



5-2013

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TREATING DEPRESSION IN THE GERIATRIC POPULATION:

A GUIDE FOR PATIENTS AND FAMILIES

by

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Bachelor of Science in Nursing, Minnesota State University, Mankato

An Independent Study

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Master of Science

Grand Forks, ND

May

2013

This independent study, submitted by Rebecca Schaefer in partial fulfillment of the requirements for the Degree of Master of Science from the University of North Dakota, has been read by the faculty advisor under whom the work has been done and is hereby approved.

Karen Semmens

Faculty Advisor

Abstract

Nearly 6.5 million elderly Americans suffer with depression. Untreated depression is a grave public health concern because of the associated increase in disability, morbidity and mortality, and health care costs. A thorough review of literature identifies five effective treatments for geriatric depression: exercise, psychotherapy, pharmacotherapy, electroconvulsive therapy (ECT), and transcranial magnetic stimulation (TMS). A brochure was created to educate patients and families regarding the recognition and treatment options for depressed elders. A survey analyzing the effectiveness of the brochure indicates that 100% of responders found the information provided in the brochure useful and that 88% would likely act on the information that was provided. Improved knowledge on this important subject can promote prompt recognition and implementation of effective treatment, therefore reducing the public health burden. The results of this project implicate ideas for further research, such as, how elders can be motivated to seek treatment for depression and how culture and health beliefs influence patient's choice of treatment options.

Treating Depression in the Geriatric Population:

A Guide for Patients and Families

Introduction

Depression is not a normal part of aging; it is a true and treatable medical condition. Depression is the most common psychiatric disorder in the elderly (Stern, 1991), affecting 1 in 10 Americans over the age of 65 (Magnusen, n.d.). As many as 10% - 20% of community members greater than 65 years of age suffer with this illness (Ellision, n.d.; Unützer, 2007). In settings such as long term care, the prevalence of depression reaches nearly 50% (Park, M. & Unützer, J., 2011). Of the 6.5 million elderly Americans with depression, less than 10% of them will receive treatment (Magnusen, n.d.).

Patients, families, and our care systems are burdened by this public health concern, which is treatable. This issue has never been more timely because our geriatric population continues to rapidly grow. In 2010, persons aged 65 years and older comprised 13% of the total population in the United States. By 2030, 72 million, or 20% of the population will be persons aged 65 years and older (Federal Interagency Forum on Aging-Related Statistics, 2012). The crippling effect of depression on the elderly has been well documented. Depressed elders have higher rates of disability, are more likely to engage in poor health behaviors, and have an increased incidence of suicide. Older adults have the highest rates of completed suicides of any age group, accounting for 14%-25% of suicide deaths in the United States. This is particularly pronounced among white men over the age of 80, who are six times more likely to commit suicide than the general population (Conwell & Thompson, 2008; Geriatric Mental Health Foundation, n.d.). In addition to high rates of morbidity and mortality, depressed elders incur 50% higher health care expenses because they are more likely to visit the Emergency Department, have more frequent

hospitalizations and doctor visits, and take more medications than adults without depression (\$22,960 vs. \$11,956) (Aldrich, n.d.) Because such a large portion of our society is impacted and valuable money and resources are exhausted managing untoward outcomes of depression, this is a relevant topic for consideration.

Purpose

There is no absolute definition for the term “geriatric population.” There are several factors to consider when forming an accurate definition: chronological age, one’s participation in the workforce, the presence or absence of physical and mental functioning, and one’s cultural influences. Because there are so many variables to consider, the definition is highly arbitrary. For this project, the definition of “geriatric population” will be those persons 65 years of age and older. Just like the definition of geriatric is complex, so is coordinating efficacious care for geriatric patients. As our elderly population ages, they should live a life full of health, prosperity, and happiness; not mental and physical anguish exacerbated by a treatable illness. To promote this end, care givers, families, and patients must have knowledge regarding the recognition of depression and the current pharmacologic and nonpharmacologic therapies that are successful in treating geriatric depression.

This project involves an in-depth review of literature regarding the treatments for geriatric depression. Based on the most current, reputable evidence, an educational brochure for patients and families was developed (Appendix). The content of the brochure includes general information about the disease, signs and symptoms of depression in the elderly population, and available treatment options. Proper recognition and treatment of depression can improve

patient's quality of life, reduce morbidity and mortality associated with depression, and decrease the amount of money spent on management of untreated illness.

Significance

The elderly population is at an increased risk for the development of depression because they often experience major life changes such as retirement, financial struggles, loss of friends and loved ones, loss of sensory and physical capabilities, and they have a higher incidence of chronic disease and illness (Geriatric Mental Health Foundation, n.d.; Park, M. & Unützer, J., 2011). Confirmed risk factors for the development of depression include: unmarried status, living alone, lack of social support, negative life events including bereavement, and lower socioeconomic status. Positive family history of depression, female gender, and substance abuse are additional risk factors. The depression experienced by this population can be chronic, recurrent, or new-onset. Research suggests that the prevalence of depression increases for persons aged 65 years and older (Ellsion, Kyomen, & Harper, 2012).

Undiagnosed and untreated depression in our elderly population is a significant public health problem. When left unrecognized, depression can lead to poor quality of life, increased social and physical disability, poor adherence to treatment, worsening of chronic medical problems, and increased morbidity and mortality from suicide and premature death (Unützer, 2007). With proper treatment, greater than 80% of individuals will have resolution of symptoms and return to their prior level of functioning (Geriatric Mental Health Foundation, n.d.). Symptoms of elder depression can present differently compared to younger adults. Depressed elders are more likely to report cognitive and somatic concerns that are mistakenly attributed to existing medical conditions or medications (Ellsion, Kyomen, & Harper, 2012). In addition, the

symptoms of late-life depression are often attributed to normal aging, grief, physical illness, or dementia, and because of the often insidious presentation, important opportunities to initiate treatment are missed (Park, M. & Unützer, J., 2011). When depression is correctly identified and treated, quality of life is enhanced through improvements in emotional, social, and physical functioning. It has also been associated with better self-care for chronic medical conditions and reduced mortality (Unützer, 2007).

