AN ABSTRACT OF THE DISSERTATION OF

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Cass Dykeman

Older adults are the fastest growing population in the United States, and their numbers are expected to continue rising over the next few decades. The number of older adults with psychiatric disorders such as anxiety is also increasing. Increases in the population of older adults and in the incidence of anxiety in this population create the need for counseling clinicians to be knowledgeable of the unique needs of this group. Researchers have found differences between older and younger adults in their experiences of anxiety, which may make it difficult for clinicians to understand, assess, and treat anxiety in older adults. This dissertation contains two manuscripts focused on the age-specific features of generalized anxiety disorder in older adults. The first is a literature review. Major topics that emerged from the reviewed articles included: (a) older adults are often misdiagnosed with physical, medical or other mental illnesses when GAD is present but unrecognized, (b) frequently the presentation and experience of GAD in older adults has somatic origins, (c) frequently older adults demonstrate debilitating GAD symptoms with significant risk factors yet

these symptoms fall short of the DSM-IV criteria for GAD and (d) older adults have a wider and different array of worry topics.

The second manuscript is a research study. The research question was, "Can a unidimensional measure of counselor knowledge on the age-specific features of anxiety in older adults be developed?" The development of the measure was based upon content areas drawn from (a) the research literature, (b) the American Counseling Association gerontology competencies, and (c) feedback from an expert panel and mental health clinicians in the area of older adult anxiety. Reliability and factor analysis methods were employed to determine internal consistency of the measure and to determine the dimensional factor structure. Counselors from the U.S. Northwest ($n$ = 100) were administered the measure to establish the reliability and factor structure information. Results indicated the measure had .74 internal consistency and possessed at least a bidimensional factor structure. This finding does not support the hypothesis that the factor structure of the COAAI is unidimensional. The findings of this study could be applied to further develop, validate and strengthen the ability to assess counselor knowledge on the age-specific features of older adult anxiety.

# Age-Specific Features of Generalized Anxiety Disorder in Older Adults

by
Joselyn D Salaz

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I understand that my dissertation will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my dissertation to any reader upon request.

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Joselyn D. Salaz, Author

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## CONTRIBUTION OF AUTHORS

Dr. Tim Bergquist assisted in the analysis and interpretation of the data. Mark Evans, and his team at Editors for Students, assisted in the on-going formatting and editing of the dissertation.

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# Age-Specific Features of Generalized Anxiety Disorder in Older Adults

By Joselyn D. Salaz

# CHAPTER 1

# GENERAL INTRODUCTION

## Overview

The purpose of this dissertation is to demonstrate scholarly work by using the manuscript document dissertation format outlined by the Oregon State University Graduate School and the Counseling Academic Unit of the College of Education. In Chapter 1, I provide explanations that tie together themes from the two journal-formatted manuscripts found in Chapters 2 and 3 to support the way in which these works build toward research conclusions pertinent to the importance of understanding and assessing the age-specific features of older-adult anxiety among counselors Accordingly, Chapter 2 is a literature review titled "A Review of the Literature on the Age-Specific Features of Older-Adult Anxiety."This manuscript identifies and discusses the most important features of GAD in older adults. Chapter 3 contains quantitative research in a manuscript titled "Development of a Measure to Asses Counselor Knowledge of the Age-Specific Features of Generalized Anxiety Disorder in Older Adults". The purpose of the study described in Chapter 3 is to develop a reliable measure used to assess counselor knowledge around the age-specific features of GAD and determine the dimensionality of the factor structure. Implications can be applied to further develop and strengthen the ability to assess counselor knowledge on the age-specific features of older adult anxiety. Chapter 4 offers general conclusions and links the chapters together.

Anxiety disorders, and their associated diagnostic features, have been widely taught and studied among the general population. The age-specific features of older-adult anxiety, however, have received comparatively less general and educational attention,

despite a demographic shift toward a large population of older adults who are receiving mental health services. According to researchers studying these age-specific factors, older-adult anxiety is an underestimated, misunderstood, and poorly studied problem in the counseling field and in counseling literature (Alwahhabi, 2003; Hopko et al., 2000; Jeste et al., 2005; Mogotsi et al., 2000; Molhman & Price, 2006). Due to the unique aspects of the experience and presentation of older-adult anxiety, it is important that clinicians working with this population have an understanding of age-specific features to better assess and treat this population. These features, as they relate to GAD, include prevalence rates, risk factors, differences risk factors associated with older-adult anxiety, differences in worry content, changes in the emotional experience of anxiety, somatic and physical effects of anxiety, medical and medication influences on anxiety presentation, and the effects of comorbid disorders.

Improving counselor knowledge of older-adult GAD can help them produce more-accurate diagnostics, which can result in improved treatment outcomes and an improved overall prognosis. In this dissertation I will address the importance of understanding the age-specific features of GAD in older adults and in developing a measure to assess counselor knowledge around these age-specific features.

## Importance to the Profession of Counseling

Despite the increase in the older-adult population, the age-specific features of anxiety disorders continue to be an underdeveloped area of research, despite its being one of the most common and significant mental health problem facing older adults (Bryant, Jackson, & Ames, 2008; Jeste et al., 2005; Kessler et al., 2005). With prevalence rates of generalized anxiety disorder(GAD) estimated at up to 20% (Alwahhabi, 2003), informed

counselors must understand age-specific features of anxiety disorders. The tendency for GADto present differently in older adults in terms of symptomology increases the potential for counselors to misinterpret presenting features (Roux, Gatz, &Wetherell, 2005). Features that may present challenges to clinicians in terms of differentiating older-adult GAD include somatic and physical health, medications, medical issues, psychological comorbidity, and changes in the expression, content, and emotional experience of anxiety.

Due to the similarities among somatic, physical, and medical symptoms and anxiety presentation, studies indicate 50%–70% of all primary care medical visits are related to psychological factors such as anxiety (American Psychological Association [APA], 2010; Bassil, Abdalraouf, & George, 2011; Jones, Ames, Jeffries, Scarinci, & Brantley, 2001). More specifically, those with GAD have been found to more frequently use healthcare resources, such as primary care and specialty medical care, when compared with adults who do not have GAD (Bassil et al., 2011; Deifenback et al., 2004; Jones et al., 2001; Porensky et al., 2009; Smit, Ederveen, Cuijpers, Deeg, &Beekman, 2006).

Other outcomes associated with age-specific features of older-adult GAD include (a) decreased functioning; (b) increase in physical health problems including disability (c)overall lower quality of life (Alwahhabi, 2003; Kogan, Eldelstein, & McKee, 2000; Lenze et al., 2001; Mendlowicz & Stein, 2000; Wolitzsky-Taylor, Castriotta, Lenze, Stanley, & Craske, 2010) and (d) worsening dementia (Sinoff& Werner, 2003). Thus, it is important for counselors to be well informed about older-adult GAD and related symptoms.

Only 11% of counselors providing assessment services to older adults state that they have the tools necessary to accurately assess age-related factors of anxiety disorders (Quall, Segal, Norman, Niederehe, & Gallagher-Thomson, 2002). Of clinicians working among this population, 58% state that they would like more training on the specific unique needs of older adults, and 38% state that they need more assessment info on age-specific features of older-adult anxiety (Quall et al., 2002). Blieszner (1994) reported only 10% of counseling clinicians working with older adults receive any graduate training in gerontology counseling or in older-adult issues. Most of this training, however, is received primarily through informal clinical internship experience or on-the-job training without supervision or consultation from clinicians trained in older–adult issues (Quall et al., 2002). Interest in more-specific, formal training around age-related features of older adult conditions, coupled with the growing demand for counselors who are knowledgeable about such issues, supports a rationale for research that addresses these core issues.

## Rationale

The body of literature about older-adult psychological disorders is relatively minimal when compared to the body of research that addresses younger adults, despite the increase in the population of older adults. According to the American Psychological Association (APA)(2010), adults 85 and older are increasing faster than any other age group. The proportion of U.S. adults over 65 is expected to reach well over 20% by 2030, a 7% increase from 2010. Due to the increase in older U.S. adults, more of this population will enter the mental health system, accept mental health treatment, and use

services for longer periods due to longer life expectancy (APA, 2010; Olfsen & Gameroff, 2007; Mohlam& Price, 2006; Quall et al., 2002; Streiner et al., 2006).

Because of the anticipated increase in treatment-seeking older adults, counselors must increase their knowledge about older-adult psychological disorders to meet the need of this growing population. The professional literature dedicated to gerontology standards in counseling attests to the importance and growing demand for competent knowledge of counselors serving this population (APA, 2000). The American Counseling Association upholds the ethical standard that clinicians must have appropriate, requisite education, training, specific expertise, and supervision before working in a new specialty area (APA, 2005). Currently, however, no measure exists to assess counselor knowledge of the age-specific features of older adult anxiety, including GAD, limiting the ability to determine competency in this area.

## Research Question

In this dissertation I ask the following question: Can a unidimensional measure of counselor knowledge of the age specific features of anxiety be developed?"

Hypothesis:

$H_1$ :The COAAI presented a unidimensional factor structure.

The development of a reliable and unidimensional measure to assess counselor knowledge of older adult GAD will improve the understanding of factors inherit in older adult anxiety.

# Glossary of Terms

*Adult Development and Aging Association* (ADA):a national association of the APA that strives to advance the study of psychological development and change throughout the adult years.

*Age-Specific Features: distinguishing factors that are important and significant to a specific age group.*

*Association for Counselor Education and Supervision* (ACES): a national association dedicated to the development and promotion of quality education and supervision of counselors in all work settings.

*Angoff Method*: a systemic method used for selecting passing standards in which a passing score is computed using an estimate of the probability of a borderline candidate answering each item correctly.

*Anxiolytic*: a medication used for the treatment of anxiety and related psychological and physical symptoms.

*Benzodiazepines*: a group of psychotropic agents used as anti-anxiety agents, muscle relaxants, sedatives, and hypnotics.

*Borderline candidate/student*: also known as minimal acceptable candidate or student, an individual who demonstrates the minimum acceptable level of competency as defined by knowledge, skills, and/or abilities.

*Cardiovascular*: relating to or affecting the heart and blood vessels.

*Clinician*: a recipient of a master's degree or higher who is professionally trained in psychology, counseling, social work, or a related behavioral health field and who provides psychological services.

*Cognitive decline*: the regression of one's intellectual activity.

*Cognitive functioning*: the degree to which an individual is able to use his or her intellectual activity.

*Community dwelling*: residing/living in an independent community setting.

