan. Brown followed over 400 older adult couples for five years and found that those who provided hands-on support were half as likely to die over the study period as non volunteers even when adjusting for factors like physical health, mental health and age (Brown, Nesse, Vinokur & Smith, 2003).

A qualitative study of 301 adults over the age of 65 showed that volunteer or paid work was directly related to quality of life, which was defined as an individual's personal satisfaction with his or her lifestyle. The participants were asked if they engaged in volunteer or paid work and to rate their quality of life. The study found that higher ratings of life satisfaction were significantly correlated between number of hours worked as a volunteer or at a paying job (Aquino, Russel, & Cutrona, 1996).

A qualitative study of 26 older adults over the age of 60 found that adults who continue to engage in work rather than full retirement experienced increased quality of life. Participants reported that productive activities increased their self concept and provided satisfaction from giving back to the community (Bambrick & Bonder, 2005).

Physical wellness. The physical dimension of wellness includes performing regular physical activity, being disease free, eating healthy, avoiding tobacco, drugs, and excessive alcohol consumption and being at a healthy weight. Research supports that engaging in regular physical exercise such as Tai Chi, yoga, aerobic exercise, and strength training are beneficial to older adults' overall health and wellness (Ho, Wen-Miin & Lien, 2007). For example, Tai Chi is an ancient Chinese martial art that has been shown to help older adults improve physical health and quality of life. A 2007 quantitative cross-sectional study reported that older adults between the ages of 60 and 70 in the experimental group who had been regularly practicing Tai Chi for over a

year scored significantly higher than their control counterparts in the areas of physical function, physical roles, general health, social functioning, and vitality (Ho, Wen-Miin & Lien, 2007). An additional 2007 quantitative 48-week, single-blind, randomized controlled trial of Tai Chi as the experimental exercise, reported that older adults 70 years old and above reported significant improvements in perceived physical health, particularly in the area of ambulation (Greenspan, Wolf, Kelley & Grady, 2007).

Tai Chi is also an appropriate exercise intervention for improving balance in older adults. A 2007 longitudinal quantitative study reported that one hour of Tai Chi per week for six months resulted in significantly improved static balance in the older adult experimental group compared to their control counterparts (Li, Devault & Van Oteghen, 2007).

Another healthy form of exercise is yoga. Yoga is an ancient Indian mind-body approach to wellness that consists of meditation, breathing patterns and specific postures. A 2006, six month, parallel-group, randomized, controlled study reported that the yoga group produced significantly higher scores in the quality of life measures of vitality/energy, bodily pain, social functioning and the physical composite scale. The yoga group additionally reported improvements in the physical measure of one-legged standing and seated forward bending (Oken et al., 2006).

“Silver yoga” is a non-strenuous and manageable yoga program that was created specifically for older adults to improve body flexibility, physical health and wellbeing. In 2008, a one group, pre-post test study was done to determine if silver yoga was indeed beneficial for its older adult target audience. After four weeks of three times a week, 70 minute yoga sessions, the participants in the study reported decreased body fat percentage and systolic blood pressure, an improvement in balance and range of motion on shoulder flexion and abduction and a

decrease in sleep disturbance (Chen & Tseng, 2008). A quasi experimental 24-week study was done that same year to determine if the experimental group performing yoga with stretching and meditation, for 70 minutes, three times a week, experienced more benefit than the experimental group performing yoga without stretching and meditation and the control group (Chen & Tseng, 2008). The results demonstrated that the physical fitness of both yoga groups improved, whether or not there was stretching or meditation, with impressive declines in systolic blood pressure, body mass index and improvements in lower body muscle strength, flexibility and breath holding duration. The control group reported no significant improvements (Chen & Tseng, 2008).

If people do not engage in regular aerobic exercise as they age, decreases in physical functioning such as walking, balance, strength and decreases in psychological and cognitive functioning may occur. In 2010, a longitudinal study was performed to see if participants in an aerobic exercise program for 45 minutes, once a week, for 15 weeks, could improve the mental and physical health of older adults. The aerobic activity was of low intensity and involved playing games with hoops, balloons, foam balls, and other equipment. Although the results did not demonstrate any improvement between pre-test and post-test scores for general health perceptions, depression or activities of daily living, the subjects did show significant physical improvements in weight loss, body mass indices, and waist circumferences as indicated by the differences in the pre and post-tests (Rabaglietti, Liubicich & Ciairano, 2010).

Aerobic exercise is important to the physical health of older adults because it can assist in visuospatial information processing. A 12 week randomized control trial performed in 2001 demonstrated that an experimental group of five adults over the age of 65 improved their visuospatial information processing accuracy index (AI) by 26% through performing aerobic

exercise three times a week for eight weeks, whereas the five control group participant's AI decreased by 12% (Bakken et al., 2001).

In older adults, a decline in muscle strength and mass can lead to physical frailty, functional decline, impaired mobility, and falls. However, muscle loss is potentially preventable or reversible via strength training. In 1994, a randomized 10-week lower extremity weight training study was conducted. The 50 experimental subjects were all over 70 years old and did strength training three times a week, for 45 minutes each session. The 50 control group participants experienced a 3% increase in muscle strength whereas the experimental group achieved a statistically significant 113% increase in muscle strength (Fiatarone, O' Neill, Doyle & Ryan, 1994).

Social wellness. The social dimension of wellness includes having positive and fulfilling interpersonal relationships with others (National Wellness Institute, 2012). These relationships are an important aspect of promoting healthy aging in older adults. Older adults report that maintaining positive relationships with other people and obtaining social support is the most important factor affecting successful aging (Cha, Seo, & Sok, 2012). Emotional support from a network of social relationships is associated with better cognitive functioning (Seeman, Albert, Lusignolo, & Berkman, 2001).

A qualitative cohort study of 3,283 adults between the ages of 74 and 89 demonstrated that social activity could help extend life. In 1992, the participants of the study were administered a questionnaire. The responses were compared with their five year survival status in 1997. Between 1992 and 1997, 83.3% of the male participants and 89.3% of the female participants survived. Multiple logistic regression analyses indicated that activities with family, friends, and neighbors are significant predictors of 5-year survival of older adults, independent of

baseline demographics, lifestyle, and health status (Morita, Takano, Nakamura, Kizuki, & Seino, 1997).

A qualitative longitudinal study on 1,388 older adults between the ages of 60 and 64 demonstrated that engaging in social activities can decrease symptoms of depression. The participants were first surveyed regarding their social participation in 1989 and followed for an 18 year period. Analyses using growth curve modeling showed that a continuous participation in social activities later in life was significantly associated with fewer depressive symptoms among the participants, even after controlling for the confounding effects of aging, individual demographic differences, and health status (Chiao, Weng, & Botticello, 2012).

A qualitative study of 1,577 older adults between the ages of 65-75 demonstrated that interpersonal trust and social participation was positively associated with health for the 75-year olds, but only the interpersonal trust was associated with health for the 65 year olds (Nyqvist, Nygard, & Jakobsson, 2012).

Intellectual wellness. The intellectual dimension of the wellness model includes any activities that stimulate brain function, whether directly or indirectly. One way to indirectly improve cognitive functioning in older adults is through playing the piano. In one study examining the benefits of learning how to play the piano, 31 older adults who had no prior piano experience were taught how to play the piano during individualized piano sessions. The older adults attended a half hour individualized piano session with three hours of practicing on their own, each week, for six months. The older adults learned piano exercises from two basic piano course books and were taught new items to play every week. After six months, the pre and post-test demonstrated that the experimental group significantly improved performance on the Trail Making Test (This text examines visual scanning, numeric sequencing, visuomotor speed, and

executive functions related to the ability to plan, execute, and modify a potential plan of action) and the Digit Symbol measures (a neuropsychological test that is sensitive to brain damage, dementia, and depression) as compared to healthy controls. Results of this study suggest that learning to play the piano may serve as an effective cognitive intervention for age-related cognitive decline (Bugos, Perlstein, McCrae, Brophy, & Bedenbaugh, 2007).

A quasi experimental study of 158 older adults demonstrated that attending university classes positively impacted the cognition, health, level of activity, and emotions of the participants in the experimental group. The experimental group consisted of 82 older adults who followed the University Program for Older Adults at the University of Madrid from 2007 to 2010, and the control group was 76 older adults during the same period. The experimental group participants obtained significant benefits in maintaining their cognitive performance evaluated through the Digit-Symbol Test, their health (assessed through the number of illnesses reported), their level of activity (information-seeking and social activities), and additionally increased their level of positive affect compared to the control group (Fernandez-Ballesteros, Molina, Schettini, & Del Rey, 2012).

Spiritual wellness. The spiritual dimension of wellness involves seeking meaning and purpose in human existence and includes the development of a deep appreciation for the depth and expanse of life and natural forces that exist in the universe (National Wellness Institute, 2012). For older adults, spiritual practice may improve coping skills and social support, foster feelings of optimism and hope, promote healthy behavior, reduce feelings of depression and anxiety, and encourage relaxation. By reducing stressful feelings and promoting healing ones, spirituality can positively influence immune, cardiovascular, hormonal, and nervous systems (National Wellness Institute, 2012).

A 2005 cross-sectional correlational study examined well-being in relationship to the variables of hope and spirituality. The convenience sample of 130 older adults, mostly women, between the ages of 60 and 89, completed the Demographic Data Sheet and the Index of Well-Being, the Herth Hope Index, and the Spiritual Perspective Scale. Statistically significant and positive correlations were found between hope and well-being, hope and spirituality, and spirituality and well-being. These findings demonstrated that in this convenience sample of 130 adults, those who considered themselves to be spiritual and hopeful had higher degrees of well-being than those who did not (Davis, 2005).

A 2010 study examined the association of religious participation with mortality using a longitudinal data set collected from 9,017 older adults aged 85+ in China in 2002 and compared it to their follow-up survival/mortality data collected in 2005. The data set included the participants' self ratings of: family structure, living arrangements and proximity to children, disability status, physical performance, self-rated health, life satisfaction, cognitive function, chronic disease, medical care, social and religious participation, diet, smoking and alcohol consumption, psychological characteristics, economic resources, and family support. Results comparing the data from 2002 to 2005 were statistically significant and showed that adjusted for demographics, family/social support, and health practices, risk of dying was 21% lower among frequent religious participants than among non-religious participants for all older adults aged 65 and over (Zeng, Gu, & George, 2010).

Emotional wellness. Emotional wellness includes the degree to which one feels positive and enthusiastic about oneself and life and includes the capacity to manage one's feelings and related behaviors including the realistic assessment of one's limitations, development of autonomy, and ability to cope effectively with stress. The emotionally well person maintains satisfying

relationships with others (National Wellness Institute, 2012). For older adults, emotional well-being and positive affect have a significant impact on health. This includes an absence of mental conditions such as depression, anxiety, etc. Results of a qualitative study of 3,190 adults over the age of 60 suggested that participants with positive affect may live longer than their less content counterparts. Participants completed face-to face interviews lasting an average of one hour and self administered questionnaires on various topics, for example, social relations, economic situation, and health. Reassessments of these participants and the controls were conducted in 2002 and 2008. The results of the study showed that regardless of gender, region, education, partner status, and physical health, participants who reported higher levels of life satisfaction and positive affect lived longer than their less content counterparts (Wiest, Schuz, Webster, & Wurm, 2011).