Theoretical Framework

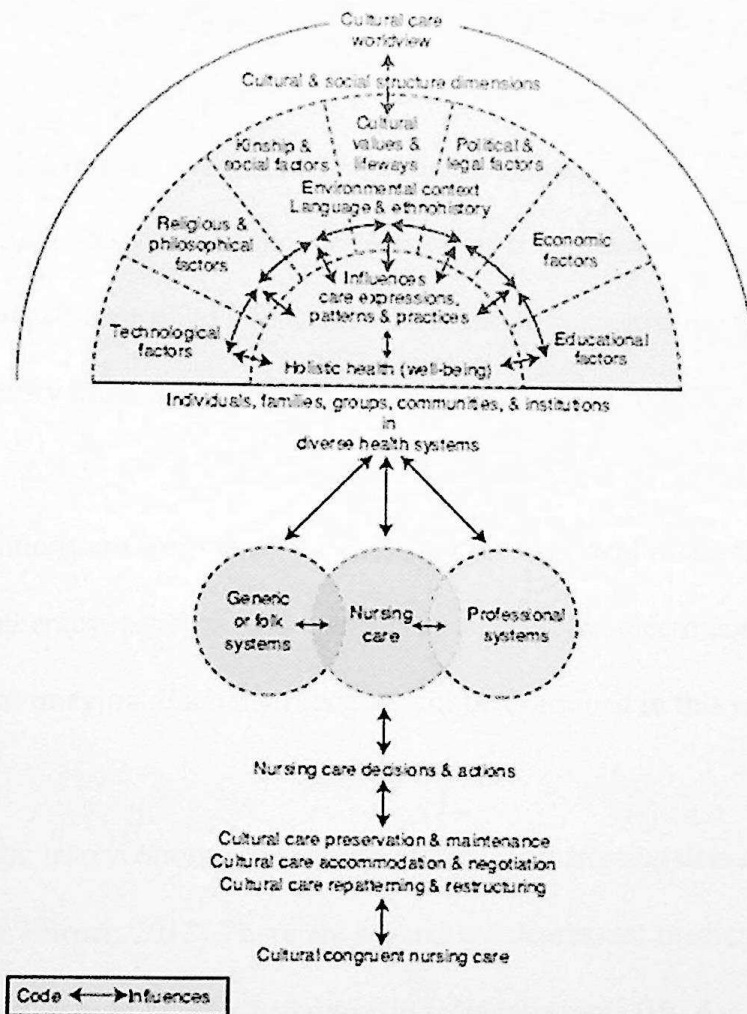
Among people have a culture that embraces traditional gender roles, regards the shaman as a healing practitioner who acts as an intermediary between the spirit and material world, and believe that after death the soul reincarnates as one of many forms such as humans, plants, rocks and ghosts. The culture of the Southern United States is considered socially conservative, steadfastly religious, and is known for their deep-fried home-cooking. Just like each race and region celebrates their own unique culture, each elderly individual possesses a culture of their own. Impacted by past experiences, values, beliefs, socialization, politics, education, economics, and environmental factors, an individual's culture influences their approach and receipt of health care. Cultural competency has long-been regarded as a necessity for quality health care delivery, and understanding and respecting the culture of the elderly is a key component to providing the enriching care that improves people's quality of life. Madeline Leininger's Theory of Culture Care Diversity and Universality (TCCDU) recognizes the importance of preserving one's cultural values to promote the patient's optimal health, and serves as the framework for this project.

Dr. Madeline Leininger is regarded as the founder of the transcultural nursing movement in education research and practice. In 1948, she received her diploma in nursing from St. Anthony's School of Nursing in Denver, Colorado. In 1950, she earned a B.S. from St. Scholastica (Benedictine College) in Atchison, Kansas, and in 1954 earned an M.S. in psychiatric and mental health nursing from the Catholic University of America in Washington, D.C. While practicing as a nurse, she experienced a culture shock when she realized that her practical skills and knowledge were inadequate to achieve desired health outcomes for a group of culturally diverse patients. This awareness led her to seek further knowledge about the core values, beliefs, and needs that motivate and influence an individual's approach to health practices. In 1965, she was awarded a Ph.D. in cultural and social anthropology from the University of Washington, Seattle. Utilizing both her anthropological and nursing perspectives, she asserted that care and caring were basic and essential human needs for human growth, development, and survival. She declared that what humans need is human caring to survive from birth to old age, when ill or well. A critical component to this care is that it is specific and appropriate to cultures. These components are central to her TCCDU (Sitzman, & Eichelberger, 2013).

Leininger's TCCDU can be applied to treating elderly patients suffering with depression. It provides a holistic approach to care that is sensitive to the unique perspective of the individual being treated. Culture is universal, but diverse. The Sunrise Model (Figure 1) was developed by Leininger to provide a comprehensive, conceptual picture of the major factors influencing her theory. The model is shaped like the rising sun. The model depicts how one's worldview, culture, and social background influence each other to form one's perspective on health and reception of health care. Individual experiences with technology, religion, philosophy, values,

politics, economy, and education will impact health. Delivery of quality health care occurs when the practitioner successfully bridges medical interventions with individual patient beliefs toward the outcome of optimal health for the patient. When striving to support and treat geriatric patients with depression, the practitioner must be aware and sensitive to each individual's wishes and expectations in order to provide the best care possible and realize the best patient outcomes ("Leininger's Transcultural Theory", 2010).