*Comorbidity*: two or more coexisting psychological conditions.

*Cortical networks*: neural networks in the brain that connect information to the cerebral cortex.

*Competency*: the minimum standard for quality, skill, knowledge, and attitude of practitioners for effective practice.

*Counselor:* A person who possesses a master's degree and/or works as a mental health psychotherapist as one of the following: counselor, family therapist, social worker, psychologist.

*Counseling Older Adult Anxiety Inventory (COAAI)*: an inventory designed to measure clinician knowledge around older-adult anxiety.

*Dementia*: the deterioration of cognitive functioning.

*Diagnostic coding*: the identification and classification and of mental disorders

*Dilllman's Total Design Method (TDM):* A method of recruitment found to increase subject participation by explaining the importance and benefit of study to participants and their prospective fields.

*Expert panel:* a group of clinicians who are subject matter and/or criterion experts in the field of gerontology competency and the age-related features of older-adult anxiety.

*Functional impairment/disability*: a state of diminished physical ability or physical inability to maintain daily living skills.

*Gastrointestinal*: relating to or affecting the stomach and intestines.

*Health-related quality of life*: the extent to which one measure's his or her overall quality of life in relation to his or her physical health.

*Hypervigilence*: excessive alertness and awareness of or sensitivity to one's surroundings.

*Knowledge level*: the degree of practical and theoretical understanding of a content area acquired through education

*National Board of Certified Counselors* (NBCC): A national certifying organization for professional counselors in the United States.

*Neurological*: relating to or affecting the nervous system.

*Older adult*: a person 65 years or older.

*Physiology*: the functional/biological process of the living body.

*Polypharmacy*: the use of multiple medications/prescriptions at one time..

*Psychopathology*: the study of psychologically based illness.

*Psychopharmacology*: the reactions and properties of medications used for psychological reasons.

*Psychosomatic*: related to or involving bodily symptoms caused by psychological means.

*Psychotropic*: A class of medication used to alter mood, activity, behavior, or perception.

*Pulmonary:* relating to or affecting the lungs.

*Rheumatoid arthritis*: a chronic, progressive autoimmune disease characterized by inflammation and swelling of the joints.

*Somatic*: when psychological distress and/or changes influence concern for bodily symptoms.

*Somatization*: a concern with bodily symptoms that lacks an organic origin and is caused by psychological means.

*Subthreshold criteria*: the degree at which symptoms for diagnosis of a psychological disorder are present but fall short of full diagnosis.

*Vascular dementia*: an organic disorder resulting in deterioration of intellectual faculties, such as memory, concentration, and judgment.

## Organization

The dissertation is organized according to a thematic review of the literature focusing on the constructs described in the research question. The following chapters contain two manuscripts. In Chapter 2, a literature review, I explore and discuss the scholarly research around the age-specific features of GAD including prevalence rates, risk factors, content of worry, emotional experience of worry, physical and somatic manifestation of symptomology, medical influences on presentation, and the effects of comorbid disorders. The chapter contains an abstract, introduction, methods, results, and discussion of the thematic literature review.

The second manuscript comprises Chapter 3, a research article, and Chapter 4, an exploration of general conclusions. In these chapters, I discuss the need and implications for counselors working with older adults to have competent knowledge around the age-specific features of older adult anxiety and introduce the COAAI as a measure to assess

counselor knowledge around these areas. In Chapter 3 I detail a quantitative study around the procedures and analysis of developing the COAAI and determine the factor structure of the measure. Lastly, in Chapter 4 I discuss conclusions and thematically link both manuscripts.

# A Review of the Literature on the Age-Specific Features of Generalized Anxiety Disorder in Older Adults

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## Abstract

Counselors often miss the presence of anxiety in older adults. The purpose of this thematic literature review was to summarize research findings on the age-specific features of older adult generalized anxiety disorder (GAD). This review used MEDLINE, EBSCOhost, PsyInfo and Academic Search Elite to identify literature reviews, and meta-analyses related to anxiety in older adults. The timeframe for the review was 2000 to 2011. Of the 217 original sources retrieved from the search timeframe and databases, 131 met criteria for inclusion in the final literature review. Major topics that emerged from the reviewed articles included: (a) older adults are often misdiagnosed with physical, medical or other mental illnesses when GAD is present but unrecognized, (b) frequently the presentation and experience of GAD in older adults has somatic origins, (c) frequently older adults demonstrate debilitating GAD symptoms with significant risk factors yet these symptoms fall short of the DSM-IV criteria for GAD and (d) older adults have a wider and different array of worry topics.

# A Review of the Literature on the Age-Specific Features of Older-Adult Anxiety

Older adults are a growing population that in 2010 made up almost 20% of the current U.S. population (Federal Interagency Forum on Aging-Related Statistics, 2008). Due to the increasing number of baby boomers joining this population, the number of older adults is expected to reach 70 million by 2030 (U.S. Administration on Aging, 2003). This number is almost quadruple the older adult population in 1970 (APA, 2010). With the increasing number of older adults entering the U.S. mental and medical health care systems, it is important that clinicians understand the age-specific characteristics of anxiety disorders in this population.

Currently, 15% of all adults age 65 or older meet diagnostic criteria for some type of anxiety disorder. This figure may be even higher due to the coincidence of other mood, affective, cognitive, and medical disorders (APA, 2010). In a reputable and large epidemiological catchment area survey, anxiety disorders were found to be more than twice as prevalent in older adults as other affective disorders and four to seven times as prevalent as major depressive disorder (Rieger, Burke, Rae, Myers, & Krammer, 1988). More recently, in a national comorbidity survey replication, 7% of older adults age 65 or older in a nationally representative sample met criteria for an anxiety disorder in the past 12 months (Gum, King-Kallimania, & Kohn, 2009).

Estimated prevalence rates of anxiety symptoms in older adults have been estimated to be as high as 20% (Alwahhabi, 2003). With baby boomers increasing in age and anticipated to live longer and to be more likely to seek mental health services than previous generations (APA, 2010; Jones et al., 2001), clinicians must have adequate knowledge and understanding of this population's mental health needs.

Older-adult anxiety, specifically GAD, has been associated with physical and role disability, poorer self-reported health, decreased quality of life, increased use of medical services (Jones et al., 2001; Smit et al., 2006), and use of medications with negative side effects (LeRoux et al., 2005). There is a consensus among researchers in regards to the significant overlap between medical, affective, and cognitive disorders in this population (Brenes et al., 2005; Sinoff & Werner, 2003). This overlap makes it difficult to recognize and assess anxiety disorders.

The experience, presentation, and assessment of GAD in young and middle-aged adults are relatively well understood. However, research on older adult anxiety needs more attention (Gretarsdottir, Woodruff-Borden, Meeks, & Depp, 2004; Seun Kim, Braun, & Kunik, 2001). GAD is generally known as the most common anxiety disorder among older adults. Yet, knowledge of GAD with this population is still nascent (Katon et al., 2009; LeRoux et al., 2005; Mantella et al., 2007; Porensky et al., 2009). Although numerous studies have been conducted to specifically address this, the complex features of older-adult anxiety make for varying results. To complicate matters, the methods used to study GAD in the elderly also vary significantly, creating mixed results.

The objective of this literature review is to provide an overview of the age-specific features of older-adult anxiety through discussion of the following: (a) prevalence rates of anxiety and GAD, (b) risk factors associated with GAD, (c) content of worry and emotional experience of GAD, (d) physical and somatic symptomology, (e) influence of medical disorders and medications, and (f) effects of comorbid disorders.

## Methods

This thematic literature review was based on a review of scholarly research articles, book chapters, and meta-analyses retrieved using PsyInfo, EBSCO host, and Medline. I collected literature published between 2000 and 2011 over a several month span by searching for the following key terms: *anxiety*, *anxiety disorders*, and *GAD* with *elderly*, *aged*, *older adult*, *seniors*, and *geriatric* and *diagnos**, *assessment*, *symptoms*, *presentation*, and *features*. I used additional keywords to further narrow my search for articles: *DSM criteria*, *risk factors*, *prevalence*, *variables*, and *medic**. I did not restrict my search to certain definitions of older adults or specific settings, given the narrow scope available in this area.

I reviewed the retrieved for relevance to the study topic and depth of information presented. The selection criterion for articles to be included in the literature review was a focus on older adult anxiety features, specifically GAD. Of the research articles, including reviews, bibliography references, Internet resources, and book chapters I retrieved, 217 met the criterion for inclusion. I included 131 of the 217 articles in order to keep this research as current and relevant as possible.

I also reviewed several textbooks, trainings, lectures, works of fiction, and Internet postings in an effort to comprehensively understand concepts related to features of anxiety in older adults. Although some of this information is not included in the findings, it has likely colored or altered my interpretations of the research findings and could affect my inclusion and/or summarization of the research articles based on the various concepts I learned over several months of research.

For the scholarly work included in the literature review, the following features were identified as the most prevalent and significant: (a) Prevalence and risk factors associated with GAD; (b) age-related differences in the content, presentation, and experience of GAD symptoms, and (c) evidence of the importance of understanding how medications, medical illnesses, somatic/physical conditions, and comorbidity influence older-adult anxiety.

## Results

I conducted a literature search of several to identify potentially relevant studies. Of the initial 217 original studies retrieved, 131 met criteria for inclusion in the literature review. See Figure 1 for inclusion/exclusion criteria. In this section I will report on the research literature on the following specific topics (a) prevalence rates, (b) risk factors, (c) content of worry (d) experience of worry, (e) clinical presentation of GAD, (f) physical and somatic influences, (g) medical influences, and h influence of comorbid disorders.

### Prevalence Rates

Many researchers have argued that anxiety disorders are the most common mood disorders among older adults, with prevalence rates as high as, if not higher than, those of depressive disorders (APA, 2010). Numerous researchers have explored the prevalence rates of anxiety disorders among older adults, with results ranging from 2.9% (Schoevers, Beekman, Deeg, Jonker, & VanTilberg, 2003) to 20% (Alwahhabi, 2010). In addition, there is a population of older adults with subthreshold symptoms that are undetected and therefore untreated. Although anxiety disorders are common among older adults, these

disorders have been underestimated, undertreated, and poorly studied (Alwahhabi, 2003; Bassil et al., 2011; Bryant et al., 2008).

Gum et al. (2009) sought to compare the prevalence rates of anxiety and found that percentages varied widely even among older adult subgroups. Of adults age 55–64, 6.9% had anxiety disorders compared to 13.9% of adults 65–74 and 10.4% aged 75–85. The results demonstrate the wide variance of prevalence rates among subgroups of older adults.