An 11-month randomized controlled study in Singapore was done to determine if listening to music would reduce the symptoms of depression among older adults. In the study, 50 older adults were divided equally into two groups. One group was given the option to listen to a variety of slow rhythmic music of their choice for 30 minutes a week for eight weeks, while the other group did not listen to any music. The older adults listened to a selection of music that was Chinese, Malay, Indian, and Western. The music that was offered to the participants was chosen based on the characteristics of the beats in the songs, which promoted relaxation and lowered anxiety. Data was collected on July 2009–June 2010 from a research nurse visiting each subject in their homes weekly for eight weeks to measure their depression scores. Participants who listened to music had a significant decrease in their depression levels over the eight week study period as measured by the differences between their pre and post-tests (Chan, Wong, Onishi, & Thayala, 2011).

The Role of Occupational Therapy in Promoting Healthy Aging

The World Health Organization (WHO) defines health as a condition of complete physical, mental, and social well being and not just the absence of disease within an individual (WHO, 1948). The WHO uses a proprietary system of measurements to gauge the quality of an individual's health based on their capacity to participate in activities of daily living.

Occupational therapy focuses on helping individuals maximize their ability to engage in meaningful activities of daily living. Occupational therapists serve as advocates and educators in the promotion of health and preventing disease and disability (American Occupational Therapy Association [AOTA], 2008). In this section, research on occupational therapy education-based interventions, home adaptations, and community partnerships and their relationship to the promotion of healthy aging will be discussed.

Occupational therapy education-based interventions for healthy aging. Occupational therapists use their skills to facilitate healthy aging to improve the quality of life of individuals that seek occupational therapy services. Occupational therapists are able educate older adults about the use of pain management from arthritis to post-surgery. Occupational therapy education-based interventions also benefit older adults through education in proper use of adaptive equipment to perform daily tasks (Lineker et al., 2011). Occupational therapists also work with older adults in fall prevention, low vision, and older driver safety (AOTA, 2013).

A 2010 study demonstrated that occupational therapy interventions can promote mobility to facilitate a healthy lifestyle in older adults with arthritis (Bethea, Lovett, Cooks & Bell, 2010). A six week Arthritis Self-Help Occupational Therapy Program was created to educate participants on understanding, coping, and adapting to the negative effects of arthritis. The program consisted of one two-hour session per week for six weeks. During each session, the

occupational therapy student and faculty researchers discussed with the participants topics that included managing arthritis-related aches and pains, self-management plans, equipment resources, problem solving, and medical resources. Post-intervention, the majority of the participants reported a greater degree of self-efficacy in managing their arthritis pain. Participants also reported being able to engage in more social activities with increased confidence with the newly acquired educational strategies (Bethea et al., 2010).

McCormack (2009) reported that pain management education after surgery in older adults benefits healthy aging. In this study, the participants were informed of various forms of pain management by occupational therapists, while a control group was not. Of the participants, 73% who received the intervention reported having a significant decrease in pain intensity from their arthritis, post-intervention. As a result, participants were able to engage in more social occupations, such as meeting with friends or family (McCormack, 2009).

Another occupational therapy education-based intervention focused on modifying functional skills of older adults. A repeated-measures subject design conducted at Umea University in Sweden examined older adults who were having difficulty with performing basic ADL tasks (Fisher, Atler, & Potts, 2007). Occupational therapists consulted with participants on their declining functional skills in areas of meal preparation and bathing. The Assessment of Motor and Processing Skills (AMPS) was administered before and after the intervention. The results indicated there was an increase in functional skills for most of the group (Fisher et al., 2007). The study's application of the intervention enabled the older adults to use what they learned to age in their home independently (Fisher et al., 2007).

Thomas, Pinkelman and Gardine (2010) conducted a study on older adults who received occupational therapy education on the use of adaptive equipment to assist in the recovery of hip

replacement surgeries, such as reachers, sock-aids, walkers, and single point canes. Thomas et al. (2010) found that when occupational therapists educated participants, they were more likely to use the adaptive equipment compared to participants who were not informed about the equipment. Participants also reported being significantly more mobile within three months, compared to the 28% of participants that elected not to use the adaptive equipment.

Approximately 72% of the participants who received occupational therapy education reported using the adaptive equipment everyday during the course of recovery and continued to use the equipment beyond the typical recovery periods (Thomas, Pinkelman & Gardine, 2010).

Occupational therapy home adaptations. A declining ability to engage in everyday activities is often part of the aging process. As a result, changes to the home may be necessary to manage and maintain the independence of older adults and to encourage them to age safely.

Occupational therapists make adaptation recommendations and home modifications to increase the autonomy of older adults. Home modifications are alterations to a living environment that are designed to increase safety and independence for the resident (Siebert & Vance, 2013).

Gitlin et al., (2006) demonstrated that occupational therapy interventions benefited older adults who received home modifications and adaptations. When home modifications were implemented, such as adding grab bars in the shower, raising toilet seats and adding wall rails, approximately 95% of the participants in the intervention group reported having decreased difficulty with ADLs and IADLs performances within six months. The intervention group also noted an overall increase in efficacy of self-care and improved control in performing functional tasks in 12 months (Gitlin et al., 2006).

Niva and Skär (2006) reported the positive impacts of housing adaptations made by occupational therapists for older adults between the ages of 70 and 84. In this study, the

occupational therapists modified and adapted the homes of the participants. Modifications included installing outdoor wheelchair lifts, step ramps, widening doorways, and removing thresholds in the kitchen. The results showed that the modifications had significant positive impacts on 96% of the participants' activities and quality of life through (Niva & Skär, 2006). The modifications provided more opportunities for the participants to perform leisure activities such as visiting friends and traveling out of town. Another positive impact was that it allowed the participants to perform their household activities using various housing adaptations with ease. Participants noted having more time to pursue their interests and explore new activities through the assistance of the occupational therapists in modifying their homes (Niva & Skär, 2006).

Occupational therapy partnerships to promote healthy aging. Occupational therapists often partner with local institutions and agencies to benefit their older adult clients. Occupational therapists have the skills to restore the daily living skills of older adults participating in rehabilitative programs within the community.

Occupational therapy can also help older adults in a community by connecting them to needed resources and services. Richardson et al. (2010) organized collaboration between the occupational therapy department at McMaster University and local community-help agencies, such as the ShelterHealth Network and the Young Women's Christian Association (YWCA). These community agencies offered assistance to older adults at risk of disability. The occupational therapy students and faculty provided their services to the community agencies. The occupational therapy students provided free education on osteoporosis prevention to local residents and resultantly gained real world experience while building a positive image of the university's occupational therapy department. The community agencies benefited from the extra

personnel support while community residents received occupational therapy guidance that they would not have previously had access to or funds to pay for (Richardson et al., 2010).

Zingmark and Bernspång (2011) conducted a quasi-experimental study with a group of community-dwelling older adults in Sweden. The participants were recently discharged patients from local hospitals. The participants requested assistance in home bathing education from their local home-help care municipality. The intervention group was treated by occupational therapists while the other half were given standard home-help care personnel to address their bathing needs. The home-help care personnel taught the participants strategies that made them more dependent on others for their activities of daily living. However, the participants who were assisted by occupational therapists were provided home modification strategies in their activities of daily living which promoted client independence. By the 14th week follow-up, only 30% of the intervention group was receiving home-help assistance for bathing needs while 75% of the control group was still receiving standard home-help care. The occupational therapy intervention group reported significant increased success overall in the ability to self-bathe compared to the group that received standard home-help care. The study demonstrates that the quality of life for older adults and the ability to age independently increases considerably through the use of occupational therapy (Zingmark & Bernspång, 2011).

Older Adults and the Internet

In this section the issues related to the internet and older adults are examined. Within this subject three key subcategories will be discussed. These subcategories include internet use in older adults, website design for older adults and use of the internet to promote healthy aging among older adults.

Internet use in older adults. Although older adults are currently less likely to actively engage in internet use, they are also the fastest growing population of internet users (Lee, Chen, & Hewitt, 2012). A national study found that the number of adults over the age of 55, who own computers increased 43% between 2007 and 2009 (Wagner, Hassaneirn & Head, 2010). Along with ownership of computers, older adult internet use has increased. Internet use increased in Americans age 65 and older by 47% between 2000 and 2004 (Fox & Jones, 2009). Older adults are joining the 21st century era of computer and internet use, but their motivating factors to do so may be different from that of younger adults (Nie, 2011).

Communication with friends and family is reported as the primary motivation for internet use by 95% of the older adults (Tambaum, 2010). Many of the participants in one study described communication with family members as the most important part of their day. In another study, the primary form of communication through the internet was reported as email. In this study, the use of email to set up volunteer activities was nearly as high as communication with family members (Harrod, 2011).

Older adults do not typically perceive the internet as a form of entertainment (Tambaum, 2010). Aside from the use of the Internet for communication purposes, more specifically email, older adults are beginning to access different areas of the internet. Rather, to learn quick facts or information. In the study, participants expressed opinions that younger people spend “useless” time on the internet (Tambaum, 2010). Because of this, the participants felt it was important to use the internet primarily for gaining facts, learning lessons and communication. Although these are the top categories of internet use by older adults, an overlying characteristic was found in older adult’s perception of the internet. In this study it was also found that internet searches differ in depending on the generational age (Tambaum, 2010). News, weather and current affairs

were reported as valued categories of internet use by older adults in a study by Firth, Mellor, and Moore (2008). Younger generations, especially adolescent internet users, primarily use the internet for entertainment rather than information (Firth, Mellor, & Moore, 2008).

These uses of the internet may be based on the preferences of older adults, but they may also be chosen due to the barriers of the internet for older adults. Older adults have more challenges when learning to use a computer compared to younger adults stemming from anxieties and stress that older adults have when learning and using new technology (Chen et al., 2011). Older adults are more likely to demonstrate low self-esteem in working with technology and the internet and often give up if they feel that they have failed (Chen et al., 2011). Aside from psychological barriers, older adults also may experience a number of physical barriers. Older adults are more likely to experience visual impairments and dexterity deficits. These impairments can make reading the screen, keyboard use, and mouse usage difficult (Hassanein, et al., 2010).

Website design for older adults. Older adults have different needs than younger adults in relation to web page and computer use. This is related to physical and mental changes of normal aging (Chen et al., 2011). Visual and hearing deficits are perhaps the two most prominent areas that affect internet use in older adults. Older adults with visual deficits may have a hard time seeing a computer screen with small images or fonts. Aside from visual deficits, mild cognitive changes may also be experienced by older adults. These changes include: reduced attention span, reduced spatial perception and memory decline (Chen et al., 2011). Ideal interfaces for older adults with visual decline would be larger fonts, larger and fewer graphics, layouts without extremely precise clicking movements, distinguishing colors and less clutter. Websites that are designed with minimal distractions and provide 'click here signs' are simple to use and provide

older adults with cognitive challenges a better chance of accessing the webpage (Chen, et al., 2011). Although programs for increasing font and image size on a computer screen exist, older adults may not understand how to utilize these options or not know they exist. By providing a universal designed website, it aimed to provide users of all ages and abilities accessibility, such as older adults. (Hassein et al, 2010).