Figure 1. Leininger's Sunrise Enabler



Source: Lippincott Williams & Wilkins, Instructor's Resource CD-ROM to Accompany *Psychiatric Nursing: Contemporary Practice*, Third Edition, by Mary Ann Boyd and Diane Schmeisguth, 2005

Process

The author's search was conducted using the University of North Dakota Harley E. French Library online services. PubMed database was utilized for the search. The following keywords were used: *depression* and *treatment*. The results were narrowed to include only articles published within the last ten years, articles written in English, and studies conducted on subjects aged 65 years of age and older, 742 results were returned. After reviewing article titles and abstracts, the results were further narrowed to exclude articles that did not analyze an active treatment for depression or included subjects younger than 65 years of age, 45 articles were identified. Five major interventions emerged as the respected, efficacious, and frequently used alternatives to treating geriatric depression: pharmacotherapy, psychotherapy, exercise, electroconvulsive therapy, and transcranial magnetic stimulation. Final selection of the articles was based on the type of study conducted, preference given to meta-analyses, systematic reviews, and randomized controlled trials, and with intent to represent the five major interventions previously identified. A total of 19 articles were examined for this paper.

Review of Literature

Five interventions are considered the mainstay for treatment of depression in the elderly. They are: pharmacotherapy, psychosocial interventions, exercise, electroconvulsive therapy, and transcranial magnetic imaging. Each intervention will be examined in this review of literature.

Pharmacotherapy

Pharmacologic interventions are safe and effective for treating depression in older adults (Ellsion, Kyomen, & Harper, 2012). There are several antidepressant medications available, representing several classes of agents: heterocyclic antidepressants (HCAs), monoamine oxidase inhibitors (MAOIs), selective serotonin reuptake inhibitors (SSRIs), serotonin norepinephrine

reuptake inhibitors (SNRIs), and serotonin antagonist/reuptake inhibitors (SARIs). Other pharmacologic agents used are: mirtazapine and bupropion (Bottino, C.M.C., Barcelos-Ferreira, R., & Ribeiz, S.R.I., 2012; Dunner, 2003; Ellsion, Kyomen, & Harper, 2012). The aforementioned antidepressant options will be analyzed further in the following paragraphs. When choosing which medication is best, various factors must be taken into consideration to prescribe the antidepressant that will be safe, well tolerated, and efficacious. The patient's presenting symptoms, comorbid medical conditions, potential for drug interactions, and side effect profile must be contemplated before choosing a medication (Bottino, C.M.C., Barcelos-Ferreira, R., & Ribeiz, S.R.I., 2012; Dunner, 2003; Ellsion, Kyomen, & Harper, 2012). Due to the changes in hepatic, renal, and gastrointestinal function of the aging person, pharmacokinetics of medications are altered in the elderly, leading to prolonged elimination of half-life, reduced clearance, and elevated drug plasma levels. Because of this, the elderly population is at increased risk for common antidepressant side effects such as sedation, anticholinergic effects, extrapyramidal effects, and orthostatic hypotension. Therefore, side effect profile is often a chief concern when choosing the appropriate medication (Bottino, C.M.C., Barcelos-Ferreira, R., & Ribeiz, S.R.I., 2012).

HCA, which include tricyclic antidepressants, are not regarded as the first pharmacological choice, due to their high side effect profile and cautions/contraindications, but may be an effective alternative in some situations. The side effects seen with HCAs are relative to the receptors that the medication acts on. For example, histamine-receptor effects can cause sedation and weight gain; alpha-adrenergic effects can cause blood pressure changes; and muscarinic effects can cause constipation, dry mouth, blurred vision, dizziness and tachycardia. Caution should be used for patients with a history of cardiac disease, prolonged QT interval,

bundle branch block, recent myocardial infarction, closed-angle glaucoma, or MAOI use. HCAs can be lethal in overdose. Secondary amines, specifically nortriptyline and desipramine, are considered a safer choice for elderly patients than tertiary amines, demonstrating less severe anticholinergic and orthostatic effects. HCAs are inexpensive, can be given once daily, and may be a good option for patients who are anorexic or have chronic pain (Dunner, 2003; Ellsion, Kyomen, & Harper, 2012).

MAOIs can be useful in patients who have not responded to other antidepressants, who have atypical depression, panic attacks, or social phobia. They are cautioned for use in the elderly because of the possibility of initiating a hypertensive crisis by ingesting tyramine rich foods or drug interactions. Tyramine containing foods include, but are not limited to: cheese, meats, produce, condiments, soy, and alcohol. Drug interactions will occur with medications that are metabolized by MAO which include, but are not limited to: sympathomimetics contained in decongestants, meperidine, dextromethorphan, and some antihypertensives. Since the diet is so complex and there is a high potential for drug interactions, formal education is suggested for the patient before beginning MAOI therapy (Dunner, 2003; Ellsion, Kyomen, & Harper, 2012).