Numerous factors account for the variance in prevalence rates, including differences in the definition of *older adult*, sampling procedures, assessment tools, comorbid medical/psychological disorders, and the cognitive and functional ability of subjects (Ritchie et al., 2004; Wolitzsky-Taylor et al., 2010). Although many older adults do not meet the specific criteria for a GAD diagnosis, several researchers have demonstrated the prevalence of GAD symptoms to be significantly higher than the number of diagnosed adults, meaning many adults are at a subthreshold level (Beekman et al., 1998; Ruscio et al., 2007; Schurmans et al., 2005). Researchers have found that this subthreshold population presents with distress outcomes that are just as, if not more, significant as those that meet the GAD diagnosis criteria (Kessler et al., 2005).

To address the concern that subthreshold symptoms for GAD exclude many older adults with clinically significant anxiety symptoms, Ruscio et al. (2007) examined the effect of relaxing the three criteria for GAD on outcomes. Results suggested that subthreshold manifestations of GAD are significantly related to elevated risk of subsequent psychopathology. In addition, Shaub and Linden (2000) studied anxiety in older adults using a sample of 516 adults over age 70. Shaub and Linden concluded that

more than half of anxiety disorders could not be specified to the phenomenology of anxiety and the DSM criteria could not be met. Other researchers have found that GAD lasting at least 1 month in older adults has very similar clinical symptoms as GAD lasting 6 months or more (Kessler et al., 2005).

Wolitzsky-Taylor et al. (2010) evaluated the effects of advancing age on anxiety disorders and found a need to extend the DSM section on age-specific features of anxiety disorders to better account for the unique characteristics of GAD. They recommended highlighting the importance of subclinical anxiety that does not conform to a DSM diagnosis. They also suggested the need to emphasize and clarify that distressful/impairing anxiety is not a normal part of the aging process; rather it a topic for further investigation (Seun Kim et al., 2001; Wolitzsky-Taylor et al., 2010).

Overall, researchers generally agree that older adults are more likely to report a high number of anxiety symptoms while failing to quality for a GAD diagnosis and thus are more likely to be susceptible to impairing outcomes (Alwahhabi, 2003; Heun, Papassotiropoulos, & Ptok, 2000; Kogan et al., 2000; Lenze et al., 2001; Wolitzsky-Taylor et al., 2010). Mendlowicz and Stein (2000), in a review of 20 subjects, noted significant impairment marked by compromised quality of life and psychosocial functioning in individuals with subthreshold forms of anxiety disorders. These outcomes suggest a need to further understand risk factors associated with GAD among older adults and how these symptoms influence overall quality of life.

**Risk Factors**

Risk factors associated with older-adult GAD is an important area of research given the significant and impairing effect it can have on overall quality of life. Anxiety

symptoms predict progressing physical disability, specifically among older women (Vink et al., 2009) and reduce the ability to perform activities of daily living (Bassil et al., 2011). Older adults with GAD are also less independent and often increase the burden on family and caregivers (Lenze et al., 2001). Common risk factors identified in the literature include (a) poor cardiovascular health (Alwahhabi, 2003), (b) low education and socioeconomic status, (c) isolation (Bassil et al., 2011; Schaub & Linden 2000; Vink et al., 2009), (d) changes in health (Bryant et al., 2008), and (e) most prevalent--loss of functional ability (LeRoux et al., 2005; Porensky et al., 2009; Ruscio et al., 2007). Researchers have consistently found that older adults with GAD experience (a) higher rates of disability (Porenzky et al., 2009; Qazi et al., 2003), (b)lower quality of life (APA, 2010; Brenes et al., 2005; Bryant et al., 2008), (c)particularly health-related quality of life (APA, 2010; Bassil et al., 2011), (d) increased use of medical services (Wetherell et al., 2004), and (e) increased risk for the onset of disability (Ayers, 2007; Bassil et al., 2011; Bryant et al., 2008).

Recently, researchers have paid more attention to the risk factors associated with GAD on cognitive changes and functional impairment. Because cognitive limitations are generally more common in older adults, specific attention is warranted as to how anxiety influences, or is influenced by, these risk factors and overall quality of life. Brenes et al. (2005) sought to determine the influence of GAD on the progression of disability and to examine possible mediators of the relationship in a community-based, observational study of 1,002 functionally limited women aged 65 or older. The researchers concluded that GAD was a significant risk factor for the progression of disability in older woman, independent of several potential confounding variables including depressive symptoms,

medication use, physical activity, physical aliments, and medical illnesses. They also found that women with anxiety symptoms were 28%–67% more likely to demonstrate disability. In a 9-year projective study of the onset of risk factors for anxiety, Vink et al. (2009) also concluded that women with a functional status decline had the highest risk for anxiety.

Wetherelland & Thorp et al. (2004) found adults 65 and older with GAD exhibited worse health-related quality of life (e.g., body pain, poor general health, poor social functioning) compared to nonsymptomatic older adults regardless of the presence or absence of comorbid psychiatric disorders. Furthermore, in a comprehensive review of 66 studies on the association of late-life anxiety with physical disability, researchers also found anxiety to be a consistent risk factor for disability (Lenze et al., 2001). Witchen, Carter, Pfister, Montgomery, and Kessler (2000) further supported the finding that GAD is associated with high impairment. Using the DSM-IV criteria for GAD, Witchen et al. also found that even after controlling for other psychopathologies, such impairment was often conceptualized as poor self-perceived health and a low quality-of-life score.

Porensky et al. (2009) sought out to describe the burden of GAD on older adults by examining a sample of 164 older adults and 42 healthy participants. All were evaluated using instruments to measure disability and to assess health-related quality of life. After controlling for medical burden and depressive symptoms, the researchers concluded that higher-severity anxiety symptoms were more closely associated with greater disability and poorer health related quality of life in several domains. Older adults with GAD were more often disabled, had worse health-related quality of life, and had greater health care utilization than nonanxious comparison participants, even in the

absence of psychiatric comorbidity. Ruscio et al. (2007) further supported this claim by studying GAD's effect on prevalence rates and finding the severity of GAD predicts the onset of secondary disorders, with more severe GAD associated with higher risks of secondary disorders.

Research also generally supports the hypothesis that the presence or severity of anxiety is associated with lower cognitive functioning in older adults (Bierman, Comijs, Jonker, Scheltens, &Beekman, 2005; Hogan, 2003). However, the extent of this association varies. Mantella et al. (2007) noted that older adults might be more susceptible than younger ones to the effects of anxiety across multiple cognitive domains because of reduced working memory and processing resources.

Sinoff and Werner (2003) addressed cognitive functioning by investigating 137 anxious older adults with no depression or cognitive impairment. They hypothesized that after loss of memory, anxiety in older adults is the primary predictor of further cognitive decline. After assessing for functioning and anxiety, the researchers found that anxiety is interrelated with and inseparable from loss of memory and, directly, or indirectly via depression, predicts future cognitive decline.

Similarly, Mantella et al. (2007) sought to characterize cognitive functioning in older adults with GAD using a sample of 19 subjects, which they compared to subjects who did not have GAD and patients who had major depression. Mantella et al. found those with GAD had negative general cognitive functioning, delayed memory, and short-term memory impairment compared to the control groups. However, Mantella et al. did not find impairment in attention, as Hogan (2003) found in a study of associations between divided attention and level of worry in older adults with GAD.

Similarly, DeLuca et al. (2005) found a different result in a study of 79 older adults with GAD. After a 4-year follow-up, the group of older adults with GAD showed a greater decline in memory but no difference in general cognitive functioning compared to a control group. Other researchers have found associations between older-adult GAD and impaired learning (Bierman et al., 2005; Wetherell et al., 2002), adding to the variety of effects anxiety can have on overall cognitive functioning.

In addition to Sinoff and Werner's (2003) findings about the effect of older-adult anxiety on memory loss, Sinoff and Werner explored the relationship between anxiety and cognitive impairment by assessing anxiety at baseline and again an average 3.2 years later. They concluded that anxiety (as measured by clinician-administered instruments) was a significant predictor of future cognitive decline as defined by performance on a mini mental status exam. Those classified as experiencing clinically significant anxiety were nearly four times more likely to experience cognitive impairment at the follow-up assessment than those without anxiety (Sinoff & Werner, 2003). Several other researchers, using samples ranging from 202 to 1,481 subjects, have also concluded cognitive impairment increases when coupled with general anxiety symptoms (Gallacher et al., 2009) or GAD (Hwang, Masterman, Ortiz, Fairbanks, & Cummings, 2004; Lyketsos et al., 2002; Tatsch et al., 2006; Witchen et al., 2000), suggesting a strong association. Sinoff and Werner (2003) emphasized that it is almost impossible to separate loss of memory from anxiety.

In other studies of anxiety with dementia or other cognitive disorders in older adults, results have suggested that individuals with vascular dementia have a significantly higher risk of anxiety than those with other cognitive disorders (Ballard et al., 2000;

Porter et al., 2003). Overall, rates of cognitive decline, particularly memory loss, have been found to be higher in individuals with anxiety disorders. These results describe the relational nature of anxiety and cognitive decline and allude to the influence anxiety has on the overall well-being of older adults.

**Content of Worry**

Research also finds older adults possess different worry content than younger ones, with older adults focusing more on health and their role with others (Lenze et al., 2001; Porenzky et al., 2009). How clinicians understand and interpret these symptoms and features of older-adult anxiety demands more consideration.

Older adults with GAD have a greater variety of worry topics compared to younger adults (Deifenback, 2001). These topics include changing physical and cognitive functioning and the perceived or real fear of decreased quality of life (Brenes et al., 2005; Bryant et al., 2008). Studies have shown that older adults tend to worry more about health and their perceived burden on others (Lenze et al., 2001) than younger adults, who worry about work, family, and finances (APA, 2010; Porenzky et al., 2009).

Deifenback (2001) addressed content of worry in older adults by comparing 44 older adults aged 55–81 who had been diagnosed with GAD, and 44 normal controls matched for age, ethnicity, and gender. Deifenback found that older adults with GAD reported a different and wider range of worry topics than a control group. In comparing older adults' worry content with that found in studies of younger adults, Deifenback found age-related differences in worry content in clinical and nonclinical groups in patterns consistent with age-appropriate developmental changes.