Firth et al. (2008), collected information from older adults about their preferences for internet use and webpages. Older adults found websites with help areas or technical assistance areas more accessible and useful than webpages without them. Older adults also reported that they liked 'click here' buttons and websites with simple instructions. It was also found that when learning content from the internet through a video, a longer loading time devalued the accessibility and usefulness in the website (Chen et al, 2010).

Use of internet to promote healthy aging. In order to facilitate an active and practical life, older adults seek helpful information from the internet (Tambaum, 2010). Fox and Jones (2009) found that 59% of adults ages 50-64 and 27% of adults age 65 and older search the internet for health information. There are currently numerous health and medical websites on the internet. These websites offer biomedical answers to questions and information on conditions. Healthy aging websites provide a holistic range of care information on prevention care, facts, exercises, social activities and more (Center for Disease Control and Prevention [CDC], 2013). For example, The Center for Disease Control and Prevention website for healthy aging contains information on fall and cognitive decline prevention, resources for healthy aging, later life planning, medical information for older adults, healthy brain information and much more.

Older adults typically do not search for disease-specific answers and information on the internet (Tambuam, 2010). Rather, older adults' most common health related internet search is

for a broad spectrum of health help to maintain wellness and independence (Tambuam, 2010). This search for independence has been characterized as not only on a personal level but also on a social level. Healthy aging websites can provide individuals with this broader spectrum of information, including information on social activities. The National Council on Healthy Aging (NCOA) website includes a calendar of events, including healthy aging seminars, volunteer opportunities and other activities (NCOA, 2013). Firth et. Al (2008) found that use of the internet in older adults reduces social isolation, a key asset of well-being in this population. Tambaum (2010) reported that in relation to searching for healthy aging information, volunteer activities and online spiritual services were also searched.

In conclusion, through reviewing the literature, the importance of promoting healthy aging through an occupational therapy perspective has become significant in the baby boomer generation who are transitioning into older adults.

Statement of Purpose

As people are aging they are looking for information to stay healthy and engage in meaningful occupations. Recently, the internet has become a primary source for individuals to search for health and wellness information. As the average age of adults in the United States is increasing, there is a similar trend in the age of computer and internet users. More older adults are using the internet for health and wellness information (Wagner, Hassanein, & Head, 2010).

Occupational therapists recognize that health and wellness is supported and maintained when older adults are able to engage in occupations and activities that encourage the desire to participate (AOTA, 2008). It is through the healthy aging website, that older adults will be able to find health and wellness resources that will support active engagement in their occupations.

Therefore, the purpose of this thesis project was to create a website to assist older adults in aging well, and publicize Dominican University of California's and the department of Occupational Therapy's activities in the area of healthy aging. The website serves as an information source to promote healthy aging by providing users with relevant information and resources on the topic. The website can also help older adults adapt and modify certain aspects of their health by offering suggestions and recommendations on programs and resources provided by national and local community health aging agencies. The research-based content of the healthy aging website can facilitate the promotion of positive health behaviors of older adults through providing information and resources on evidence-based physical and mental health techniques. The healthy aging website provides links to outside organizations on healthy aging in local, state, nationwide, and government organizations.

The healthy aging website also provides Dominican University of California health profession majors in the areas of nursing, occupational therapy, and health sciences, access to healthy aging information and resources in one convenient location. The website also provides older adults and the general public with access to these resources electronically.

Theoretical Frameworks

Two theoretical frameworks were used to conceptualize and create an occupational therapy based healthy aging website. The Ecology of Human Performance (EHP) theory (Dunn, Gilbert & Parker, 1994) and the Six Dimensions of Wellness model (National Wellness Institute, 2012).

Ecology of Human Performance

The Ecology of Human Performance (EHP) theoretical model recognizes that people and their contexts are unique and dynamic. EHP, which is an occupational therapy theoretical

model, emphasizes that it is impossible to understand a person without considering his or her context (Dunn, Gilbert & Parker, 1994). EHP considers the relationship among people, what they want and need to do and where they need to conduct their daily lives (Dunn, Gilbert & Parker, 1994). People influence contexts and contexts influence people during task performance (Dunn, 2007).

Dunn, Brown and McGuigan were the occupational therapists who developed the EHP model in 1994. They felt that previous models of occupational therapy lacked context. The EHP model outlines the effect of context and proposes that interactions between people and their context are critical to occupational performance (Dunn, 2007).

The foci of the EHP model are person, context, task, performance and performance range (Dunn et al., 1994). The person refers to any individual or group who is being considered within the context of a desired behavioral or physical outcome (Dunn et al., 1994). Each person has a unique configuration of abilities, experiences, sensorimotor skills, cognitive skills and psychosocial skills (Dunn et al., 1994). The context of task performance encompasses temporal, physical, social, cultural, personal and virtual contexts (Dunn et al., 1994). The task is an objective set of behaviors necessary to accomplish a goal and takes on meaning through past experiences and interactions with context (Dunn et al., 1994). Performance is both the process and the result of the person interacting with context to engage in tasks (Dunn et al., 1994). The performance range is the configuration of tasks that people execute and is determined by the interaction between the person and the context (Dunn et al., 1994).

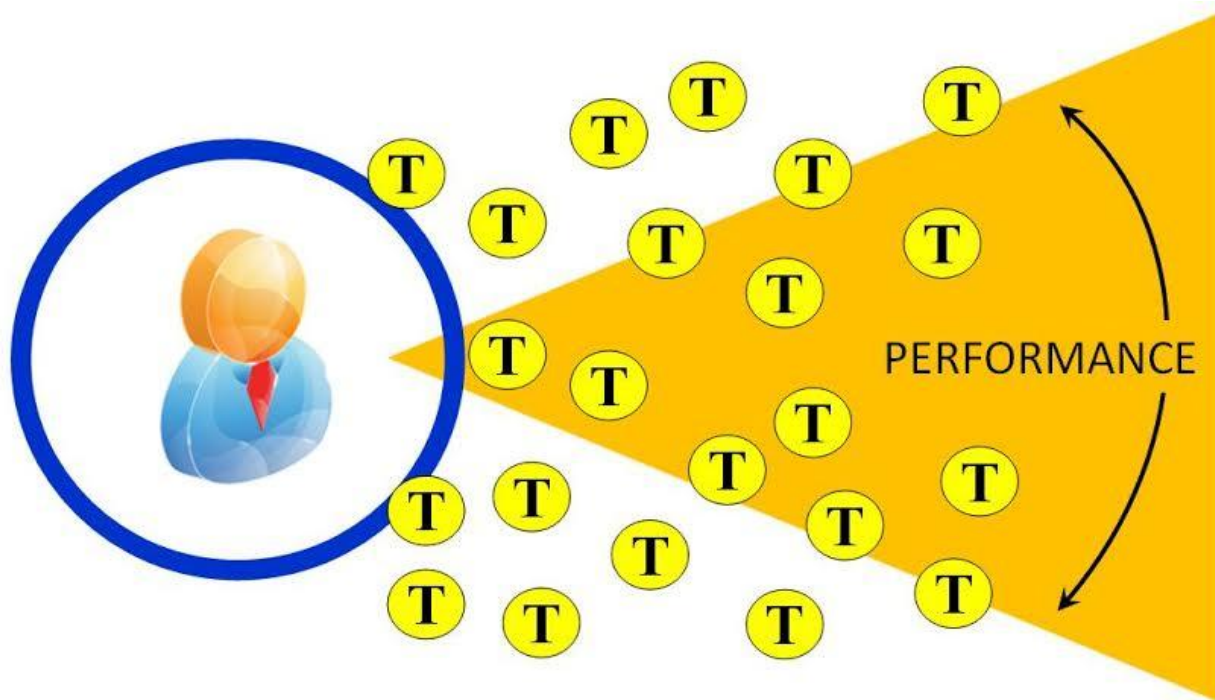


Figure 1. Ecology of Human Performance Model

The five occupational therapy intervention categories of EHP are: establish/restore, modify/adapt, alter, prevent and create. The first intervention, establish/restore, focuses on skills and abilities (Crist et al., 2000). If a person has not learned a necessary skill on his or her own, the occupational therapist assists the individual to establish or restore that skill (Crist et al., 2000). In our project, the healthy aging website will help older adults establish or restore a healthy lifestyle by providing suggestions for ways to achieve overall wellness within the resources found in the website. The second type of intervention is modify/adapt (Crist et al., 2000). The healthy aging website will provide research based interventions that will encourage older adults to modify or adapt their habits, activities, and environment to promote wellness. According to Crist et al. (2000) in order to modify or adapt, people must determine wants and needs to find a new strategy to achieve the outcome desired (Crist et al., 2000).

The third intervention category is alter, an intervention that involves a person finding an appropriate context to enable a positive performance pattern that includes the person's current skills and abilities in an activity (Crist et al., 2000). The healthy aging website provides a virtual context that helps people positively alter their lifestyle. The fourth type of intervention is prevent, which focuses on the prevention of maladaptive performances in relation to the person, task, and context (Crist et al., 2000). The fifth intervention is create, where the occupational therapist uses his or her skills as a professional and applies them to the needs of a community in ways that do not focus on the disability of the individual (Crist et al., 2000).

The goal of this thesis project was to create a virtual context, which is the occupation-based healthy aging website, which the older adult (the person) can use. Searching for information on the website is considered the task. The performance of the older adult depends on how well the website is designed to help individuals using this virtual context locate healthy aging content specific to their needs.

Six Dimensions of Wellness Model

A second theoretical framework, the Six Dimensions of Wellness Model, has also been applied to this project. Dr. Bill Hettler, the co-founder of the National Wellness Institute, created the Six Dimensional Wellness Model (National Wellness Institute, 2012). The model's main principle is that wellness does not have a single dimension, such as physical wellness. According to the model, wellness has six dimensions that work interdependently (National Wellness Institute, 2012). They are: emotional, occupational, social, physical, intellectual and spiritual wellness. For overall wellness to be achieved, these dimensions must be balanced (National Wellness Institute, 2012).

The Six Dimensions of Wellness Model gives a foundation and structure to the healthy aging website content. Because the Six Dimensions of Wellness model offers a holistic health perspective, it complements the occupational therapy belief in client-centered care. The healthy aging website caters to older adults through specific areas of interest that are organized using the Six Dimensions of Wellness categories.

Occupational dimension. The occupational dimension of wellness refers to attitudes about involvement in occupations. People who are unhappy with their occupational performance or occupations in general are not experiencing occupational wellness. Engaging in meaningful and rewarding activities leads individuals into occupational wellness. Meaningful activities are those that one finds important, enjoyable and rewarding (National Wellness Institute, 2012).