SSRIs are regarded as the antidepressant of choice for elderly patients. They are considered as efficacious as HCAs and MAOIs but are documented to be safer and better tolerated. Because of their more restricted receptor activity, antihistamine, anticholinergic, and potentially serious cardiovascular side effects seen with HCAs are not experienced in patients taking SSRIs. Additionally, SSRIs are safe in overdose (Bottino, C.M.C., Barcelos-Ferreira, R., & Ribeiz, S.R.I., 2012; Dunner, 2003; Ellsion, Kyomen, & Harper, 2012). They are not without complications, however, and commonly observed side effects include: nausea, diarrhea, dizziness, libido reduction, and weight changes. Occasionally hyponatremia and increased risk of

gastrointestinal bleeding have been observed (Bottino, C.M.C., Barcelos-Ferreira, R., & Ribeiz, S.R.I., 2012). The efficacy of SSRIs for geriatric depression has been demonstrated in several recent studies. An eight week randomized controlled trial determined that escitalopram at a dose of 10 mg/day, compared to placebo, resulted in significant clinical improvement of the subjects; $P < 0.01$. Of the 20 patients receiving escitalopram, 100% of them exhibited improvement. Eleven (40.7%) of the subjects in the treatment group were deemed clinically cured, as evidenced by a >75% reduction on the Geriatric Depression Scale (GDS); six (22.2%) individuals manifested considerable improvement, as evidenced by a 51-75% reduction on the GDS; and three (11.1%) showed some improved, as evidenced by a 26-50% reduction on the GDS. Comparatively, the placebo group showed improvement in only four (16.7%) subjects, none of whom were deemed clinically cured. 22.2% of subjects in the treatment group experienced mild side effects (nausea, dry mouth, dizziness), which resolved spontaneously. No severe adverse reactions were observed (Chen, Huang, Thompson, & Zhao, 2011).

A second randomized controlled trial confirms the effectiveness of escitalopram. This study was a 16 week crossover study in which one group received escitalopram 10 mg/day for eight weeks followed by placebo during the second eight weeks and the other group received placebo for eight weeks followed by escitalopram 10 mg/day during the second eight weeks. Effectiveness was measured at each eight week interval using the Hamilton Rating Scale for Depression (HAM-D). While being treated with escitalopram, patients scores on the HAM-D were more likely to decrease by >50% (10 of 16 while on escitalopram compared to 2 of 16 while on placebo). They were also more likely to demonstrate remission (HAM-D score <7) (9 of 16 while on escitalopram compared to 1 of 16 on placebo). Treatment with escitalopram exhibited

clinically significant results when compared to placebo; $P = 0.011$ (Brody, Field, Roch-Levecq, Moutier, Edland, & Brown, 2011).

Citalopram, another SSRI medication, has shown to be clinically effective in treating geriatric depression. A six week, randomized, double-blind, placebo-controlled clinical trial determined that Hypericum extract STW 3-VI (St. John's Wort) (900 mg/day) and citalopram (20 mg/day) were effective in treating depression, compared to placebo. Singer, Schmidt, Hauke, and Stade (2011) studied the long-term response of these medications by evaluating subjects for relapse of depression. 19.5% of subjects were diagnosed with depression relapse following the initial clinical trial. Highest relapse rates were identified in patients that had been treated with citalopram (14 of 54). Patients treated with St. John's Wort showed low relapse rates (8 of 54). The duration of response to treatment was 1755 days for citalopram compared to 1817 days for St. John's Wort and 802 days for placebo. This study establishes that initial treatment needs to be followed by continuation of therapy and that maintenance therapy may be required to prevent relapse (Singer, Schmidt, Hauke, & Stade, 2011). In other studies, citalopram has proven effective for maintenance therapy of depression in the elderly (Wilson, Mottram, Ashworth, & Abou-Saleh, 2003).

In contrast, a randomized, double-blind, placebo-controlled study researching the effect of therapeutic doses of sertraline (50-150 mg/day) as long-term treatment for depression, determined that it does not provide significant protection against recurrence. The study consisted of an eight week treatment phase followed by a 16-20 week continuation phase where subjects were treated with sertraline prior to randomization into a double-blind, parallel placebo-controlled maintenance trial that lasted 100 weeks. Analysis showed no significant difference

between sertraline and placebo in prevention of recurrence; $P = 0.21$ (Wilson, Mottram, Ashworth, Abou-Saleh, 2003).

Studies have shown the efficacy of paroxetine for the treatment of acute and chronic depression in the elderly. A 12 week, double blind, randomized, controlled trial of 390 elderly patients indicated that paroxetine CR and paroxetine IR were effective and well tolerated. In the study, remission was achieved by 43% of paroxetine CR patients ($P = 0.009$), 44% of paroxetine IR patients ($P = 0.01$) compared to 26% of placebo patients. Analysis after two years were consistent that patients treated with both forms of paroxetine had less relapse or depressive symptoms than their placebo counterparts (Rapaport, Schneider, Dunner, Davies, & Pitts, 2003). Another study evaluating the efficacy of paroxetine in the treatment of late life depression concurs with the previous findings. A 10 week, double blind, randomized, controlled trial evaluated the effects of paroxetine CR 12.5 mg/day, paroxetine CR 25 mg/day, versus placebo. Although both doses of paroxetine were more effective than placebo, a significantly larger percentage of patients achieved remission with the larger dose (44%, $P = 0.008$) (Rapaport et al., 2009).

SNRIs are generally safe and well tolerated, but the evidence to support their indication for geriatric depression is lacking. The side effect profile is the same as SSRIs. Side effects are mild, often self-limiting, and have low potential for serious adverse events (Bottino, C.M.C., Barcelos-Ferreira, R., & Ribeiz, S.R.I., 2012; Ellsion, Kyomen, & Harper, 2012). Duloxetine has produced significantly greater results on the HAMD than placebo, as well as improving generalized and lumbar pain. Venlafaxine has shown to be effective in treating concomitant anxiety or neuropathic pain. It is also associated with hypertension, in a small number of elderly patients, with doses greater than 150 mg/day (Ellsion, Kyomen, & Harper, 2012).