Hunt, Wisocki, and Yanko (2003) compared worry content and methods to control worry between 84 older adults and 110 college students. Researchers used worry questionnaires to collect data and found older adults had a wider array of worries and made fewer attempts to control their worry. The differences in worry content, even at a subclinical level, have been shown to cause significant negative life outcomes (Alwahhabi, 2003; Ayers, 2007).

**Experience of Worry**

GAD, as characterized by DSM-IV, is defined as a "pervasive, excessive and uncontrollable apprehension or worry about everyday situations that is difficult to control and lasting 6 months or longer." It requires identification of three or more anxiety-related symptoms, including restlessness, fatigue, irritability, muscle tension, difficulty sleeping, and poor concentration (APA, 2000). Experts in the field of older-adult anxiety argue that these criteria do not fully capture the age-specific features of older-adult anxiety (Alwahhabi, 2003; Cully & Stanley, 2008; Kubzansky, Koenen, Spiro, Vokonas, & Sparrow, 2007; Sheikh, 2003; Wolitzsky-Taylor et al., 2010).

Researchers have found that older adults not only differ in the content of their worry but also in how they physically and emotionally experience anxiety. Older adults have different bodily responses and emotional perceptions of anxiety than younger ones (Cartensen, Pasupathi, &Nesselroade, 2000; Neiss, Leigland, Carlson, & Janowsky, 2009; Yohannes, Baldwin, & Connolly, 2000). They often experience anxiety with decreased physical responses to emotional situations and less attention paid to negative events (Kunzmann, Kupperbusch, &Levenson, 2005; Neiss et al., 2009; Smith, Hillman, &Duley, 2005).

In an overview of issues to consider when assessing anxiety in older adults, Kogan et al. (2000) reported that older adults are less bothered by various affective experiences and that they interpret and experience this affect differently. Other researchers have found that older adults tend to show decreased attention to negative stimuli (Cartensen et al., 2000; Isaacowitz, Wadlinger, Goren, & Wilson, 2006; Mather &Carstensen 2003; Mather et al., 2004; Spaniol, Voss, & Grady, 2008) and increased memory for positive items (Leigland, Schulz, &Janowsky, 2004; Mather & Knight, 2005; Thomas & Hasher, 2006).

Researchers have demonstrated a higher tolerance for negative or distressful situations compared to younger adults. Explanations of this difference vary. Some have stated that older adults have stronger, more-developed coping skills through repeated exposure (Gretarsdottir et al., 2004); others have pointed to physical differences in how the aging body responds to stress (Kogan et al., 2000; Teachman, Siedlecki, & Magee, 2007; Wolitzsky-Taylor et al., 2010). The unique worry content of older adults may influence the overall experience of GAD for this population.

Researchers have also examined how older adults emotionally perceive and physiologically respond to anxiety in relation to their younger counterparts. Neiss et al. (2009) examined the effects of age on emotional perception and physiology response by measuring skin conductance response in relation to subjective perceptions of emotional pictures. Outcomes demonstrated that older adults' perception of emotional events was disconnected from the physiological state induced by the emotion, although perception and physiological state were connected in younger subjects. Similar studies of cardiovascular response and respiration rates when viewing emotional conflicts

(Kunzmann et al., 2005) and of heart rate and startle response to emotional pictures (Smith et al., 2005) also demonstrated a decline in bodily response in older adults.

Understanding age-related changes occurring in the aging body are important to discuss as they may help to clarify age-specific features in the experience and presentation of anxiety among older adults. Physiological research supports the idea that age-related changes in bodily arousal and emotional perception cause differences between older and younger adults. Gunning-Dixon et al. (2008) studied brain activity response to viewing facial emotions. The researchers used functional magnetic resonance imaging to compare responses between older and younger adults. They found that older adults rely on different cortical networks to perceive emotional expressions than younger participants.

Studies of the emotional experience of anxiety in older adults also have suggested differences between older and younger adults. Cartensen et al. (2000), in a cross-sectional study of age differences in emotional experience, recorded emotions across a 1-week period, focusing on frequency, intensity, complexity, and consistency of emotional experience in older adults' everyday life. Their findings indicated older adults have a more-differentiated emotional experience than younger adults. These results support research by Price and Mohlman (2006) testing the hypothesis that better performance on an inhibitory control task is associated with greater severity of worry. Among 43 adults aged 60–77, Price and Mohlman found that older adults with GAD appeared to suffer more severely from anxiety symptoms when inhibition control exceeded normal averages.

These findings support research by Tsai, Levenson, and Cartensen (2000) suggesting older adults are better able to regulate their emotional reactions in specific situations. Molham et al. (2004) similarly found the distinguishing factors of GAD in older treatment-seeking adults may be fewer and slightly different (Gretarsdottir et al., 2004) from those of younger adults. The differences in emotional experience may help account for the differences in expression of GAD symptoms in older populations.

In a review to evaluate the effects of advancing age on the clinical expression of anxiety disorders, Wolitzsky-Taylor et al. (2010) suggested a need to extend the DSM section on age-specific features of anxiety disorders to account for differences in older-adult expression. Some of these suggestions include highlighting the importance of considering anxiety symptoms that cause distress and impairment but do not conform to a DSM diagnosis.

To further complicate the presentation of anxiety symptoms, hormonal changes in older adults, especially women, can also affect anxiety presentation. Kogan et al. (2000) found that these differences can be accounted for, in part, by changes in the sympathetic nervous system and norepinephrine/ epinephrine levels. Discussion of this specific etiology, however, is beyond the scope of this review.

Age-related changes in physiological response have been found to have significant effects on the experience and presentation of anxiety in older adults. Differences in the bodily and emotional experience of older-adult anxiety contribute to the growing need for clinicians to better understand these age-specific factors among older adults.

**Clinical Presentation of GAD Features**

The clinical presentation of anxiety features among older adults often manifests differently in older adults compared to younger populations. Older adults' anxiety symptoms often overlap with medical conditions, causing older adults to express anxiety as medical or somatic problems rather than as psychological distress (Alwahhabi, 2003; Kogan et al., 2000; Lenze et al., 2005; Seun Kim et al., 2001; Wetherell & Gatz et al., 2004; Wolitzsky-Taylor et al., 2010). Older adults commonly express anxious psychological distress through physical and somatic symptoms (Bassil et al., 2011, Lenze et al., 2005; Preville, Herbert, Bravo, & Boyer, 2002; Seun Kim et al., 2001).

Older adults also often mistake physical symptoms of anxiety, such as hyperventilation (APA, 2010), hypervigilence (Flint, 2005; Kroenke, 2003; Lenze et al., 2005), heart palpitations (Lenze et al., 2005), sweating (Haug et al., 2002), muscle aches (Gore et al., 2005; Lenze et al., 2005; Wetherell & Gatz, 2004), restlessness (Flint, 2005), impaired attention, and poor concentration (Zwart, Dyb, Hagen, Svebak, &Holmen, 2003), as symptoms of a medical or physical condition rather than of anxiety. Counselors also commonly believe somatic symptoms are a normal part of the aging process and dismiss the association of these symptoms to anxiety (Seun Kim et al., 2001; Wolitzsky-Taylor et al., 2010). Also, counselors often do not recognize these features as part of anxiety (Wolitzsky-Taylor et al., 2010) as patients underreport psychological symptoms or sometimes don't report them at all due to the stigma associated with anxiety and mental illnesses (Quinn, Laidlaw, & Murray, 2009; Wetherell & Gatz, 2004).

The reciprocal nature of somatic, physical, and medical symptoms with anxiety symptoms often confuses and misguides both clients and counselors. In addition, the

inclusion of medications to treat illnesses introduces the possibility of increasing or decreasing anxiety symptoms relevant to a GAD diagnosis. Lastly, comorbidity with other psychological and/or cognitive disorders further complicates the presentation of age-specific factors related to older-adult anxiety. Overall, anxiety may be secondary, enhanced by a general medical condition, induced by medications, or presented as a symptom of another underlying psychological disorder.

**Physical and Somatic Influences**

Many anxiety symptoms among older adults are rooted in somatic and physical ailments, complicating the presentation of GAD (Porensky et al., 2009; Sareen et al., 2006; Todaro, Shen, Raffa, Tilkemeier, & Niaura, 2007). The most frequent observation discussed in the literature is the phenomenon of anxiety presenting as somatic concerns and physical manifestations rather than as traditionally expected emotional symptoms (Alwahhabi, 2003; Beck & Averill, 2004; Kogan et al., 2000; Lenze et al., 2005; Preville et al., 2002; Seun Kim et al., 2001; Wolitzsky-Taylor et al., 2010). The most common of these symptoms are pain (Gore et al., 2005; Lenze et al., 2005; Seun Kim et al., 2001), gastrointestinal distress (Haug et al., 2002; Lenze et al., 2005), fatigue (Seun Kim et al., 2001; Wetherell& Kaplan et al., 2004), dizziness (Lenze et al., 2005), chest pain (Kroenke, 2003; Lenze et al., 2005), shakiness (Flint, 2005), and headaches (Zwart et al., 2003). While it is not uncommon for the average older adult to have somatic and physical complaints, researchers have found that older adults with these symptoms are more likely than the general population to have GAD (Haug et al., 2002; Zwart et al., 2003).

Somatic symptoms are physical symptoms that cause distress yet lack an objective physical basis linked to psychological stress. Physical symptoms and

somatization are core features of GAD among older adults (Caminero, Blumentals, & Russo, 2005; Lenze et al., 2005; Witherante, 2001; Yohannes et al., 2000); yet researchers have demonstrated differing results related to this association. In a study of the association between anxiety and medical symptoms, Katon, Lin, and Kroenke (2007) found that once they controlled for medical conditions, individuals with medical and anxiety disorders reported higher numbers of somatic symptoms compared to those with just a medical disorder.

Stordal, Bjelland, Dahl, and Mykletun (2002) examined the relationship between anxiety disorders and various somatic health problems through a cross-sectional study. They used survey methods and clinical examinations in the Health Study of Nord-Trondelag, Norway, to examine 60,869 individuals aged 20–89 years who had an anxiety disorder. The researchers categorized participants using scores on the Hospital Anxiety and Depression Scale and somatic health variables. About one-third of individuals reporting somatic health problems also had anxiety disorders.

Another study was designed to examine the relationship between somatic complaints, functional impairment, and psychiatric comorbidity of older adults with medically unexplained symptoms (Hilderink et al., 2009). After reviewing data from 37 consecutive case series, including comprehensive medical exams, 3 patients had a somatic explanation and 2 had symptoms spontaneously resolve before a diagnosis could be made. Of the remaining 32 patients, 10 (31%) had anxiety disorders. Compared with nonanxious patients, anxious patients had more severe somatic symptoms, more psychological symptoms, and more functional impairment supporting the association between somatic symptoms and anxiety. Researchers have also conducted studies of the

relationship between somatization and physical symptoms, finding a strong correlation with anxiety disorders (Kroenke, 2003), including a significant relationship between pain and shakiness (Lang & Stein, 2001; Seun Kim et al., 2001).