Physical dimension. The physical dimension of wellness focuses on physical health. Having a nutritious diet and actively engaging in exercise helps promote optimal physical wellness. Excessive use of alcohol, tobacco, and other drugs limits individuals from achieving physical wellness. Self-care and safety precautions are also taken into consideration in this dimension. Taking precautions to avoid disruptions in physical health helps facilitate physical wellness. Such steps may include preventative health care, up-to-date health care, proper medication, weight management, and adequate amounts of sleep (National Wellness Institute, 2012). Some examples of tips to achieve physical on the Healthy Aging Website include tai chi, yoga, aerobic exercise and strength training.

Social dimension. The social dimension of wellness considers people of all ages as social beings. Social wellness is defined as having an active role in the community. Through active social participation, people are more likely to make close relationships and experience a variety of environments. By being engaged in a variety of environments, individuals live in greater

harmony with others, which provides positive aspects in the social dimension (National Wellness Institute, 2012). The Dominican University of California Healthy Aging website includes research reviews on ways to achieve social wellness. These research reviews suggest volunteering and neighborhood socialization.

Intellectual dimension. The intellectual dimension of wellness refers to cognition and mental wellness. Engaging in learning activities such as reading, writing, puzzle solving, and attending classes is positive in intellectual wellness. Engaging in learning, memory, creative and problem solving activities increases intellectual wellness and slows decline in cognition. Challenging one's self to learn new things enhances intellectual wellness (National Wellness Institute, 2012). The Healthy Aging Website includes information on the Osher Lifelong Learning Institute, a program at Dominican University, which offers educational classes for older adults. The website suggests taking part in such classes can promote intellectual wellness.

The Six Dimensional Wellness Model is framed by the belief that health and wellness are dependent on multiple aspects of life, not solely on physical health or absence of disease. By working towards healthy aging, individuals are also working toward achieving overall wellness. In order to help older adults work towards wellness, the website will provide resources and information related to each of the Six Dimensions of Wellness: emotional, occupational, physical, intellectual, social, spiritual, and emotional.

Spiritual dimension. Spiritual wellness refers to reflecting on the meaning of life through integrating spiritual beliefs and values in actions. By searching for a deeper understanding of life, people are positively moving towards spiritual wellness. When spiritual wellness is achieved, people feel in harmony with their inner feelings and life occurrences (National

Wellness Institute, 2012). To promote spiritual wellness, the Healthy Aging Website provides a list of the local churches and places of worship located within the Marin County Area.

Emotional dimension. The emotional dimension refers to feelings of the individual.

A state of emotional wellness is when an individual has positive feelings and is able to manage negative feelings. For example, having positive self-esteem is an effective strategy for dealing with stress and improving self efficacy. One maladaptive strategy in this dimension includes the denial of one's own limitations. (National Wellness Institute, 2012). Taking a visit to the Santa Sabin Retreat Center located at Dominican University is an example of a suggestion for achieving emotional wellness within the Healthy Aging website.



Figure 2. Six Dimensions of Wellness (National Wellness Institute, 2012)

Methodology

Agency Description

The healthy aging website focused on two agencies. One “agency” was Dominican University of California as an academic institution and the second agency was the occupational therapy department at Dominican University of California.

Dominican University of California is a small private university located in San Rafael, California. The school was started in 1890 and is located 12 miles away from San Francisco. Dominican offers 50 programs of study, including biology, nursing, public health and occupational therapy. The 2010 enrollment was 2100 students, which includes two thirds undergraduate and one third graduate students. Approximately 90% of Dominican students are from California, 6% are from out of state and 3% are international.

The occupational therapy department at Dominican University of California was founded in 1996. The department offers an accelerated five year Bachelor's to Master's degree in occupational therapy. Students in the accelerated program receive a Bachelor of Science Degree in Health Science and a Master of Science in occupational therapy. A three-year Master's of Science degree in occupational therapy degree is also offered. The occupational therapy program at Dominican University is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE).

The university currently offers several programs for older adults in the local community. The occupational therapy curriculum has an emphasis on a community-based program development for Marin County and the San Francisco Bay Area. Some of these services are oriented towards older adults. Dominican University also offers programs in biology, nursing and occupational therapy that involve collaborating with the older adults in the community to

promote healthy aging. Some of the programs offered for older adults currently at Dominican University of California are the Healthy Seniors program directed by the occupational therapy department, the Intergenerational Communication Project directed by the biology department and Osher Lifelong Learning Institute (OLLI).

Project Design

The objective of the project was to design a website using an occupation-based perspective to promote healthy aging catered to older adults. The healthy aging website is located on the occupational therapy department section of the Dominican University website. The website design has five main areas, based on research conducted by the project developers on healthy aging who used the Ecology of Human Performance and the Dimensions of Wellness models as a guide.

These five main sections of the website are: 1. Tips for Healthy Aging 2. Dominican University of California Programs on Healthy Aging 3. Research Reviews on Healthy Aging and 4. Links to Organizations Promoting Healthy Aging. Another section, 5. News and Updates, was added to include recent activities, events and news of the Dominican University and the Dominican University of California Occupational Therapy Department.

Visual considerations for the design of the website were accounted for, such as font size, graphics and clarity of the content. The site used a larger than typical 14 or 16 font size font to help address potential vision problems that the older adult target user population may have. In accordance with the Dominican website protocol, the color scheme of the website was required to be same color as the main Dominican University homepage. The website used limited colors in order to coordinate with the homepage. The sections titles are clearly marked with headers and easily viewable with large font and contrasting colors for the user. Content on the website

includes a mission statement and a brief overview of the Dominican University of California occupational therapy department initiatives regarding healthy aging. Subheadings are clearly marked by drop down headers. Minimal graphics and photographs are included to prevent clutter and confusion, but enough to make the website aesthetically pleasing (Chen et al., 2010).

Target Population

The two primary target populations the healthy aging website serves are older adults living in the Marin County area and Dominican health professions students. Older adults living in Marin County were chosen because Dominican University of California is located in Marin County, which is a naturally occurring retirement community (NORC) and has a large demographic of older adults. The Dominican University of California health professions students are occupational therapy, nursing, health science, counseling psychology, and pre-medicine majors. The site will be beneficial for health professions students because they will have access to academic and community resources for their older adult clients. The secondary target populations are Dominican University of California faculty and staff, family members of older adults, and the general public looking for information and resources on healthy aging.

Ethical and legal considerations

Occupational therapy students are expected to adhere to the ethical standards of the American Occupational Therapy Association (AOTA). The healthy aging website states that occupational therapy students developed the Dominican University of California healthy aging website. In occupational therapy, it is important to provide information from credible sources to the general public that provides health and wellness information. The healthy aging website provides current evidence-based information on healthy aging. Occupational therapists recognize that health and wellness is supported and maintained when older adults are able to

engage in occupations and activities that support participation (AOTA, 2008). Through the use of the healthy aging website older adults may be able to find health and wellness resources that will support an active engagement in their occupations of choice. Content on the website was correctly cited and referenced.

The thesis project was also guided by the AOTA ethical principles of beneficence and veracity. Beneficence is defined as “all forms of action intended to benefit other persons” (AOTA, 2008). The website promotes beneficence because it was developed to provide older adults, health care professionals and individuals searching the website with research-based information that can contribute to overall health. Veracity is defined as “comprehensive, accurate, and objective transmission of information and includes fostering the client’s understanding of such information” (AOTA, 2008). The website is based on the principle of veracity because it provides accurate and comprehensive information to the general public to promote the understanding of healthy aging.

Project Development

The initial idea for the project was developed when a Strategic Initiative Grant was awarded to Dr. Ruth Ramsey in the fall of 2011 to conduct a feasibility study on the establishment of a resource for healthy aging at Dominican University of California. Dominican University currently has a number of service learning and community projects provided for older adults, but there was a need to create a healthy aging website to bring these resources into one virtual context location.

A consultant group was hired to survey existing programs at the university, assemble focus groups of stakeholders in Marin County and develop strategies to establish the Center for Healthy Aging at Dominican. Once the work was completed, the consultation group outlined

potential ideas that the university could implement. After analyzing these ideas, the occupational therapy department chose to create a website for healthy aging. The next step was to designate a thesis group in the occupational therapy department to create it. The content for the website was decided on, collected, written, and organized by the thesis team in the spring 2013 semester. With the guidance of the team's thesis advisor, Dr. Ruth Ramsey, the thesis team proceeded with the design of the website.

The design of the website was developed by researching the literature, investigating current websites on healthy aging, reviewing the Center for healthy aging Strategic Plan document and consulting with the Center for Healthy Aging steering committee. The website showcases programs at Dominican University of California associated with healthy aging. The site also provides older adults in Marin County with an easily navigable online resource for information pertaining to healthy aging, programs on healthy aging and offer referrals to local community programs and national organizations regarding healthy aging.

The healthy aging website was arranged to provide users with access to healthy aging tips to help improve their quality of life. To complement the tips, the website also provides a list of local programs and activities in which people can participate in Marin County. The research reviews section is included to provide evidence-based articles to support the information and recommendations of the website. The links to outside organizations are provided to assist the website user to find additional resources.

When the website was being designed, reading levels were taken into consideration for the various populations that would be viewing the healthy aging website. A sixth grade reading level was determined to be best suited and implemented. Content was filtered via a software program that reviewed the content to ensure a sixth grade reading level comprehension.

The thesis members were able to create the website after receiving instruction from the webmaster of the Dominican University of California Information and Technology department. The webmaster provided the thesis members with the basic information necessary to load the healthy aging web content into the main Dominican website. Rules and considerations were also given to the thesis members that the university follows for each department's webpage.

Project Implementation

After receiving the approval of Dr. Ruth Ramsey, the healthy aging website was made available on the Dominican University Occupational Therapy Department homepage with the assistance of the Dominican University of California webmaster in May of 2014. At this point it became available to the public and the plan is for occupational therapy students in the fall of 2014 to navigate the website to test it for its usefulness in providing helpful resources on healthy aging.

Project Evaluation

The healthy aging steering committee was given a copy of the website content in the fall of 2013. Upon completion of the website, a short survey will be placed on the website to solicit suggestions on improving it. Feedback for the website project will be solicited from occupational therapy students in the spring of 2014. Data will be collected via a survey, comments from the members of the Center for Healthy Aging steering committee, Healthy Seniors participants, Dominican University faculty and students, and older adults in the local community. The feedback on the website will be assessed annually and updates will be done as needed by students and faculty from the Occupational Therapy Department at Dominican University of California. The survey will be posted on the website from six months to one year in order for sufficient data to be collected and reported. A sustainability plan will be developed

to keep the website updated. After the website implementation, future updates and additions will be done by occupational therapy department staff, occupational therapy students at Dominican, or community volunteers for the healthy aging.

Discussion and Recommendations

Discussion

The initial project was to create a website for the Center for Healthy Aging at Dominican University. However, due to the university's budget constraints, the new project became a standalone website titled, Resources for Healthy Aging.

In order to plan this project, the initial question was to determine what type of information would be most helpful for older adults in regards to healthy aging. The Six Dimensions of Wellness model was selected to categorize the different health and wellness information that would be included on the healthy aging website. The Six Dimensions of Wellness was chosen for its all encompassing holistic view on health. Due to the holistic characteristic of occupational therapy, the website reflects an occupational therapy point of view on healthy aging via focusing on the client and their occupations. Areas such as occupational therapy based tips for wellness, research reviews, community resources and activities, volunteer opportunities, and educational opportunities were provided.