The SARI Trazodone is limited in its use due to the side effects of sedation, orthostatic hypotension, and rare but serious priapism (Dunner, 2003; Ellsion, Kyomen, & Harper, 2012). Because of its sedative properties, it is used more frequently to treat insomnia. Trazadone's role for the primary treatment of depression has not been established through research (Dunner, 2003). Nefazodone, also an SARI, has been linked with rare cases of liver failure, and therefore is not recommended or studied in the elderly population (Ellsion, Kyomen, & Harper, 2012).

Mirtazapine, one of the most sedating antidepressants available, is more sedating at lower doses than higher doses (Dunner, 2003; Ellsion, Kyomen, & Harper, 2012). Another frequently observed side effect is increased appetite and weight gain (Bottino, C.M.C., Barcelos-Ferreira, R., & Ribeiz, S.R.I., 2012; Dunner, 2003; Ellsion, Kyomen, & Harper, 2012). Research trials with elderly subjects report that mirtazapine has the same effectiveness in treating depression as amitriptyline, trazodone, or paroxetine (Bottino, C.M.C., Barcelos-Ferreira, R., & Ribeiz, S.R.I., 2012; Ellsion, Kyomen, & Harper, 2012). Practitioners find mirtazapine to be helpful for patients experiencing anxiety, insomnia, and anorexia (Ellsion, Kyomen, & Harper, 2012).

Bupropion is the least sedating of the available antidepressants, has minimal effects on weight gain or sexual function, and has no anticholinergic side effects. It is cautioned for use in patients with a history of seizures or head trauma. It is a generally well tolerated medication, but is lacking in supportive clinical data gain (Bottino, C.M.C., Barcelos-Ferreira, R., & Ribeiz, S.R.I., 2012; Dunner, 2003; Ellsion, Kyomen, & Harper, 2012).

In regards to pharmacotherapy for treatment of geriatric depression, no one medication has shown superior efficacy over any other medication. The response of each medication can vary significantly from person to person. Therefore, a concerted effort to evaluate the side effect profile of the antidepressant medications, the presenting symptoms of depression, potential

medication interactions, and comorbid patient illnesses is necessary. SSRIs are generally accepted as the drug class of choice, and the bulk of the research reflects this. Doses should be started very low and titrated up slowly. The recommendation is to wait six weeks, for antidepressants to have their optimal effects, before making any changes in dosage or medication (Bottino, C.M.C., Barcelos-Ferreira, R., & Ribeiz, S.R.I., 2012).

Psychotherapy

Psychotherapy is an option for adjunct or monotherapy in the treatment of depression in elderly individuals, and is recommended by The National Institute for Health and Clinical Excellence, although there are few studies to support its efficacy (Dunner, 2003).

In the late 1970s and early 1980s, small trials examining the effects of psychological treatments for depression in late life demonstrated promising results. More recently, larger, controlled studies have been performed. Cuijpers, van Straten, and Smit (2006) conducted a comprehensive meta-analysis of randomized, controlled trials evaluating the effectiveness of psychological interventions for the treatment of elderly depression, 25 studies were included in their analysis. Seventeen studies evaluated psychological treatment compared to a control condition, such as: waiting lists, care-as-usual, placebo, and other control groups and 8 studies evaluated different types of psychotherapy compared to each other. Psychological interventions included: cognitive behavioral therapies (CBT), behavior therapies (BT), reminiscence and life-review therapies, interpersonal psychotherapy (IPT), and problem solving therapy (PST). The authors state that they found clear evidence to support that psychological treatments are effective in older adults with depression, although acknowledge that the quality of their studies were not optimal. For the study, effect size was calculated by subtracting the average score of the control group from the average score of the experimental group and dividing the result by the pooled

standard deviations of the experimental and control group. By this calculation, effect sizes of 0.56 to 1.2 demonstrated a large effect, effects sizes of 0.33 to 0.55 are moderate, and effect sizes of 0 to 0.32 are small. Sixteen studies comparing psychological treatment to controls (one study was excluded from the original 17 because it did not give sufficient data to calculate an effect size) demonstrate a calculated effect size of 0.72, which is considered a large effect. When comparing psychosocial interventions to antidepressant medication, no significant differences existed in the effect sizes between the two treatment types, suggesting that psychotherapy and pharmacotherapy have similar efficacy. Effect size of 0.50 was exhibited with combined psychotherapy and pharmacotherapy, suggesting moderate benefit of the combined treatment. When comparing different types of psychotherapy, no significant levels of difference were demonstrated, so it was not possible to report the efficacy of one versus another. This study lends support that psychotherapy may be useful in treating elderly depression, but larger, high-quality studies would need to be performed to validate this (Cuijpers, van Straten, & Smit, 2006).

A systematic review, conducted by Kiosses, Leon, & Arean (2011), finds results consistent with Cuijpers, van Straten, & Smit (2006). Of the six articles selected for their analysis, no interventions met the criteria of being "efficacious", three interventions were "probably efficacious, pending replication" (PST, CBT, Treatment Initiation and Participation Program(TIP)), and two interventions provided "inconclusive" results (IPT, Supportive Therapy (ST)). An intervention was deemed "efficacious" if there were at least two randomized controlled trials, conducted by independent investigators, showing that the intervention was superior to a credible comparison group. An intervention was "probably efficacious, pending replication" if there was at least one randomized controlled trial showing that the intervention was superior to a credible comparison group. "Inconclusive" studies did not fit into the two