In another study specific to older adults, but with differing findings, Wijeratne, Hickie, and Davenport (2006) sought to determine whether discrete somatic dimensions could be derived among the aging population. In a factor analysis using 10,662 subjects who completed a questionnaire about somatic and psychological symptoms, results indicated somatic symptoms could be measured independently of psychological symptoms, suggesting lack of such a correlation.

Young, Abelson, and Cameron (2004) described anxiety's perpetuation and exacerbation of natural heightened bodily responses in response to stressors, often leading to severe and persistent somatization. Other researchers have reported similar results (Stordal et al.,2002;Vogele & VonLeupoldt, 2008). These authors found that somatic symptoms are more likely to be related to anxiety disorders than to physical problems, as anxiety disorders overexaggerate the natural stress response of the central nervous system. Individuals with anxiety disorders, therefore, are known to somatize with greater severity and persistency than control groups, as they are more hypervigilent and worried about changes in the body (Jackson, Houston, Hanling, Terhaar, & Yun, 2001; Katon, Sullivan, & Walker, 2001; Lenze et al., 2005).

Research articles also have suggested a relationship between the treatment of GAD and a decrease in somatic symptoms. Karp et al. (2005) conducted a systematic review of literature on somatic symptoms and treatment outcomes of older patients with anxiety GAD. They found a relationship between treatment of anxiety and reduction in

somatic symptoms and concluded that somatic symptoms in older adults with GAD or anxious depression often improve with successful antidepressant/anxiolytic treatment. Lenze et al. (2001) also studied the effect of anxiety treatment through medication on older-adult somatic symptoms, concluding that somatic symptoms improve with successful treatment of anxiety.

Another important aspect of anxiety in older adults is the somatic and physical symptoms resulting in functional disability. Researchers have consistently found that increased physical symptoms lead to increased rates of disability among older adults (Beardreau & O'Hara, 2008; Brenes et al., 2005; Cully & Stanley, 2008; Gallacher et al., 2009; Lenze et al., 2001; Sinoff & Werner, 2003), specifically older adults with GAD (Mantella et al., 2007; Porensky et al., 2009).

Wijeratne et al. (2006) reviewed the epidemiological catchment area study findings about psychological distress and its relation to somatic symptoms among older adults, concluding that older people are more likely to attribute somatic symptoms to medical disease, which may result in lower rates of diagnosed anxiety disorder among this population. Studies such as by Wijeratne et al. (2006) have questioned the association between anxiety and medical or somatic symptoms. Researchers and theorists alike have pondered to what extent anxiety is a result of the worry associated with physical symptoms and whether it is a consequence of distress about symptoms over time or it causes physical symptoms as an expression of the anxiety disorder (Haug et al., 2002; Lang & Stein, 2001; Wijeratne et al., 2006**).**

**Medical Influences**

In addition being affected by symptoms presenting through somatic and physical manifestations, anxiety can also be heavily influenced by the presence of a medical condition and/or medications to treat medical issues (Brown & Bussell, 2011; Seun Kim et al., 2001; Wolitzsky-Taylor et al., 2010). The majority of research on older-adult anxiety and medical illness supports a reciprocal and cyclical relationship, suggesting anxiety heightens response to physical ailments and medical conditions, and vice versa (Alwahhabi, 2003; Katon et al., 2007; Kogan et al., 2000; Sheikh, 2003; Wolitzsky-Taylor et al., 2010). Medical illnesses can underlie the presentation of anxiety in older adults, creating symptoms that may increase heart rate (Lenze et al., 2005), lethargy (Wetherell& Kaplan et al., 2004), muscle tightness (Gore et al., 2005; Lenze et al., 2005; Wetherell& Kaplan et al., 2004), and GI distress (Haug et al., 2002), among others—all of which mimic anxiety symptoms. Medical concerns can also either exacerbate or mask anxiety symptoms by increasing or decreasing the severity, frequency, or duration of anxiety symptoms already present (Alwahhabi, 2003; APA, 2002; Chutka, Takahashi, &Hoel, 2004).

In addition, medication taken for medical needs can have the same effects on anxiety further complicating the differentiation of anxiety from medical causes. Due to these confounding factors, all medical ailments and medications should be carefully considered and included in the assessment of anxiety and differential diagnosis of older adults (Brown & Bussell, 2011). Because more than 80% of adults 65 and older have at least one chronic physical or medial condition, and 65% have at least two (American

Psychologist, 2010), the likelihood of counselors having to work with older adults with medical conditions, and on medication, is high.

Many researchers have studied the association between medical illness and anxiety, and all have found similar results regarding the reciprocal nature of anxiety and medical illness (Alwahhabi, 2003; Katon et al., 2007; Seun Kim et al., 2001; Wolitzsky-Taylor et al., 2010). Alwahhabi (2003) suggested anxiety processes and physical disease enter into a reciprocal stimulation as a function of (a) diminished capacity to withstand stress and (b) hypervigilence of stress symptomology. Findings of this bidirectional effect also support Sheikh's (2003) research conclusions on somatization and anxiety and Kogan et al.'s (2000) hypothesis that anxiety and associated symptoms can increase one's vulnerability to physical disease. Diagnosis with or belief that one has a medical condition can give rise concern about experiencing this condition, or the prognosis of such, leading to excessive worry. Although this theory is not specific to older adults, they generally have more medical issues, making this effect especially pertinent to this population.

Anxiety also can be theorized as a manifestation of physiological changes that results from a medical condition (Sheikh, 2003) or a psychological reaction to a physical or medical disorder (Alwahhabi, 2003). Researchers such as Wolitzsky-Taylor et al. (2010) have echoed this hypothesis in their review of the associations between anxiety, cognitive impairment, and medical conditions.

Researchers have suggested GAD may lead to chronic and exaggerated effects involving the body, whether neurological, gastrointestinal, or cardiovascular (Seun Kim et al., 2001), confounding the recognition of anxiety with etiologic and phenomenological

challenges (Lang & Stein, 2001; Sheikh, 2003). Seun Kim et al. (2001) found in their research on anxiety and medical disorders that cardiovascular, pulmonary, and rheumatoid arthritis all are common medical illnesses associated with anxiety disorders. They also found other physical symptoms such as heart disease, COPD, pain, fatigue, insomnia, headaches, and GI distress can be mistaken for anxiety or a symptom of anxiety.

Haug et al. (2002) investigated the relationship between GI symptoms and anxiety due to the high degree of related medical complaints. After administering a health survey to 94,197 participants concerning physical and mental health, the researchers found there was a strong significant relationship between GI symptoms and anxiety compared to the relationship between GI symptoms and depression. The most significant of GI symptoms associated with anxiety included nausea, heartburn, diarrhea, and constipation. These results strengthen the relationship and overlaps between symptoms of anxiety and medical conditions.

Physical pain in any form is another frequent medical condition among older adults that produces anxiety and mimics anxiety symptoms (Seun Kim et al., 2001). Sherbourne et al. (2009) studied aspects of pain related to psychological distress, including anxiety. Their study included cross-sectional interviews of 528 patients, predominately men, participating in a Veteran's Administration (VA) HELP-Vets study. Self-reports and inventories on pain and anxious distress were administered, with results indicating a substantially higher number of patients with moderate-to-severe pain (62%) having anxiety-related psychological distress. Results indicated VA patients with

moderate-to-severe pain are at high risk for anxious psychological distress, illustrating the varying influences medical conditions can have on overall anxiety.

The potential overlap between medical disorders and GAD in older adults is a critical issue, as both disorders can mask or exacerbate the underlying primary source. Lack of counselor recognition of such an overlap can lead to inaccurate assessment and misdiagnosis, and inappropriate treatment or consequences. APA (2010) reported that most older adults present distressful symptomology to their primary care physician as a result of medical issues. Only 29% reported any discussion of emotional problems during their visit (Sherbourne et al., 2009).

APA (2002) estimated that 20% of all older adults do not report problematic mental conditions. Because older-adult anxiety symptoms often are misinterpreted as physical or medical in origin, counselors must review temporal relationships between presentation and remission of GAD and medical symptoms, looking for atypical features that may indicate more assessment is needed and exploring patients' history related to cognition, response to treatment, and so on (Seun Kim et al., 2001). Counselors also should review clients' medical records and work in conjunction with interdisciplinary treatment teams to rule out a medical cause that may be responsible for underlying presentations.

The presentation of older-adult GAD can be the result not only of a medical condition but also of medication used to treat such conditions. APA (2010) reported roughly 75% of adults 65 or over take at least two medications per day. Drug interactions and polypharmacy are widespread (Van Leuven, 2010), creating additional challenges for

counselors to consider when understanding the age-specific features of older-adult anxiety.

Common challenges with older-adult medications include drug-to-drug interactions and medication outcomes or side effects that can increase, decrease, or mask anxiety symptoms (Alwahhabi, 2003; American Psychologist, 2004; Chutka et al., 2004). Due to the changes in the aging body's metabolism, absorption rates, distribution, clearance, and excretion rates of medications, each individual's experience and outcome of medications will differ (Boparai & Korc-Grodzicki, 2011). The influence of older-adult medication on GAD is very complex due to age-related physiologic changes and the likelihood of taking multiple medications.

The effect of a medication's therapeutic value and the impact of side effects are difficult to separate (Boparai & Korc-Grodzicki, 2011; Kutscher, Carnahan, &Malone, 2007). Brenes et al. (2005) described characteristics associated with chronic anxiety symptoms and examined the use of anxiolytic medications in physically disabled women with or without symptoms of anxiety. Among the 791 women age 65 or older who participated in the Women's Health and Aging Study for 2–3 years, researchers measured for a range of anxiety symptoms. Over the course of 3 years, 33% had intermittent anxiety and 48.7% had chronic anxiety symptoms and took anxiolytic and/or antidepressant medications. Results indicated that anxiety symptoms were more common among physically disabled older women than those without physical ailments (Brenes et al., 2005).