Recommendations

The next steps for the project would be to maintain and update the website, add new content as needed, publicize the website as a community resource in Marin County, and advertise the website through local media. It would be interesting to have future research that analyzes whether the older adults used the information obtained from the healthy aging website to

improve their health. This could be done through questionnaires and interviews addressing self-perceived health status and quality of life given to Healthy Seniors participants.

Limitations

The main limitation of this project was the requirement that the website be in the same format and design as the Dominican University of California's website. This precluded the use of larger font, creating a format with more blank space, adding large "click here buttons," and providing a speech function to hear text read aloud, which would have made the website more user friendly for the older population. Other limitations included the amount of traffic the website will be able to receive. The website is located under the occupational therapy department website, which is a subcategory of the main Dominican University homepage. The healthy aging website would potentially gather more website traffic if it there were a direct link on the main Dominican University of California homepage.

Another limitation was regarding the content of the website. For the Research Reviews on Healthy Aging section, the initial plan was to write a brief summary of the research articles and include a direct link to the actual article for the viewer to read. However, due to limited access of the journals related to copyright laws, this was not feasible. A citation was placed at the end of each article review to make it possible for readers to obtain the articles at Dominican University Alemany Library.

Occupational Therapy Implications

In occupational therapy, providing client-centered care and education is within the scope of our practice (AOTA, 2013). On the healthy aging website, people can find holistic healthy aging resources that cater to their specific needs. The website may also benefit health professionals, including occupational therapists, nurses, and physician assistants working with

older adults. Now there is a virtual context that provides them with an occupation-focused general overview of tips, programs, and evidence-based resources on healthy aging.

Occupational therapists in other settings, such as pediatrics and mental health, may want to consider creating similar websites to promote their knowledge and resources. The website also provides an opportunity to reach a larger audience. The website is in a public virtual context that will increase visibility for occupational therapy and Dominican University of California. The Dominican University of California healthy aging website will continue to serve as a healthy aging resource hub to promote healthy aging at Dominican University, Marin County, and improve the health of the community.

Summary and Conclusion

For the first time at Dominican University of California, there is now a website where Dominican health profession majors and the public have access to information regarding healthy aging and local resources for older adults in one virtual location. This website provides an additional resource for healthy aging information for older adults in Marin County and throughout the country, utilizing an occupational therapy perspective. Ideally, web users will find the resources easy to understand, interesting, and will be inspired to make healthy lifestyle changes that will help them age well. Health profession practitioners, students, and faculty can now have their clients or students visit the website to obtain basic general information about healthy aging from an occupational therapy perspective.

The need for a Dominican University of California Resources for Healthy Aging website was driven by the lack of a virtual context providing healthy aging information for local older adults and Dominican University of California residents. The goal of this thesis project was to provide older adults, Dominican University of California health professionals and anyone with

access to the internet with an academically-based credible resource on healthy aging for an Occupational Therapy perspective.

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APPENDIX A

Healthy Aging Website Content Outline

I. Healthy Aging Website Home Page

Introduction: Welcome to the Healthy Aging Website!

The Fastest growing age group in the United States is older adults. Currently, there are about 4.2 million people over the age of 65 in California. This website provides healthy aging resources and ideas for use by older adults, their families, health professionals, and the general public. It was designed by occupational therapy graduate students in partial fulfillment of requirements of their Master of Science degree. The information provided is occupationally centered and evidence-based, and can help users learning how to improve their quality of life as they age.

Learn more about healthy aging with the topics below!

- Tips for Healthy Aging
- Dominican Resources for Healthy Aging
- Research Reviews on Healthy Aging
- Links to Organizations Promoting Healthy Aging
- News & Events

II. Tips for Healthy Aging

- Occupational Wellness
 - Volunteering
- Physical Wellness
 - Nutrition and Hydration
 - Exercise
- Social Wellness
 - Interpersonal Relationships
- Intellectual Wellness
 - College Classes
- Spiritual Wellness
 - Spiritual Centers
- Emotional Wellness
 - Emotional Health

III. Dominican University of California Resources for Healthy Aging

- Occupational Wellness
 - Healthy Seniors Program
- Physical Wellness
 - Community Health Project
 - Conlan Center
 - Dining Hall
- Social Wellness
 - Intergenerational Conversations Project
- Intellectual Wellness
 - Osher Lifelong Learning Institute
 - Leadership Series

- Alemany Bishop Library
- Spiritual & Emotional Wellness
 - Santa Sabina Retreat Center

IV. Research Reviews Related to Healthy Aging

- Occupational Wellness
 - Modifying your home decreases falling.
 - Sleeping optimizes motor skills in older adults.
- Physical Wellness
 - Developing a routine helps older adults remember to take medication.
 - Using a Wii Fit may improve balance in older adults.
 - Monitoring devices for older adults assist with the maintenance of health.
- Social Wellness
 - Virtual volunteering increases a sense of belonging in older adults.
 - Older adults socializing in their neighborhood have better health outcomes.
- Intellectual Wellness
 - Tai Chi may increase brain function in older adults.
 - Learning how to play the piano may help prevent cognitive decline.
- Spiritual & Emotional Wellness
 - Listening to relaxing music increases mental well-being.
 - Having personal strength and religiosity helps older adults who are grieving and recover from loss.

V. Links to Organizations Promoting Healthy Aging

- Local (Marin County)
- State of California
- National
- International

IV. News & Updates

- No current updates at this time.

APPENDIX A.1

Healthy Aging Homepage Web Content

Welcome to the Healthy Aging Website!

The fastest growing age group in the United States is older adults. Currently, there are about 4.2 million people over the age of 65 in California. This website provides healthy aging resources and ideas for use by older adults, their families, health professionals, and the general public. It was designed by occupational therapy graduate students in partial fulfillment of requirements for their Master of Science degree. The information provided is occupation-centered and evidence-based, and can help users learning how improve their quality of life as they age.

Learn more about healthy aging with the topics below!

- **Tips for Healthy Aging**
- **Dominican Resources for Healthy Aging**
- **Research Reviews on Healthy Aging**
- **Organizations Promoting Healthy Aging**
- **News & Events**

To change font size hit Ctrl +/- on keyboard

Return to Occupational Therapy Dept. homepage

APPENDIX A.2

Tips for Healthy Aging Content

TIPS FOR HEALTHY AGING

Welcome to Tips for Healthy Aging!

The content in this section is categorized using the Six Dimensions of Wellness Model: occupational, physical, social, intellectual, spiritual and emotional. This section provides ideas for ways to improve your health and well being as an older adult. This information was obtained from evidence-based research articles and reputable websites. Regardless of your health and wellness needs, this section can help you age well.

Dimensions of Wellness

OCCUPATIONAL WELLNESS

PHYSICAL WELLNESS

SOCIAL WELLNESS

INTELLECTUAL WELLNESS

SPIRITUAL WELLNESS

EMOTIONAL WELLNESS

OCCUPATIONAL WELLNESS DIMENSION

Occupational wellness is felt by individuals when they experiences satisfaction and fulfillment in their work. Through both volunteering and paid employment individuals can experience occupational wellness. Volunteering contributes to healthy aging because it expands social circles, provides people with a sense of accomplishment, and increases self-esteem through the completion of projects and helping others (Brown, Nesse, Vinokur & Smith, 2003). Some great websites to find volunteering opportunities in Marin County are Volunteer Marin, Marin County Parks, Volunteer Information Center, and the Center for Volunteer and Nonprofit Leadership.

PHYSICAL WELLNESS DIMENSION

The physical dimension of wellness includes information and resources regarding nutrition and hydration, and on the health benefits of different forms of exercise such as Tai Chi, yoga, aerobic exercise, and strength training.

Nutrition and Hydration

Good nutrition is essential for healthy aging. Older adults receive essential nutrients when eating a diet rich in natural foods like fruit, vegetables, whole grains, lean meat and healthy fats like

olive oil, fish oil and coconut oil. Processed foods such as white bread/rice, refined sugar/artificial sugar and fast food should be avoided. Essential substances such as antioxidants, polyphenols and other essential nutrients found in fresh fruits and vegetables decrease rates of diabetes, heart disease, stroke, cancer, cognitive decline and dementia (Brown-Borg et al., 2012).

Drinking enough fluids is essential because dehydration can cause numerous health problems, especially in older adults. Severe dehydration can lead to hospitalization, infection, loss of cognitive function, and even death if not treated immediately. Due to changes in the body during aging, such as a decrease in total body water and a decrease in being able to sense thirst, dehydration can happen quickly in older adults and without the individual being aware of it. Staying hydrated every day is the best way to prevent this (Morrow, 2013).

Two excellent websites on healthy diet and hydration tips for older adults are HelpGuide and LiveStrong. Some local health food stores in Marin County that carry organic wholesome foods are Whole Foods Market in San Rafael, Mill Valley and Novato and Good Earth Natural Foods .

Physical Exercise

Physical exercise is a great way to stay healthy by increasing blood circulation, raising metabolism, reducing stress, improving the quality of sleep and maintaining or increasing the strength of muscles and bones. Some excellent forms of exercise for older adults are Tai Chi, Yoga, aerobic exercise, and strength training.

Tai Chi.

Tai chi is a form of low impact exercise that improves the mental and physical health of older adults, in addition to improving quality of life (Ho, Wen-Min, & Lien, 2007). “Sun style” tai chi is considered the best for older adults because the stance limits strain on the knees. Information on how to start learning tai chi can be found at Start Learning Tai Chi.

Yoga.

Yoga is an ancient Indian mind-body approach to wellness that consists of meditation, breathing patterns and specific postures. Yoga is a low impact exercise that improves body flexibility, strength, physical health and promotes well being (Oken et al. 2006). The best types of yoga for seniors are Iyengar, because the poses can be adapted with props, and Hatha and Restorative yoga, which are gentle forms of the practice. "Silver yoga" is a type of yoga developed just for older adults.

Iyengar Yoga focuses on alignment and precise movements. Yoga props such as blocks and straps are usually used as part of this type of yoga for those beginners who are not as flexible. Practicing this type of yoga will help you learn classic yoga poses, so that whatever other style you practice, you will have the basic fundamentals on how to do each position. More information on Iyengar yoga can be found at Yoga for Older Adults.

Hatha yoga is considered a gentle and basic yoga practice. A hatha class will likely be a slow-paced stretching class with some simple breathing exercises and perhaps seated meditation. This

is a good place to learn beginners' poses, relaxation techniques and become comfortable with yoga. More information on hatha yoga can be found [here](#).

Restorative yoga is a passive yoga practice with long holds and little movement that allows your muscles to relax deeply. It additionally involves turning your attention inward, which releases deep tension, helps you relax and restores energy.

Some yoga studios in Marin County that offer classes appropriate for older adults are the Yoga Tree and Yoga Works.

Aerobic exercise

Aerobic exercise is highly beneficial to older adults because it can maintain or increase physical functioning in the areas of walking, balance and strength and improve psychological and cognitive functioning (Rabaglietti, Liubicich, & Ciairano, 2010).