previous categories, for example, if only one randomized controlled trial had been conducted with negative results. PST, an intervention in which participants brainstorm skills for dealing with client specific life problems and crises, has shown encouraging outcomes for the treatment of depression in the elderly. A 12 week, randomized controlled trial evaluated PST versus ST in 221 elderly participants. Those enrolled in PST had a significantly greater reduction in depression than their ST counterparts. The results of this study coincide with other studies that did not meet the criteria for inclusion in this review. CBT is a treatment that has also shown promise in treating depressed elders. The aim of CBT is to help a person learn to recognize negative patterns of thought, evaluate their validity, and replace them with healthier ways of thinking. A 12 week, randomized controlled trial compared the effects of CBT plus desipramine (a TCA), CBT alone, and desipramine alone. Patients in both the CBT plus desipramine and CBT alone group demonstrated a significant reduction in depression compared to desipramine alone. The third intervention to demonstrate promise for depressive treatment is TIP. The TIP intervention is used concurrently with pharmacotherapeutic interventions to identify barriers to medication adherence and utilizes cognitive behavior techniques to improve compliance. At the 12 week follow up of a randomized controlled trial, 82% of TIPs participants adhered to the treatment regimen compared to 43% of participants in the care as usual group. The outcomes of the study done by Kiosses, Leon, & Arean (2011) were consistent with other reviews and meta analyses. The review identified 18 high quality articles, but only six were chosen for final analysis based on the statistical criteria of >30 participants per condition and intent-to-treat analyses. Larger, more rigorous studies need to be conducted to justify the support to these psychotherapeutic interventions (Kiosses, Leon, & Arean, 2011).

Behavioral therapy (BT), a psychotherapeutic treatment option, demonstrates similar effectiveness to other psychotherapeutic therapies, but may pose other valuable benefits. Behavioral therapy is focused on helping an individual understand how changing their behavior can lead to changes in how they are feeling. The goal of BT is usually focused on increasing the person's engagement in positive or socially reinforcing activities. BT is a psychotherapeutic intervention that proposes many benefits. Compared to pharmacotherapy, it is considered a safe alternative because there is no threat of medication side effects or untoward drug interactions. It is a simple intervention that requires little time or professional training and therefore, may be a cost-effective option. In addition, because of its simple nature, it may be beneficial for elders or those with low cognitive functioning, who find in-depth interventions too complicated. A systematic review comparing the effects of BT to other psychotherapeutic interventions determined that there was no significant difference in the effects of alternate therapies. A total of four randomized controlled trials were included in the meta-analysis, with BT showing comparable effectiveness to a waiting list control, CBT, and psychodynamic therapy. Effects of therapies were determined using patient self-reports. In agreement with the two previously discussed studies, it is recommended that higher quality studies with larger sample sizes be conducted to lend support to the evidence found in this study (Samad, Brealey, & Gilbody, 2011).

Despite the lack of quality data, several studies indicate that psychotherapy plays an important and integral role in the treatment of depression. It may be a better option for elders with minor to moderate or situational depression. When striving to provide holistic and personalized care, psychotherapy should be included in the delivery. There is no compelling evidence to choose one psychotherapeutic option over another, and several options are

considered equally effective. More rigorous studies with larger sample sizes need to be conducted, but the evidence thus far indicates that psychotherapy is a safe, cost-effective therapy, alone or in combination with pharmacotherapy (Cuijpers, van Straten, & Smit, 2006; Dunner, 2003; Kiosses, Leon, & Areal, 2011; Samad, Brealey, & Gilbody, 2011).

Exercise

In the early 1980s, researchers began exploring the effect that physical activity has on depression. Exercise has consistently been associated with improved well-being, elevated mood, greater physical health, and decreased anxiety. An extensive review of literature, conducted by Palmer (2005) has linked exercise with reduction in the severity of depressive symptoms, and it is considered a viable alternative or adjunct therapy to depression treatment.

A systematic review and meta-analysis was conducted by Bridle, Spanjers, Patel, Atherton, and Lamb (2012) to determine the effect that exercise had on depression severity among older individuals suffering with depression. Trials of any exercise intervention compared to a control were considered for inclusion in the study. A total of nine randomized controlled trials were included. All nine studies indicated that depression severity among participants in the exercise treatment group was lower compared to those participating in the control group. Four of the studies were statistically significant. The authors purport that the pooled effect of exercise on depression severity observed in this review (standard mean deviation (SMD) = -0.34) is comparable with the range of effects estimated for different classes of antidepressant medication and psychotherapy. At the group level, an SMD of -0.34 translates to 63%; meaning that 63% of participants in the treatment group had lower severity of depression than the average control participant. At the individual level, this indicates that there was approximately a 20% reduction

of depressive symptoms in the physical activity treatment groups (Bridle, Spanjers, Patel, Atherton, & Lamb, 2012).

A multicenter, randomized controlled trial involving 2322 patients at 82 medical centers determined that aerobic exercise training, compared to usual care, offers a modest reduction in depressive symptoms. Subjects included in the study had a Beck Depression Inventory II (BDI-II) score >14 . The BDI-II is a 21 question survey with each answer scored 0 to 3. The cumulative score can range from 0 to 63; the higher the score, the greater the severity of depression. The treatment group participated in aerobic exercise with a goal of 90 min/week for months one to three followed by home exercise with a goal of >120 min/week for months four to 12. At the three month follow up BDI-II mean score for the treatment group was 8.95 compared to 9.7 for the control group. At the 12 month follow up BDI-II mean score for the treatment group was 8.86 compared to 9.54 for the control group. An interesting finding is that volume of exercise (in minutes) was inversely related to depressive symptoms, with no greater benefit observed at >90 min/week of exercise. Also, patients who reported greater adherence to the exercise program achieved a larger reduction in depressive symptoms (Blumenthal et al., 2012).