Medication side effects can imitate psychological symptoms such as insomnia, decreased concentration (Kogan et al., 2000; Magee & Charmin, 2010) and restlessness

(Lindsey, 2009). Stein and Barrett-Connor (2002) examined how anxiety and insomnia are associated with substantially reduced health-related quality of life (HRQoL) in healthy and medically ill adults. In this cross-sectional study of 1,359 White, middle-class, older (median age 75 years) men and women within a defined community setting, health survey scores were compared for individuals who were currently taking medicine for anxiety and insomnia. Results indicated that chronic physical illness summary scores were associated with significantly greater odds of perceiving oneself as ill and with poorer HRQoL in both men and women (Stein & Barrett-Connor, 2002). Taking a psychotropic medication for anxiety was also associated in both men and women with significantly greater odds of perceiving oneself as ill before and after adjusting for age and chronic physical disorder scores (Stein & Barrett-Connor, 2002). Overall, older community-dwelling adults with anxiety and insomnia, which required pharmacological treatment, was associated with reduction in HRQoL that extended beyond the impact of typical physical illnesses.

It is common for both anxiety and depression to be treated with the same class of medication (SSRIs and SNRIs), which could produce similar outcomes, further complicating the appearance and differentiation of symptoms (APA, 2004; Kutscher, Carnahan, & Malone, 2007; Sheikh, Lauderdale, &Cassidy, 2005). Medications most commonly used for anxiety include benzodiazepines, azapirones, and antidepressants, with benzodiazepines being the most commonly prescribed, although they come with potentially distressful side effects (Lindsey, 2009; Maris, Mcdonald-Miszczak, & Fitzgibbon, 2004).

Paterniti, Dufouil, and Alpérovitch (2002) examined whether chronic use of benzodiazepines over a 4-year period was associated with increased risk of cognitive decline. The authors used a sample of 1,389 older adults aged 60–70, who were recruited from the Epidemiology of Vascular Aging Study. Data on anxiety symptoms were collected at baseline, 2 years, and 4 years using the Spieldberger inventory scale (Spieldberger, 1983) and five other cognitive functioning tests. Findings suggested that chronic users of benzodiazepines had a significantly higher risk of cognitive decline, as reflected in the global cognitive test and the attention tests, than nonusers. All episodic and recurrent users had lower cognitive scores than nonusers, but the differences were not statistically significant. The results were independent of age, sex, alcohol/tobacco use, and education and depression scores. The findings suggested the possibility that long-term use of benzodiazepines is a risk factor for increased cognitive decline in older adults.

To further address the influences of medications among older adults, pharmacological interventions such as fluoxetine, lofepramine, sertraline, and paroxetine were used to treat anxiety in a seven-case series with subjects who had moderate to severe dementia (Qazi et al., 2003). Results indicated positive outcomes for anxiety, but the effect these medications had on evidence of increasing dementia and related symptoms was difficult to differentiate. Results demonstrated prolonged use of medications might accelerate cognitive decline in older adults and illustrated the difficultly in discerning etiology.

Medications for GAD continue to be associated with overall lower medication compliance, which could worsen chronic medical conditions and increase the risk for

higher care assistance (Gibbons, Teri, Logsdon, & McCurry, 2002). Due to common negative side effects and sensitivity that many older adults have to medications, either real or perceived, patients may take medications inconsistently, take less of their medication than recommended, or stop the medication entirely, creating an even more difficult situation. Medication compliance in older patients may be further complicated by sensitivity to side effects, coexisting medical illnesses, functional difficulties (Boparai&Korc-Grodzicki, 2011), polypharmacy, sensory deficits, and cognitive deficits (Baldwin, Anderson, Nutt, & British Association for Psychopharmacology, 2005). Wetherell& Kaplan et al. (2004) found that patients with anxiety disorder often refuse treatment with medication, complain of side effects, or prematurely discontinue treatment because of intolerance. These findings are further supported by research by Maris et al. (2004).

Because of the long-noted association between medical conditions, medications, and anxiety symptoms, overlapping features continue to complicate and skew the presentation of GAD in older adults. Factors such as the initiation of a new medication, the increase or decrease of a medication, or a change to a different type of medication all are important in understanding the influence of medication on features of anxiety. Overall, research has suggested the importance of understanding how older-adult medications can influence the overall presentation of GAD. Given the high prevalence of medications taken by older adults, counselor knowledge in this area is especially important.

**Influence of Comorbid Disorders**

In addition to the features of anxiety and the influences of medical interventions

and medication, GAD is frequently comorbid with cognitive decline and depression (Kogan et al., 2000; Schovvers, Deeg, Van Tilburg, &Beekman, 2005; Seigournal, Kunik, Snow, Wilson, & Stanley, 2008). Older adults with GAD and depression typically present with greater negative consequences. These negative consequences including both worse overall prognosis and greater functional impairment (Bassil et al., 2011; Porter, 2007). Comorbid disorders also result in faster and more severe cognitive decline (American Psychologist, 2004; Cohen, Magai, Yaffee, & Walcott-Brown, 2006). There are also high comorbidity rates of anxiety with other psychological disorders, warranting further consideration when addressing the features of older-adult anxiety. According to recent research, the lifetime prevalence of developing a mood disorder in the context of GAD is as high as 80% (Gorwood, 2004) and the incidence of GAD in cognitively impaired patients with a mood disorder is 26% (Starkstein, Jorge, Petracca, & Robinson, 2007).

Like younger adults, an estimated 75% of older adults with GAD have a comorbid psychiatric diagnosis (Djernes, 2006; Maier et al., 2000; Rieger, Rae, Narrow, Kaelber, &Schatzberg, 1998), most commonly depression (Cairney, Corna, Velduizen, Herrmann, &Streiner, 2008; Wolitzsky-Taylor et al., 2010). Beekman et al. (2000) found the prevalence rates of anxiety disorders to be 47.5% among community-based elderly patients aged 55–85 when there was comorbidity with depression. Similarly, Lenze et al. (2000) found through with a study of 182 depressed participants aged 60 or older that 27.5% also had GAD specifically, while 23% had other anxiety disorders. In an epidemiological catchment area study, Rieger et al. (1998) reported nearly half (47.2%) of those meeting criteria for an anxiety disorder also met lifetime criteria for major

depression. These rates, however, varied depending on which disorder is considered primary and on the diagnostic threshold used as an indication of comorbidity (Alwahhabi, 2003).

In an analysis of data from the Longitudinal Aging Study Amsterdam, one of the largest epidemiologic studies of comorbidity of anxiety disorders in older adults, results indicated 48% of patients with a primary major depressive disorder had a comorbid anxiety disorder (Sheikh, 2003). Other studies have found high rates of comorbidity with depression, ranging from 15% (VanBalkom et al., 2000) to 30% (Beekman et al., 2000), and an increased risk of developing depression with anxiety with age.

Common depression symptoms that often present similarly in anxious clients include irritability, sleep and appetite disturbances, difficulty concentrating, and poor memory (Sheikh, 2003; VanBalkom et al., 2000). Vink et al. (2009) studied the onset of depression and anxiety and compared these comorbid disorders among older adults. Participants aged 55–85 at baseline were assessed for depression, anxiety, health condition, and psychosocial risk factors and assessed again 9 years later. Results showed that health indicators were predictors for depression and anxiety with depression but not for anxiety alone. Depressive symptoms present at baseline were predictive for depression, not anxiety; yet initial anxiety symptoms were predictive for both depression and anxiety. The study by Vink et al., as well as others such as by Schovvers et al., 2003 and Cairney et al., 2008, demonstrated similar findings of the intertwined nature of depressive and anxiety symptoms.

Many researchers have noted the high rates of comorbidity of anxiety and depression. In a study examining the distinguishing symptoms, associated features, and

rates of comorbidity with other disorders, Molham et al. (2004) studied 60 older adults with GAD and found they had higher scores on measures of depression compared to those with mixed anxiety states and panic disorder. Bassil et al. (2011) also reported late-life major depressive disorder comorbid with GAD associated with greater memory decline than major depressive disorder alone. Comorbidity is also associated with greater symptom severity, persistence, functional impairment, poorer compliance and response to treatment, and worse overall prognosis than either disorder alone (Alwahhabi, 2003; Bassil et al., 2011; Lenze et al., 2001; Schaub & Linden 2000; Vink et al., 2009).

In a naturalistic study of older adult subjects, DeLuca et al. (2005) found those with comorbid anxiety disorders (including GAD) showed a greater decline in memory over time than those without comorbid anxiety disorders. Researchers of the relationship between anxiety and cognitive impairment also have found depression does not predict cognitive impairment to the extent GAD does among the older population (Sinoff & Werner, 2003). Although researchers vary on the specific course of comorbid disorders with anxiety, study outcomes illustrate negative consequences overall (Chou, 2009). Gallacher et al. (2009) further supported the complex comorbid nature of anxiety and cognition, suggesting a need for more studies assessing for depression, anxiety, and memory impairment at baseline.

These comorbid disorders make for further difficulty in understanding age-specific features of GAD as comorbid disorders often resemble each other, or disguise or enhance the severity of other symptoms. This phenomenon can lead to an underdiagnosis of GAD, as such symptoms are often misinterpreted for those of another psychological disorder (Sheikh, 2005). As a result, older adults often seek treatment for anxiety

symptoms from their primary care physician instead of from a mental health specialist (Bassil et al., 2011).

## Discussion

The research literature supports the idea that GAD as a significant and distressful disorder among older adults. However, counselor knowledge of such age-specific features of this disorder is limited (Bryant et al., 2008; Edelstein et al., 2008; Fuenes & Cox, 2000). Features such as medical influences, effects of medications, manifestation of somatic symptoms, comorbid disorders, and the content and experience of older-adult anxiety are discussed in the literature as the most important features to consider when working with older-adult anxiety.

Key findings in the literature overall include the following: (a) prevalence rates of older-adult GAD continue to rise despite the underdiagnosing of significantly distressful subthreshold symptoms; (b) risk factors for older-adult GAD include variables such being female, isolation, low socioeconomic status, and having a significant change in medical condition, loss of functional ability, and cognitive decline; (c) older adults emotionally experience negative events differently and respond with less physical intensity; (d) anxiety is commonly expressed by older adults through somatic, medical, and/or physical symptoms such as pain, GI distress, headaches, cardiovascular complaints, pain, and fatigue; (e) older adults with medical complications can skew the symptomology of their anxiety by taking medications that could mask, increase, or decrease anxiety presentation; and (f) the increased number of comorbid disorders among older adults further complicates the distinguishing features of GAD.