Different forms of aerobic exercise that are low impact and beneficial to older adults are bike riding, swimming, hiking and speed walking. Fortunately, Marin County is full of beautiful trails and pools for swimming. Some nice areas to hike are China Camp, the Marin Headlands, Mt. Tamalpais, the Lucas Valley loop and many more. Information on the public hiking trails in Marin county and information on public swimming pools. If you wish to perform aerobic exercise or swimming in a gym, you can become a member of the Conlan Center at Dominican University, the YMCA or 24 Hour Fitness.

Strength Training

Strength training helps keep bones strong, increases metabolism, decreases the risk of falling and provides psychological benefits in older adults (Fiatarone, O' Neill, Doyle, & Ryan, 1994). Strength training can either be done at home or at a gym. A good strength training program for older adults is one that focuses on progressive resistance so that the individual gradually lifts more and more weight. For information on specific workout routines and benefits of strength training for older adults, please [click here](#). Popular gyms in Marin County can be found [here](#).

SOCIAL WELLNESS DIMENSION

The social dimension of wellness includes interpersonal relationships and healthy social activities such as clubs, affinity groups and social gatherings. Interpersonal relationships are important in promoting healthy aging. Older adults have reported that maintaining positive relationships with other people and obtaining social support is the most important factor affecting successful aging (Cha, Seo, Sok, 2012). Additionally, studies show that emotional support from a network of social relationships is associated with better cognitive functioning in older adults (Seeman, Albert, Lusignolo & Berkman, 2001).

Numerous social clubs specifically for older adults in Marin County can be found here. On this website there are clubs that offer activities such as group exercise, games such as chess, mahjong, bingo, and bridge, parties, luncheons, tours and more.

The Dance Palace Community Center in Marin is an excellent place for older adults to go for socialization, classes, workshops and weekly luncheons. The Mill Valley Senior Club provides many programs including recreational activities like movie matinees, luncheons and day trips. The Novato Senior Citizen's Club provides many activities for adults 50 years old and older including potlucks, exercise classes, counseling, home delivered groceries and many other services. More information about this club can be found here.

The Margaret Todd Senior Center in Novato, California offers enrichment and fitness courses, special events, game groups, specialty groups, and outreach services that bring people together, encourage social connections, and create new learning experiences. If you're looking to meet new friends, relax, or just have fun, the Margaret Todd Senior Center is the place for you.

INTELLECTUAL WELLNESS DIMENSION

The intellectual dimension of the wellness model includes activities that stimulate the mind such as reading and classes. College classes can help maintain or improve the cognition of older adults by requiring them to memorize new words/concepts and problem solve, which all contribute to intelligence (National Wellness Institute, 2012). Dominican University of San Rafael currently offers numerous classes to stimulate the minds of adults over the age of 50 at the Osher Lifelong Learning Institute (OLLI). OLLI offers six-week courses in topics such as history, music, literature, political science, science and philosophy, all without the stress of homework, tests, and grades. More information about OLLI can be found here.

A list of numerous different classes and information to promote intellectual growth is offered at the College of Marin. Book clubs are a way to motivate older adults to read often and to also provide a social environment. There are numerous book clubs in San Rafael that can be readily joined. The Marin County Library offers books, movies, events, programs and more.

SPIRITUAL WELLNESS DIMENSION

Spirituality is defined as, "A belief in a power operating in the universe that is greater than oneself," and has been gaining attention within the scientific community for having a positive impact on health (National Wellness Institute, 2012)

Developing or maintaining a spiritual practice can improve coping skills and social support, foster feelings of optimism and hope, promote healthy behavior, reduce feelings of depression and anxiety and encourage relaxation. By reducing stressful feelings and promoting healing ones, spirituality can positively influence immune, cardiovascular, hormonal and nervous systems (National Wellness Institute, 2013).

A list of all of the local churches in Marin County can be found here and some local spiritual centers are Green Gulch Zen Center, Spirit Rock Meditation Center, The Blue Mountain Center for Meditation and Shambhala.

EMOTIONAL WELLNESS DIMENSION

Maintaining emotional well being and positive affect can have a significant impact on health. Studies show that older adults with a positive mood live longer than their less content counterparts.

Older adults are more likely to have a positive outlook on life than any other age group, but depression is still an issue. Several effective treatments are available for depression in older adults. Pharmacotherapy and several versions of psychotherapy, including interpersonal, brief psychodynamic, problem-solving and cognitive-behavioral, can significantly reduce depression and increase emotional well-being.

The most effective preventative measure against depression for older adults is to regularly engage in physical activity, social participation and maintain a sense of purpose in life. Information on mental/emotional health and how to get help can be found at Marin Health and Human Services, Jewish Family Services and the Community Institute for Psychotherapy.

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APPENDIX A.3

Dominican Resources for Healthy Aging Content

DOMINICAN UNIVERSITY OF CA PROGRAMS

Healthy aging through Dominican University campus resources!

This section provides an assortment of resources that can be found at Dominican University's beautiful campus that promotes healthy aging across all dimensions of wellness. Feel free to browse the list of organizations, programs, and facilities below and discover what interests you!

OCCUPATIONAL WELLNESS

Healthy Seniors Program - Department of Occupational Therapy

Healthy Seniors is a community-based program offered by the occupational therapy department to adults ages 60 and over in the Marin County area. The program is offered every fall and spring semester for eight weeks, once weekly for one to two hours. Under the guidance and supervision of faculty, students work with participants to complete a functional assessment and then develop a plan to help keep you healthy and living independently. Interventions are individualized and may include range of motion, strength, home safety tips, wellness education and fall prevention. Social and leisure activities are also addressed to help you achieve a balanced life. Promoting healthy aging and community living is the major goal of the program. This program helps promote and restore occupational wellness in all aspects of your life. To enroll or for more information, email: healthyseniors@dominican.edu.

PHYSICAL WELLNESS

Community Health Project - Department of Nursing

The nursing department community health class at Dominican University of California uses a service learning approach to promote the health of older adults in the community. Throughout the school year, community health nursing students visit Marin Housing Authority sites in Marin and Whistlestop, a social service in San Rafael to provide preventative health care services. At these sites the students perform a health related needs assessments. The students then plan and present educational sessions for the community. Samples of topics include, diabetes management, medication management and nutrition. Contact the Dominican Nursing Department for more information.

Conlan Center

The Conlan Center is a recreational gym located on the Dominican University of California campus. Although the Conlan Center is primarily used by Dominican students, staff and faculty, monthly memberships are also available to the public. The Conlan Center provides an environment to promote healthy aging and exercise, including a gym with low impact elliptical

machines, bicycle machines, treadmills and a full weight room. Conlan is also home to a recreational pool that is open seasonally. As a member you have access to gym equipment and use of the pool for lap or recreational swimming. In addition, the Conlan Center offers fitness classes including turbo kick, yoga, NIA, and zumba. Personal trainers are also available for an additional fee.

For member fees click the link to the Conlan Center's home page or visit the center yourself!

Dining Hall

Caleruega Dining Hall is the on-campus dining facility at Dominican University. Although primarily used by Dominican students and faculty, it is also open to the public. At reasonable prices the dining hall serves breakfast, lunch and dinner on weekdays and brunch and dinner on weekends. Along with a daily changing menu the dining hall offers a full salad bar, deli sandwich bar, and an assortment of soups, breads and fresh fruit. You can choose between many nutritious options including organic, vegetarian and gluten free foods. The dining hall gives you an opportunity to eat nutritious and healthy meals and dine with others if you prefer not to cook for yourself.

More Information

- **Operating Hours**
- **Daily Menus**

SOCIAL WELLNESS

Intergenerational Conversations Project

The Intergenerational Conversations matches local older adults in the community with Dominican students for conversations and mentoring. If you participate in the project you will meet with a trained student on a weekly basis to chat and on occasion for outings. This project is designed to help students develop positive listening skills and decrease social isolation in older adults in the community.

If you wish to participate please contact Mr. Mark Jaime at Mark.jaime@dominican.edu

INTELLECTUAL WELLNESS

Osher Lifelong Learning Institute (OLLI)

OLLI is an academic program of Dominican University of California founded in 2004 and supported by the Bernard Osher Foundation, the resources of the University and member donations and tuition. OLLI caters to adults of age 50 and over. Six-week courses in the topics such as Art History, Film, History, Music, Political Science, Science and Philosophy provide the

intellectual challenge of academic programs minus the stress of grades, tests or homework. Now you can become involved with a learning community of peers seeking information, greater creativity and self-expression on a wide array of topics.

OLLI membership fees vary depending the number of classes and type of membership. Scholarships are also available. Current membership fees are listed and can be found at the official Dominican OLLI link below.

Institute for Leadership Studies Lecture Series

The Institute of Leadership Studies at Dominican University hosts evening lectures in Angelico Concert Hall located on the Dominican campus. Lectures in the Leadership Series are given by leading figures in politics, business, literature and academics. Best-selling authors are also popular lecturers. Past speakers in the series have included Al Gore, Madelaine Albright, Nancy Pelosi, Tom Brokaw, Isabel Allende, Daniel Goleman, Caroline Kennedy, Chris Matthews and Suze Orman. The series is open to the public. Many of the lectures are free, but some require ticket purchase. Speakers are often available for “meet and greets” in addition to autograph signings after the lecture. Best-selling authors often include an autographed copy of their book as part of your purchased ticket.

To request information on the upcoming lecturers please e-mail ILSevents@dominican.edu. Include your home address in your email to receive a printed copy of the leadership lectures each semester.

Alemanya Bishop Library

The Alemany Library at Dominican is open for public use daily. The Alemany Library has great resources for Dominican students and the general public. The general public may have full access to the library with a Marin public library card and valid ID. The library is home to scholarly articles and books and also has a large section of CD's, videos and books for recreational reading. The library is equipped with a quiet area that is furnished with plush couches and bean bags to create a comfortable reading space. Many study tables and desks are also available. Stop by the Dominican Library to see all the amenities available or check out the library's home link:

SPIRITUAL AND EMOTIONAL WELLNESS

Santa Sabina Retreat Center

The Santa Sabina Center is a retreat center located at the Dominican University campus. The center offers their own private retreats, provides time and space for private retreats, and hosts group retreats of other faith traditions. Grounded in the Dominican monastic heritage of spirituality, the center offers a space of beauty, simplicity and silence for people of all faiths to enter more deeply into spiritual practice. To learn more about future retreats or to plan your own private retreat, visit the Santa Sabina website

APPENDIX A.4 Research Reviews on Healthy Aging

RESEARCH REVIEWS ON HEALTHY AGING

Welcome to the Research Review Archive!

This section provides reviews of evidence-based research promoting health and wellbeing in older adults. The information has been reviewed by health professions students, and is from established peer-reviewed academic journals. Having accurate information can help you make informed decisions about healthy aging. Reviews in this section are categorized by the six dimensions of wellness: occupational, physical, social, intellectual, spiritual and emotional wellness. The topics range from fall prevention and Tai Chi to the health benefits of volunteering. If you are interested in reading the full version of the articles mentioned in this section, please visit the Dominican University Alemany Library.