Wheelchair biking is a novel exercise that has demonstrated efficacy in treating depressed adults with and without cognitive barriers. The unique physical activity has been accepted as an evidence-based practice guideline. The Duet™ wheelchair bicycle is a modified tandem bicycle that can be used by a majority of nursing home residents. It has a special orthopedic design, is stable, and adjustable. Three studies, a pilot study and two replicated studies, demonstrated statistically significant improvements in depression for the experimental groups compared to the control groups (Fitzsimmons & Schoenfelder, 2011).

It is well documented that regular physical activity has numerous physical and psychological benefits (Blumenthal et al., 2012; Bridle, Spanjers, Patel, Atherton, & Lamb, 2012; Palmer, 2005). Not only has exercise been determined to improve depressive symptoms, it has been found to prevent depression and delay disability that follows inactivity. Currently, only 30% of elderly individuals over 65 years of age and 12% over 75 years of age engage in the recommended levels of physical activity (Palmer, 2005). Exercise can be a safe, cost-effective, treatment or adjunct treatment in the management of geriatric depression.

Electroconvulsive Therapy (ECT)

There is research that lends support for the efficacy and safety of ECT for the treatment of depression, and the documented response rate is >70% (Ellsion, Kyomen, & Harper, 2012). ECT is a therapy that works by passing electrical current through the brain to induce a seizure. Four systematic reviews of randomized and non-randomized studies in elderly depressed persons support the overall effectiveness of ECT. The four reviews included a total of 121 studies. There was no statistically significant evidence that suggests ECT therapy is unsafe for elders. Cognitive impairments that may surface are transient, and brain imaging one year after therapy detected no perfusion problems. Two more recent randomized controlled trials indicate that age positively correlates with a favorable response to ECT. In other words, the more elderly a person is the greater benefit they will receive from ECT (Thayer, 2007).

ECT is believed to pose less serious cardiovascular risks than traditional antidepressant therapy, and therefore may be a more prudent choice for patients with cardiac risk factors, although it is contraindicated for patients with uncontrolled hypertension or recent myocardial infarction. Compared to antidepressant treatment, ECT also shows more effectiveness in treating melancholic and psychotic features of depression, which are features seen more frequently in

depressed elders. In addition, the positive effects of ECT are realized immediately, compared to efficacy of antidepressant medications taking as long as 12 weeks to become therapeutic (Ellsion, Kyomen, & Harper, 2012; Tharyan, 2007).

There is evidence of risk factors that predict a poorer response to ECT. Individuals that have failed to respond to treatment of depression with one or more trials of antidepressant medication, between 29-46% of patients, may be less likely to respond to ECT. Patients who have been resistant to antidepressant medication and those with greater severity and length of depression prior to initiation of ECT are more likely to have a relapse of depression after completion of therapy. Trials suggest that patients with a greater amount of subcortical gray matter, a common finding in psychological illness, may respond more poorly to ECT (Tharyan, 2007).

As previously mentioned, studies have not revealed evidence for the support of ECT in depressed elders that is statistically significant. In fact, there are no high quality, randomized controlled trials that exist to support ECT. But the argument in favor of ECT is bolstered by the fact that there is also no evidence of the inefficiency or lack of safety of the treatment. The subjective effects of ECT are very in favor of the treatment and several clinicians attest to the benefit of the therapy. Until a superior method for the treatment of depressed elders is realized, ECT remains a viable treatment option, especially for individuals with treatment resistant depression.

Transcranial Magnetic Stimulation (TMS)

The newest option for treating depression, TMS, was approved by the FDA in 2008 (Bottino, C.M.C., Barcelos-Ferreira, R., & Ribeiz, S.R.I., 2012). A noninvasive, high frequency, repetitive pulse is delivered to the brain that alters regional activity by creating action potentials

(Gershon, Dannon, & Grunhaus, 2003). This therapy has not demonstrated any cognitive or cardiac side effects and may be better tolerated than ECT (Ellsion, Kyomen, & Harper, 2012).

Januel et al. (2004) studied the effect of TMS delivered over the left dorso-lateral-prefrontal cortex in three elderly men with chronic depression, presenting with a new depressive episode. There was a significant decrease in the HAMD scores from initiation of therapy (23.67) to completion of therapy (7.33). No cognitive or physical side effects were incurred (Januel et al., 2004).

Another study found that 5 of eleven subjects responded favorably to TMS, evidenced by a statistically significant improvement in HAMD scores. Another controlled trial observed response rates of 39.4% in the TMS treatment group compared to 6.9% in the control group. In contrast, two small controlled studies were unsuccessful in finding significant results for TMS (Bottino, C.M.C., Barcelos-Ferreira, R., & Ribeiz, S.R.I., 2012). In regards to age, another study found older patients less responsive to TMS. Yet another found a correlation between age and the number of treatments required to achieve a positive clinical response (Gershon, Dannon, & Grunhaus, 2003).

TMS is a relatively new therapy, and researchers are still learning how it can be used most effectively. The evidence presented here demonstrates the need for more rigorous research to support the use of TMS therapy in elders.

Discussion

The main objective of the brochure was to educate patients and families on the recognition and treatment of geriatric depression. The brochure successfully accomplished this goal. To determine the effectiveness of the project a health talk was given at an adult day care

facility and the audience was asked to complete a survey that analyzed the ability of the brochure to meet its chief objectives.

Thirteen elderly individuals attended the health talk at an adult day care facility in a large metro area. There were eight females and five males with ages ranging from 55 years to 88 years. The participants were asked to complete a short survey after the talk (Figure 2).