Strengths of this literature review include the inclusion of research articles from multiple disciplinary backgrounds, including psychiatry, counseling, psychology, and medicine. Research findings were overall consistent, supporting the reliability of content and features of older-adult anxiety and GAD. An additional strength of this study is the range of research on age-specific features of anxiety, as it provides a more comprehensive understanding of such features.

Limitations of this study include a lack of research and case studies on how these age-related features specifically influence older-adult anxiety and differentiation of assessment. This literature review is also missing research on types of anxiety other than GAD. Discussion of other types of anxiety is pertinent to further understanding how age-specific features influence older adults across the span of anxiety symptoms.

Another limitation is the exclusion of discussing how assessment procedures and diagnostic instruments influence the understanding of age-specific features of GAD. Inclusion of these areas would provide a more comprehensive picture of how such features overlap. However, such a discussion was not included in the literature review, as the focus was on understanding the importance of age-specific features of older-adult anxiety rather than on diagnostic or assessment procedures used to arrive at a diagnosis.

Lastly, differences in the operational definition and assessment of older adults, medical conditions, comorbid disorders, physical illnesses, and cognitive decline among research articles further limited this study. This variation is in part due to differences in assessment tools, instruments used for diagnosis, and differences in clinical judgment. Research studies also varied widely in methodology, making it difficult to compare between and across studies.

Recommendations for future research include looking at suggestions in the literature regarding DSM revisions that would increase the guidance the DSM provides to clinicians in recognizing GAD, as well as other anxiety disorder, in older adults. Revisions include extending the DSM section on age-specific features of anxiety. Wolitzsky-Taylor et al. (2010) also recommended the following changes as they relate age-specific features of older-adult anxiety: (a) Provide a discussion of differential diagnosis between GAD, cognitive decline, and medical/physical illness, including information about conditions that produce symptoms similar to anxiety, and (b) assess for distress and/or life interference with regard to anxiety symptoms, even if older adults do not meet the diagnostic criteria for an GAD.

## Summary

The key findings of this literature review indicate the need for counselors to better understand and increase their knowledge of how GAD is expressed and presented in the aging population (Weiss et al., 2009). Despite the growing body of research and scholarly attention paid to these age-specific features, counselors are still largely unaware of how these features present in older-adult GAD (Bonifas & Fredriksen-Goldsen, 2009; Foster et al., 2009; Olsen, 2002) and how these features influence assessment and treatment. More research around the assessment of counselor knowledge of older adult GAD would allow educators to know if counselors meet competency in serving this older population. Understanding counselor knowledge of older adult GAD would also improve counselor assessment, better inform treatment decisions, and ultimately lead to better prognoses for the older adult population.

In this literature review, I highlight the complex and overlapping nature of the age-specific features of GAD. I bring awareness to the unique position of counselors working with this population and the importance of counselors having knowledge and assessing knowledge specific to these features, especially as the older adult population continues to grow. Understanding the extent of clinical awareness, and ultimately increasing clinician knowledge of, the age-specific features of anxiety will help promote more-appropriate assessment and diagnoses, resulting in more effective treatment and overall outcomes. Researchers have discussed the negative consequences associated with minimal knowledge of older-adult anxiety. Improving clinician awareness and knowledge could potentially lower overall health-related costs and excess use of health services associated with GAD, as 40% of primary care physician visits are related to unidentified psychological issues (Flint, 2005; Kubzansky et al., 2007).

More research is warranted on training of clinicians on the age-specific features of older-adult issues (Cully & Stanley, 2008; Kubzansky et al., 2007; LeRoux et al., 2005; Quall et al., 2002). A better understanding of clinician knowledge around this specific area would further inform where to direct attention in future trainings. Unfortunately, there is no measure that exists which assesses counselors current level of knowledge to know where to begin. I recommend that clinicians be informed of how to identify the specific age-related features associated with GAD and understand how these features influence the course of anxiety. I also recommend a measure be developed that can start as a springboard for assessing counselor level of knowledge and consequently allow educators to assess if counselors are meeting competency in addressing the age-specific features of older adult GAD.

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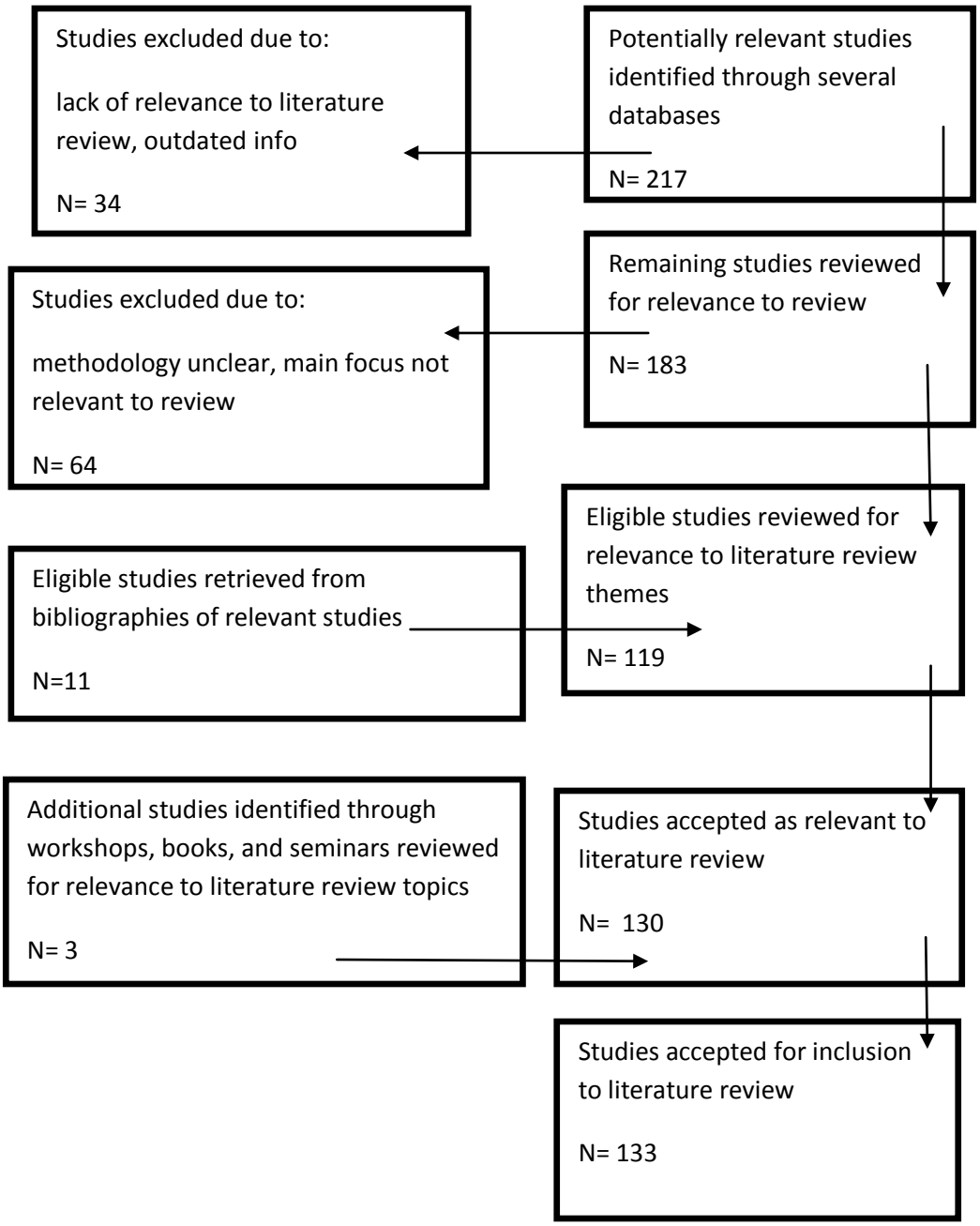


*Figure 1:* Flowchart for literature review inclusion/ exclusion

# Chapter 3

# Development of a Measure to Assess Counselor Knowledge of the Age-Specific Features of Generalized Anxiety Disorder in Older Adults

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## Abstract

There exists strong evidence of age-specific features in the prevalence and clinical presentation of Generalized Anxiety Disorder in adults aged 65 and older. There also exists strong evidence of a rise in the occurrence of this disorder in adults aged 65 and older. As such, mental health counselors will be asked increasingly to provide treatment for this disorder. However, no measure exists to assess counselor knowledge of the age-specific features of Generalized Anxiety Disorder in this population. The purpose of the present study is to fill this assessment dearth. A measure entitled the Counseling Older Adult Anxiety Inventory (COAAI) was developed based upon descriptions of older adult anxiety that appeared in the research literature. An expert panel reviewed the items of this measure and made suggested revisions. After these revisions, the measure was submitted for reliability and factor studies. Results indicated that the measure had .74 internal consistency and was possessed at least a bidimensional factor structure.


*Keywords*: factor structure, anxiety, GAD, gerontology, older adult anxiety, confirmatory factor analysis

# Development of a Measure to Assess Counselor Knowledge of the Age-Specific Features of Generalized Anxiety Disorder in Older Adults

The proportion of older adults in the United States, defined as individuals aged 65 and older, has increased dramatically in recent years, making up almost 20% of the population in 2010 (Federal Interagency Forum on Aging-Related Statistics, 2008). It is estimated that this population will reach 70 million by 2030 (U.S. Administration on Aging, 2003) as the baby boomers reach older adulthood. The baby boomer generation will constitute more than 40% of the nation's population by 2015, the largest generational cohort in U.S. history (American Association of Retired Persons [AARP], 2002).

As the older adult population increases, mental health problems among older adults in the United States will also rise, affecting an estimated 15 million (NIMH, 2006). It is estimated that 7% (Gum, King-Kallimania, & Kohn, 2009)to20% (Alwahhabi, 2003)of this population meet diagnostic criteria for generalized anxiety disorder (GAD). The aging population lives longer due to healthcare advances (Huppert & Walther, 2007; Koven, Shere-Neiger, & Edelstein, 2007)and is more receptive to obtaining mental health services (Myers & Harper, 2004). Thus the demand for counselors with knowledge of older adult anxiety is expected to increase (Maples & Abney, 2006; APA, 2000).

Because of the unique aspects of the experience and presentation of older adult anxiety, counselors must understand the age-specific features to better assess and treat this population. According to researchers, older adult GAD presents differently than in younger populations (Alwahhabi, 2003; Bassil et al., 2011; Flint, 2005; Katon et al., 2007; Roux et al., 2005; Ruscio et al., 2007; Wolitzsky-Taylor et al., 2010). The majority

of the literature recognizes older adult GAD as a significant and distressful disorder, although counselors' understanding and recognition of such age-specific features is limited (Bryant et al., 2008; Edelstein et al., 2008; Fuenes & Cox, 2000).