OCCUPATIONAL WELLNESS

Modifying your home decreases falling

Key Finding: Older adults can help prevent falls by exercising and modifying their homes.

This study reviewed 33 intervention-based research studies that focused on factors that prevent falls in the home. Occupational therapists assisted in home assessments in each of the studies. Occupational therapists provided home modification suggestions to older adults to prevent potential falls from occurring. The participants were taught fall prevention techniques which heightened their confidence in their own functional mobility. New exercise techniques to help prevent falls were also taught. The best results for fall prevention were in the areas of modifying the home environment and keeping physically fit. Some ways to prevent falls are taking out floor rugs, using non-slip rubber mats in the bathtub, and having brighter lighting in hard to see areas.

Chase, C. A., Mann, K., Wasek, S., & Arbesman, M. (2012). Systematic review of the effect of home modification and fall prevention programs on falls and the performance of community-dwelling older adults. *American Journal of Occupational Therapy*, 66, 284–291.
<http://dx.doi.org/10.5014/ajot.2012.005017>

Sleep optimizes motor skills in older adults

Key Finding: Having a good night's rest increases your ability to be more physically active.

This study looked at 16 healthy older adults and 15 healthy young adults to determine whether sleep improves motor memory. The older adult participants were given a motor test three times after 12 hours of being awake during the daytime. The results showed that the participants had a significant decrease in motor performance. When the same older adult participants were retested 24 hours later, after a day of being awake and then given a night of sleep, they had a 17.4% increase in motor skills. The younger participants, who also did the same test, had an increase of 17.3%. The results imply that sleep improves motor functioning for people of all ages.

Tucker, M., McKinley, S., & Stickgold, R. (2011). Sleep optimizes motor skill in older adults. *Journal of the American Geriatrics Society*, 59, 603-609. doi:10.1111/j.1532-5415.2011.03324.x

PHYSICAL WELLNESS

Developing a routine helps older adults remember to take medication.

Key Finding: Older adults could benefit from placing their medication at easily visible and reachable locations such as in the bathroom counter, kitchen counter, or nightstand.

The study of 149 community-dwelling older adults examined ways they took their medication. The study found that when participants established routines to take medicine during meals, when they woke up and before they went to bed, or placed medication in areas where they would most likely see them were more likely to take their medication properly. Some participants also used inexpensive low technology such as pillboxes with an embedded alarm or re-wrote labels with larger fonts on the medicine bottles.

Sanders, M. J., & Van Oss, T. (2013). Using daily routines to promote medication adherence in older adults. *American Journal of Occupational Therapy*, 67, 91-99.
<http://dx.doi.org/10.5014/ajot.2013.005033>

Using the Wii Fit improves balance in older adults

Key Finding: Older adults can benefit from doing exercises on the Wii Fit.

This study found that Nintendo Wii Fit use improved balance for a group of older adults ages 53 to 91 years old. The 17 participants were divided into three groups. For four weeks, one group exercised only using the Wii Fit, the second group had training with physical therapy and the Wii Fit, and the third group only had physical therapy. After four weeks, balance assessments were done to look for improvements. The study found that the group that did physical therapy and the Wii Fit and the group that only did physical therapy had better balance results than the group that did exercises with the Wii Fit alone. However, in all groups, there was a significant difference in balance improvement.

Batani, H. (2011). Changes in balance in older adults based on use of physical therapy vs the wii fit gaming system: a preliminary study. *Physiotherapy*, 98, 211-216. doi:10.1016/j.physio.2011.02.004

Monitoring devices for older adults help maintain health

Key Finding: Monitoring devices are beneficial for older adults who want to live independently in their home with access to reliable and professional help.

This study analyzed 162 previously completed studies that reviewed the use of monitoring technology in older adults. The monitoring technology was described as a variety of wearable medical alert systems that could detect changes in an individual's movements or have a button for the individual to press that alerts an operator of a distress. The types of monitoring devices included personal alarm devices, fall detection devices, and activity monitoring devices worn around an individual's neck. Because most of the monitoring devices were compact and wearable, the devices did not compromise the older adult's body movements and mobility

freedom. Monitoring devices could potentially assist an older adult when a fall happens, especially if the individual lives alone.

Wagner, F., Basran., J., & Dal Bello-Haas, V. (2012). A review of monitoring technology for use with older adults. *Journal of Geriatric Physical Therapy*, 35(1), 28-34.

SOCIAL WELLNESS

Virtual volunteering increases a sense of belonging in older adults

Key Finding: Virtual volunteering helps older adults with mobility issues or other physical impairments to socially participate in activities.

This 2010 qualitative study found that the internet has helped many older adults take an active participation role in volunteering through a virtual context. As more Baby Boomers are becoming internet savvy, opportunities to volunteer have gone into the virtual realm. Twenty-two older virtual volunteers from the United States were interviewed. Of the 22 participants, 44% reported having a chronic illness which limited their physical mobility. Because of this, the participants chose to volunteer online. Some of the activities participants volunteered for were writing annual reports, drafting grant proposals, or being a webmaster for a non-profit organization. These activities give older adults an opportunity to provide meaningful volunteer experiences. The study found that the older adults who participated in virtual volunteering had an increased sense of belonging compared with older adults who did not volunteer.

Mukherjee, D. (2011). Participation of older adults in virtual volunteering: A qualitative analysis. *Aging Journal International*, 36, 253-266. doi: 10.1007/s12126-010-0988-6

Older adults who socialize in their neighborhood have improved health outcomes

Key Finding: Joining the local community or senior center to participate in activities may improve your health.

This 2008 Canadian study focused on the social participation of older adults in Montreal, Quebec. With the 282 participants, the study found that those who visited family members, attended activities at the local community center, and engaged in a hobby outside of their home were more likely to be in good health than those who did not. The study also found that almost half of the older adults in the study were involved in some form of volunteer work at least once a week or every day.

Richard, L., Gauvin, L., Gosselin, C., & Laforest, S. (2008). Staying connected: neighborhood correlates of social participation among older adults living in an urban environment in Montreal, Quebec. *Health Promotion International*, 24(1), 46-57. doi: 10.1093/heapro/dan039

INTELLECTUAL WELLNESS

Tai Chi exercise may increase brain function

Key Finding: Doing Tai Chi exercises can improve memory and attention.

This cross-sectional study from Hong Kong, China focused on the cognitive benefits of Tai Chi for older adults. Tai Chi is a type of slow movement Chinese martial art form that is practiced for defense training, but also for its potential health benefits. This study reviewed three different groups of adults ages 60 and older. One group consisted of 42 participants from various Tai Chi clubs. Another group consisted of 49 participants recruited from community centers that had regular exercising habits. The third group consisted of 44 participants from local senior centers who did not exercise. The slow movements of Tai Chi may provide older adults with a slow movement exercise that is easy on their joints, promote balance, and the potential to increase brain function. It may be beneficial for older adults to practice Tai Chi as a form of exercise.

Man, D.W., Tsang, W.W., & Hui-Chan, C.W. (2010). Do older Tai Chi practitioners have better attention and memory function? *The Journal of Alternative and Complementary Medicine*, 16 (12), 1259-1264. doi:10.1089/acm.2009.0462

Learning to play the piano may help prevent cognitive decline

Key Finding: Learning how to play a musical instrument may increase attention and prevent memory loss.

In this study, 31 older adults with no prior piano experience were taught how to play the piano during individualized piano sessions. Half of the group were given piano lessons and the other half were not. The older adults attended 30 minute individualized piano sessions and practiced three hours on their own each week for three months. During the lessons, the participants learned various piano exercises from two basic piano course books. Each week they were taught new piano pieces. After 6 months, the results suggested that learning how to play the piano may increase attention and concentration in older adults, helping deter cognitive decline.

Bugos, J.A., Perlstein, W.M., McCrae, C.S., Brophy, T.S., & Bedenbaugh, P.H. (2007). Individualized piano instruction enhances executive functioning and working memory in older adults. *Aging & Mental Health*, 11(4), 464-471. doi:10.1080/1307860601086504

SPIRITUAL & EMOTIONAL WELLNESS

Listening to relaxing music increases mental well-being

Key Finding: Listening to calming music is an inexpensive and helpful way of relaxing and developing a positive frame of mind.

An 11 month randomized controlled study in Singapore examined whether listening to music would reduce symptoms of sadness among older adults. In the study, 50 older adults were divided equally into two groups. One group was given the option to listen to a variety of slow rhythmic music of their choice for 30 minutes a week for eight weeks, while second group did not listen to any music. The older adults listened to a selection of what was considered calming music through other previous studies. The music consisted of Chinese, Malay, Indian, and Western music. The music that was offered to the participants was chosen based on the characteristics of the beats in the songs, which had been shown to promote relaxation and lowered anxiety. A depression assessment was used to determine that participants who had listened to the calming music had a decrease in their levels of sadness.

Chan, M.F., Wong, Z.Y., Onishi, H., & Thayala, N.V. (2011). Effects of music on depression in older people: A randomized controlled trial. *Journal of Clinical Nursing*, 21, 776-783. doi: 10.1111/j.1365-2702.2011.03954.x

Having personal strength and religiosity helps older adults who are grieving over a loss
Key Finding: Having a social support system of family, friends, support groups, or having a form of spirituality could help with the loss of a loved one.

A 2011 four year longitudinal study was done on 101 older adults who recently experienced a loss of a spouse. In the study, those who found meaning in the death and or had practiced some form of religion to gain personal strength did better than those in the study that did not. Participants who coped well had found meaning in death and had a positive outlook in life. The participants viewed the time after their spouse's death as a period for emotional "recovery". Those who had supportive social circles of family and friends that attended to their emotional and social needs demonstrated a stronger ability to cope.

Kim, S.H., Kjervik, D., Belyea, M. & Choi, E.S. (2011). Personal strength and finding meaning in conjugally bereaved older adults: A four-year study prospective analysis. *Death Studies*, 35, 197-218. doi: 10.1080/07481187.2010.518425

APPENDIX A.5 Organizations Promoting Healthy Aging Content

ORGANIZATIONS PROMOTING HEALTHY AGING

Here is a list of organizations that share our goals of improving quality of life and promoting healthy aging for all.

LOCAL (MARIN COUNTY)

Center for Volunteering and Nonprofit Leadership of Marin

Learn how this center strives to advance non-profit organizations and volunteerism by strengthening leadership, encouraging innovation and empowering individuals in the community

Margaret Todd Senior Center

The center offers enrichment and fitness courses, special events, game groups, specialty groups, and outreach services that bring people together, encourage social connections, and create new learning experiences. If you're looking to meet new friends, simply relax, or just have fun, the Margaret Todd Senior Center is the place for you.

Marguerita C. Johnson Senior Center

The center provides a variety of programs, referral services, and activities for senior citizens 60 and older. Activities include monthly shopping trips, grocery bingo, arts & crafts, tai-chi, movie day, and monthly luncheons with guest speakers.

Marin County Commission on Aging

Learn more about the contribution this commission provides thorough information and advocacy for services that enable older adults to live with dignity.

Marin County Division on Aging

Access resources from Marin County's Division on Aging and Adult Services.