Figure 2. Survey

Evaluation of Brochure: "Successful Aging"	
1. Is the content easily understood?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. What do you think is the main message of the brochure?	
3. Do you find the information useful?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If you answered NO to question 3, please explain why.	
4. How likely are you to act on the information provided?	<input type="checkbox"/> Very likely <input type="checkbox"/> Somewhat likely <input type="checkbox"/> Not very likely

Nine surveys were completed; 100% of responders affirmed that the content of the brochure was easily understood. Six participants were able to accurately report the main message of the brochure, while three persons did not respond to that question. One hundred percent of responders confirmed that the information was useful. Five persons reported being "very likely"

to use the information, three persons reported being "somewhat likely" to use the information, and one person reported being "not very likely" to use the information.

The results of the survey analysis include several limitations, but are encouraging to suggest that with proper education, depressed elders may be motivated to pursue help from their health care provider. This analysis does not take into account the cognitive abilities and limitations of the patient population that was surveyed. Specifically, even though all responders indicated the information was easily understood, three persons did not identify the main message of the brochure. This could be because they did not understand the content or because cognitive or physical disabilities inhibited their ability to write. The sample was also small, so may not be representative of a larger group of elders. Also, the fact that the participants were enrolled in an adult day care program may suggest that this population of people already participate in activities that provide a buffer to the development of depressed mood. The survey did not inquire about the culture and health beliefs of the participants, which as previously discussed, is a necessary component to effective delivery of holistic care.

Further research is implicated following the findings of this project. This project demonstrates that an educational brochure can provide patients with knowledge regarding the recognition and treatment options for geriatric depression. Now that we know this, further research to investigate how persons can be motivated to pursue help would be useful. Specifically, what the barriers are that hinder patients from seeking help and how those barriers can be eliminated. Another implication for further research would be to investigate how culture and health beliefs impact a person's likelihood to seek treatment for depression. Specifically, if there is a social stigma that would hinder motivation or if one method of treatment would be preferable over another method.

Summary

Geriatric depression is a major public health burden that results in poor quality of life, greater social and physical disability, increased morbidity and mortality, and rising health care costs. As the population of elderly Americans continues to grow, so does the untoward impact that this disease has on our society. Millions of elders suffer with depression, while only 10% receive the proper treatment. Depression remains underdiagnosed and undertreated because depressive symptoms are mistakenly attributed to physical aging, grief, physical illness, or dementia. However, with prompt recognition and appropriate treatment, 80% of individuals will live a life full of health, happiness, and prosperity, free from the mental anguish of depression.

A thorough review of literature identifies five effective treatments for depressed elders: exercise, psychotherapy, pharmacotherapy, electroconvulsive therapy, and transcranial magnetic stimulation. No treatment has been proven to be the most effective, although the most frequently employed treatment is pharmacotherapy. Choice of treatment is often contingent on the comorbid medical disorders, concomitant medications, target symptoms, and side effect profile of the treatment. Often, patients benefit from a combination of treatments.

This project demonstrates that a brochure can be effective in educating patients and families regarding recognition and treatment options for geriatric depression. Further studies are needed to evaluate how to motivate depressed elders to seek care and how culture and health beliefs impact motivation to seek help for depression and impact treatment choice.

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Appendix

Depression is NOT a normal part of aging

Still, 6.5 million elderly Americans suffer with depression. Depression is often unrecognized in our elderly population because symptoms are mistakenly attributed to physical aging, grief, physical illness, or dementia.

6.5

Here are some clues that can indicate someone may be depressed: sadness, fatigue, social withdrawal, sleep disturbances, anxiety, memory problems, unusual pain, slow movement and speech, irritability, and neglecting personal care.

Untreated depression is associated with poorer quality of life, greater social and physical disability, and increased morbidity and mortality. When properly treated 80% of individuals will live a life full of health, happiness, and prosperity, free from the mental anguish of depression.



Successful Aging

recognition and treatment for depressed elders

If you or a love one is depressed, talk to your healthcare provider. There is a treatment that is right for you. Look forward to a future full of peace, happiness, and well-being.

If you are suicidal call for help right away

1-800-273-TALK (8255)

Treatment Options

There are many effective options for the treatment of depression, depending on the symptoms and severity of the illness. You and your health care provider can choose the treatment, or combination of treatments, that are right for you.

Exercise

- For prevention or treatment of mild to moderate depression
- Used alone or in combination with other treatments
- Examples: walking, biking, swimming, yoga, tai chi
- Improves psychological and physical well-being
- Safe and cost effective



Psychotherapy

- For treatment of mild to moderate depression; also recommended for situational depression
- Used alone or in combination with other treatments
- Several different types of psychotherapy that employ techniques to help an individual gain coping skills, handle difficult situations, and improve mood
- Safe and cost effective



Pharmacotherapy

- Most frequently used treatment option
- For treatment of mild, moderate, or severe depression
- Used alone or in combination with other treatments
- Several antidepressant medications available
- Potential for mild to rare, life-threatening side effects
- Affordable options available



Electroconvulsive Therapy (ECT)

- For treatment of severe or treatment resistant depression
- May be a good treatment option for patients with cardiovascular risks
- Used alone or in combination with other treatments
- Works by passing electrical current through the brain to induce a seizure
- Rare cognitive side effects have been documented, but resolve on their own
- Positive effects of ECT can be realized after just one treatment

Transcranial Magnetic Stimulation (TMS)

- Newest options for treating depression, approved by the FDA in 2008
- For treatment of severe or treatment resistant depression
- Used alone or in combination with other treatments
- Noninvasive procedure that uses magnetic fields to stimulate nerve cells in the region of the brain involved in mood control and depression
- No documented side effects

Room: CRSC 103
Location: Thesis/Independent
Cabinet

Treating Depression



CSC11577