Marin Health & Human Services

Learn more about the various public benefit programs that promote and protect the health, well-being, self-sufficiency and safety of all people in Marin County

Marin Network of Care

Access a resource hub for individuals, families, and agencies seeking information about behavioral health services, laws and related news.

Marin Village

Learn more Information on how this volunteer organization helps older adults age in the comfort of their homes.

Senior Access

Find out how this socialization program works to provide high quality care for older adults experiencing memory loss or cognitive decline.

Whistlestop

Learn more about how this Active Aging Center promotes independence and strives to improve the well-being and quality of life for older adults.

STATE OF CALIFORNIA

CalFresh Program

Learn if you qualify for the CalFresh food stamp program that serves to aide your food budget to put healthy and nutritious food on the table.

California Department of Aging

Learn more about the various programs this department offers for older adults and caregivers.

California Department of Health Care Services

Find out more details on the various health care services this department finances and oversees the California Medical Assistance Program (Medi-Cal).

California Department of Public Health

Learn more about California's programs and services, information on health, certificates and licenses, as well as access to statistics and surveys.

Government Health Care

Discover how you can shop for a health insurance plan that is right for you and learn about the Affordable Care Act.

Health Insurance Counseling and Advocacy Program

Find out the most up-to-date Medicare information for beneficiaries, their families and the professionals who serve them.

NATIONAL

American Occupational Therapy Association

This website provides a wide variety of tips on how to stay healthy as you age, from living with arthritis, to safety tips for older drivers and fall prevention information.

American Occupational Therapy Association: Client Stories

Read testimonials of how occupational therapy has positively impacted the lives of people of all ages and abilities.

American Association of Retired Persons

Learn how to become a member of the AARP and access information on a broad range of topics from financial planning to life transitions to guidance on health, wellness, and political advocacy.

American Geriatrics Society

This site has health information on programs the AGS implements and advocates for to ensure quality patient-centered care for older adults.

American Society on Aging

Learn how to sign up for educational conferences and seminars directed towards health professionals and others working with older adults. You can also search for information on age-related issues on this site.

Center for Disease Control

This site has a wide variety of information about healthy aging in older adults, ranging from mental health to chronic disease management to caregiver preparedness.

National Center for Injury Prevention and Control

Find how the nation's leading authority on violence and injury prevention strives to keep people safe, healthy and productive as they age.

National Center on Senior Transportation

Click here to find out how this national organization strives to increase transportation options for older adults and enhance their ability to live more independently within their communities throughout the United States.

National Council on Aging

Learn how this national organization serves as a voice for older adults in America and how they bring together other organizations and businesses to help foster solutions that improve the quality of life for older adults.

National Institute on Aging

Explore and learn about the latest NIA findings in aging research.

National Institute of Health

Learn more the National Institute of Health, which is largest source of funding in medical research in the world and their latest updates on biomedical research that serves to improve health and save lives.

National Resource Center on Supportive Housing and Home Modification

Learn how this non-profit organization promotes "aging in place" and independent living for persons of all ages and abilities.

INTERNATIONAL

World Health Organization (WHO)

Discover current information on diseases and illnesses prevention that affects populations, including older

APPENDIX A.6
News & Events Content

NEWS & EVENTS

Welcome to News & Events!

No current updates at this time.

APPENDIX B.1

Welcome Homepage Screenshot

RESOURCES FOR HEALTHY AGING

RESEARCH REVIEWS ON HEALTHY AGING

ORGANIZATIONS PROMOTING HEALTHY AGING

DOMINICAN UNIVERSITY OF CA PROGRAMS

TIPS FOR HEALTHY AGING

NEWS & EVENTS

You are here: [Home](#) / [Academics](#) / [School of Health and Natural Sciences](#) / [Department of Occupational Therapy](#) / [Resources for Healthy Aging](#)

WELCOME TO THE HEALTHY AGING WEBSITE!

The fastest growing age group in the United States is older adults. Currently, there are about 4.2 million people over the age of 65 in California. This website provides healthy aging resources and ideas for use by older adults, their families, health professionals, and the general public. It was designed by occupational therapy graduate students in partial fulfillment of requirements for their Master of Science degree. The information provided is occupation-centered and evidence-based, and can help users learning how improve their quality of life as they age.



LEARN MORE ABOUT HEALTHY AGING WITH THE TOPICS BELOW!

- [Tips for Healthy Aging](#)
- [Dominican Resources for Healthy Aging](#)
- [Research Reviews on Healthy Aging](#)
- [Organizations Promoting Healthy Aging](#)
- [News & Events](#)

APPENDIX B.2

Tips for Healthy Aging Screenshot

RESOURCES FOR HEALTHY AGING

RESEARCH REVIEWS ON HEALTHY AGING

ORGANIZATIONS PROMOTING HEALTHY AGING

DOMINICAN UNIVERSITY OF CA PROGRAMS

TIPS FOR HEALTHY AGING

NEWS & EVENTS

You are here: [Home](#) / [Academics](#) / [School of Health and Natural Sciences](#) / [Department of Occupational Therapy](#) / [Resources for Healthy Aging](#) / [Tips for Healthy Aging](#)

TIPS FOR HEALTHY AGING



WELCOME TO TIPS FOR HEALTHY AGING!

The content in this section is categorized using the Six Dimensions of Wellness Model: occupational, physical, social, intellectual, spiritual and emotional. This section provides ideas for ways to improve your health and well being as an older adult. This information was obtained from evidence-based research articles and reputable websites. Regardless of your health and wellness needs, this section can help you age well.

DIMENSIONS OF WELLNESS



OCCUPATIONAL WELLNESS
PHYSICAL WELLNESS
SOCIAL WELLNESS
INTELLECTUAL WELLNESS
SPIRITUAL WELLNESS
EMOTIONAL WELLNESS

APPENDIX B.3

Dominican Resources for Healthy Aging Screenshot

RESOURCES FOR HEALTHY AGING

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DOMINICAN UNIVERSITY OF CA PROGRAMS



HEALTHY AGING THROUGH DOMINICAN UNIVERSITY CAMPUS RESOURCES!

This section provides an assortment of resources that can be found at Dominican University's beautiful campus that promotes healthy aging across all dimensions of wellness. Feel free to browse the list of organizations, programs, and facilities below and discover what interests you!

OCCUPATIONAL WELLNESS

Healthy Seniors Program - Department of Occupational Therapy

Healthy Seniors is a community-based program offered by the occupational therapy department to adults ages 60 and over in the Marin County area. The program is offered every fall and spring semester for eight weeks, once weekly for one to two hours. Under the guidance and supervision of faculty, students work with participants to complete a functional assessment and then develop a plan to help keep you healthy and living independently. Interventions are individualized and may include range of motion, strength, home safety tips, wellness education and fall prevention. Social and leisure activities are also addressed to help you achieve a balanced life. Promoting healthy aging and community living is the major goal of the program. This program helps promote and restore occupational wellness in all aspects of your life. To enroll or for more information, email: healthyseniors@dominican.edu.

APPENDIX B.4

Research Reviews on Healthy Aging Screenshot

RESOURCES FOR HEALTHY AGING

RESEARCH REVIEWS ON HEALTHY AGING

ORGANIZATIONS PROMOTING HEALTHY AGING

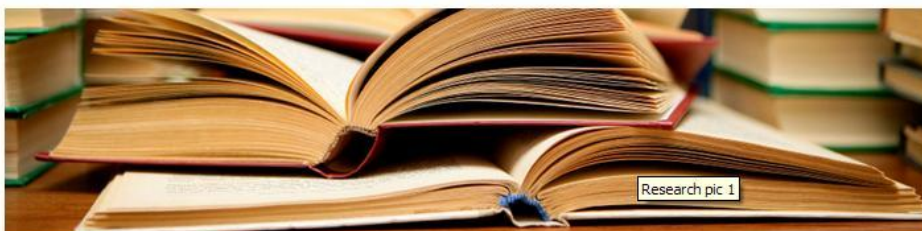
DOMINICAN UNIVERSITY OF CA PROGRAMS

TIPS FOR HEALTHY AGING

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RESEARCH REVIEWS ON HEALTHY AGING



WELCOME TO THE RESEARCH REVIEW ARCHIVE!

This section provides reviews of evidence-based research promoting health and wellbeing in older adults. The information has been reviewed by health professions students, and is from established peer-reviewed academic journals. Having accurate information can help you make informed decisions about healthy aging. Reviews in this section are categorized by the six dimensions of wellness: occupational, physical, social, intellectual, spiritual and emotional wellness. The topics range from fall prevention and Tai Chi to the health benefits of volunteering. If you are interested in reading the full version of the articles mentioned in this section, please visit the [Dominican University Alemany Library](#).

OCCUPATIONAL WELLNESS

Modifying your home decreases falling

Key Finding: Older adults can help prevent falls by exercising and modifying their homes.

This study reviewed 33 intervention-based research studies that focused on factors that prevent falls in the home. Occupational therapists assisted in home assessments in each of the studies. Occupational therapists provided home modification suggestions to older adults to prevent potential falls from occurring. The participants were taught fall prevention techniques which heightened their confidence in their own functional mobility. New exercise techniques to help prevent falls were also taught. The best results for fall prevention were in the areas of modifying the home environment and keeping physically fit. Some ways to prevent falls are taking out floor rugs, using non-slip rubber mats in the bathtub, and having brighter lighting in hard to see areas.

Chase, C. A., Mann, K., Wasek, S., & Arbesman, M. (2012). Systematic review of the effect of home modification and fall prevention programs on falls and the performance of community-dwelling older adults. *American Journal of Occupational Therapy*, 66, 284–291. <http://dx.doi.org/10.5014/ajot.2012.005017>

APPENDIX B.5

Organizations Promoting Healthy Aging Screenshot

RESOURCES FOR HEALTHY AGING

RESEARCH REVIEWS ON HEALTHY AGING

ORGANIZATIONS PROMOTING HEALTHY AGING

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TIPS FOR HEALTHY AGING

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ORGANIZATIONS PROMOTING HEALTHY AGING



Here is a list of organizations that share our goals of improving quality of life and promoting healthy aging for all.

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Marguerita C. Johnson Senior Center

The center provides a variety of programs, referral services, and activities for senior citizens 60 and older. Activities include monthly shopping trips, grocery bingo, arts & crafts, tai-chi, movie day, and monthly luncheons with guest speakers.

Marin County Commission on Aging

Learn more about the contribution this commission provides through information and advocacy for services that enable older adults to live with dignity.

Marin County Division on Aging

APPENDIX B.6

News & Events Screenshot

RESOURCES FOR HEALTHY AGING

RESEARCH REVIEWS ON HEALTHY AGING

ORGANIZATIONS PROMOTING HEALTHY AGING

DOMINICAN UNIVERSITY OF CA PROGRAMS

TIPS FOR HEALTHY AGING

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NEWS & EVENTS



WELCOME TO NEWS & EVENTS!

No current updates at this time.

[Tips for Healthy Aging](#) | [Dominican Resources for Healthy Aging](#) | [Research Reviews on Healthy Aging](#) | [Organizations Promoting Healthy Aging](#) | [News & Events](#)

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