Key findings in the literature include the following: (a) the prevalence of older adult GAD continues to rise despite the under-diagnosis of distressful subthreshold symptoms; (b) risk factors for older adult GAD include being female, isolation, low socioeconomic status, as well as a significant change in medical condition, loss of functional ability, and/or cognitive decline; (c) older adults worry about different and more differentiated topics than younger adults; (d) older adults emotionally experience negative events differently and respond with less physical intensity than to younger adults; (e) anxiety is commonly expressed by older adults through somatic, medical, and/or physical symptoms such as pain, gastrointestinal (GI) distress, headaches, cardiovascular complaints, pain, and fatigue; (f) medications that can mask, increase, or decrease anxiety presentation in older adults; and (g) the increased number of comorbid disorders among older adults further complicates the distinguishing features of GAD.

Counselors must have knowledge of the age-specific features of older adult anxiety since the likelihood that they will treat older adults will only increase. Currently, older adult issues are given minimal time in graduate programs, where even less attention is paid to the specific features of older adult anxiety (Myers & Harper, 2004; Olsen, 2003; Wesley, 2005). Recent studies suggest that many counselor education, clinical psychology, and counseling psychology programs across the country are remiss in training students to meet the needs of aging adults (Myers & Harper, 2004; Schwiebert & Myers& Dice, 2000). The professional literature in social work and psychology contain

the majority of research concerning assessment and knowledge of older adult issues. The counseling field has produced minimal research on older adult issues and virtually no research on the assessment of counselor knowledge concerning the age-specific features of anxiety in older adults.

Counseling students interested in providing services to older adults find little information on older adult issues in their texts and other resource materials (Foster, Krieder & Waugh, 2009). Few faculty members are trained or have an interest in teaching and mentoring students who are drawn to learning more about older adults, which naturally results in fewer age-related class offerings (Gilje & Moore, 2007).Foster et al. (2009) surveyed 385 counseling students from six universities nationwide regarding issues related to gerocounseling, including how prepared they felt to work with older adults and whether they would participate in specialized training. The researchers found that counseling students were willing to participate in such training, with about half (42%)feeling "somewhat" prepared to work with older adult assessment issues given their current level of training. This percentage dropped as gerocounseling services became more specialized. The majority of students felt that assessment issues were "very important," and 96% felt that specialized training is necessary to work competently in this area. Students also reported willingness to engage in coursework (61%), workshops (71%), self-study (50%), conferences (66%), and clinical supervision (64%) to improve their knowledge and skills related to gerocounseling issues. Forty percent stated that they would take additional classes to complete a specialization in this area if one were offered.

The professional literature dedicated to gerontology standards in counseling attests to the importance and growing demand for competency in counselors serving older

adults (APA, 2004; Cummings et al., 2003). Competency is generally defined as the qualities, skills, knowledge, and attitudes of practitioners to work with clients effectively. Competency in the counseling profession has been determined according to standards established by organizations over the last 20 years. The American Counseling Association (ACA) requires counselors to have appropriate education, training, specific expertise, and supervision experience before working in a new specialty area (ACA, 2005).To address this issue, the ACA has conducted five national projects focusing on counselor preparation in gerontological issues to develop models and resources for training counselors to work with older persons.

The most prominent results of these national projects include a recommended set of gerontological competencies for counseling. The Association for Counselor Educators and Supervisors (ACES) and Adult Development and Aging interest network (ADA) further developed these standards to guide counselor educators in developing curriculum and practitioners in determining areas of competence for counseling older persons (Myers & Schweibert, 1996). Included in these competency areas were 10 generic competencies and 16 specialty competencies that a counselor must demonstrate in order to meet minimum "competency" in gerocounseling.

The National Board of Certified Counselors (NBCC) conducted an older but still relevant survey of 1,700 members of the ADA (Myers & Schwiebert, 1996). The areas surveyed included respondents' self-assessment in each of the minimal essential gerontological competencies. Results demonstrated that 51% assessed themselves as competent gerontological counselors; 81% of respondents thought training should be

required; and 70% thought experience should be a prerequisite for working with older adults.

Although counselors want and need more training in older adult issues, the age-specific features of older adult GAD are seldom emphasized in counseling training programs(Myers & Harper, 2004; Lee & Waites, 2006; Quall et al., 2002). Most important, the research indicates the continued need for competent counselor knowledge of older adults' issues. If the counseling profession is to prepare students to work competently with older adults, especially in the area of anxiety, more and perhaps different training is needed (Gross & Eshbaugh, 2011; Myers & Schwiebert, 1996; Rosen & Zlotnik, 2001).While a review of the literature clearly demonstrates the need for counselors who are knowledgeable about the age-specific features of GAD, there is currently no means of assessing this knowledge. To address this gap, we developed a measure entitled the Counseling Older Adult Anxiety Inventory (COAAI). After development of this measure, we submitted its items to expert panel review. After item development and expert panel review, the measure was administered to a group of professional mental health counselors. The purpose of this study was to determine the factor structure of the COAAI.

This study aimed to address the following research question: "Can an unidimensional measure of counselor knowledge of age-specific features of anxiety in older adults be developed?"Our specific hypothesis was:

$H_1$: The COAAI presented a unidimensional factor structure.

# Methods

## Participants

The COAAI measure was administered to 100 mental health counselors recruited from several community mental health agencies in Oregon. The reason for 100 participants was because 100 was the minimum number needed given the length of the COAAI. Specifically, five participants per item is needed (Dunteman, 1989; Thomas, 2004). Table 1 contains the demographic information about the participants.

## Measure

**Item development.** The development of the COAAI comes from extensive research in the field of older adult anxiety and is in accordance with counseling gerontology competencies (Myers, 1992). The measure assesses knowledge of the following age-specific features: (a) prevalence rates of GAD, (b) risk factors associated with GAD, (c) content of worry with GAD, (d) emotional experience of GAD, (d) physical and somatic symptomatology, (e) medical influences, and (f) effects of comorbid disorders.

All items on the COAAI were presented in four-option multiple-choice format. Questions 1 and 2 assess counselors' knowledge of older adult anxiety prevalence rates. Questions 4 and 5 assess clinical knowledge of risk factors associated with older adult anxiety. Questions 6 and 7 assess knowledge related to the content of older adult worry. Questions 3, 8, 9, and 12 assess knowledge concerning the emotional experience of older adult worry. Questions 8, 10, 11, and 13 assess knowledge about somatic and physical symptoms of older adult anxiety. Questions 14, 16, 17, and 18 assess knowledge of medical influences on older adult anxiety. Questions 15, 19, and 20 assess knowledge of

the effects of comorbidity on older adult anxiety. The complete text for question and multiple choice responses can be found in the appendix.

**Expert Review**. The COAAI was submitted to several mental health counselors with experience working with older adult anxiety from community listerserves for initial question and item clarification. Feedback and revisions concerning wording, readability, instructions, layout, question clarification and general comprehension were included in the first draft of the measure. Subject experts were then identified, contacted, and invited to provide further feedback on the appropriateness of the COAAI's content. Experts were identified based on credibility and published research on age-specific features of older adult anxiety. The experts were asked to determine how appropriate the 20 COAAI questions were as measures of universal knowledge of age-specific features of older adult anxiety. They also offered feedback for further item clarification, focusing on content and how well the measure represents the features of older adult anxiety. This process increased content and construct validity and allowed the researchers to make additional changes before administering the COAAI to counselors.

**Procedures**

After researching the age-specific features of older adult anxiety, we developed the COAAI and submitted the measure to a sample of mental health clinicians for item clarification and to a panel of experts in the field for content review. After all revisions were integrated into the COAAI, we recruited participants through e-mail and listserv systems. Participants were either e-mailed or sent the COAAI with a consent form and initial appeal letter explaining the purpose, scope, and importance of the study. A reminder letter and second and third appeal letters were also sent via Dillman's Total

Design Method (Hoddinott & Bass, 1986) to increase participant response. This method uses a series of letters to emphasize the importance of the study to participant, their clients and the counseling profession to enhance personal investment. Once 100 completed measures were received, they were submitted for statistical analysis to examine the reliability and factor structure of the measure.

## Data Analysis

**Factor Structure.** The researchers conducted an exploratory factor analysis (EFA) of the measure to test our hypothesis that all 20 questions of the COAAI would load into one factor called "features of older adult anxiety." A basic assumption of EFA is that, within a collection of observed variables, there exists a set of underlying factors, smaller in number than the observed variables, that can explain the interrelationships among those variables (Kim & Muller, 1979). EFA is the most commonly used form of factor analysis in the social sciences and was used instead of confirmatory factor analysis because the researchers did not know how may factors were necessary to explain the interrelationships and because literature on the topic is limited (Stevens, 1996). The score for each item (i.e., correct or not correct) was used for reliability and factor structure analyses (Hall, Jung & Pilant, 2012; Roykov & Marcoulides, 2011).

**Reliability.** To determine the overall internal consistency of the measure we used Cronbach's alpha (Bland & Altman, 1997). The Cronbach's alpha was used over the KR-20 as it also deals with dichotomous data (Hall, Jung & Pilant, 2012)and is a more widely used and accepted measure of internal consistency (Cronbach, 1951; Cronbach, 1984).

# Results

## Factor Structure

An exploratory factor analysis of the measure was conducted using the principal component analysis (PCA) extraction method. PCA is a statistical method used to reduce data into a broader number of dimensions and identify meaningful underlying variables while retaining as much variance as possible (Dunteman, 1989; Thomas, 2003). PCA was conducted on the 20 COAAI items to determine if one component could represent the underlying dimension of the COAAI.

Initial results revealed that the COAAI had a factor structure of seven. These seven components consisted of 60.887% of the total variance. The first component consisted of items 4, 7, 8, 11, 12, 13, 14, 16, 17, 18, 19 and 20. This component accounted for 18.778% of the total variance (eigenvalue = 3.756). The second component consisted of items 2, 3, 5, and 10 and accounted for 9.826% of the total variance (eigenvalue = 1.965). The third component included item 9 and accounted for 8.359% of the total variance (eigenvalue = 1.672).The fourth component included item 1 and accounted for 7.255% of the total variance (eigenvalue = 1.451).The fifth component included item 15 and accounted for 5.882% of the total variance (eigenvalue = 1.176).The sixth component included item 6 and accounted for 5.748% of the total variance (eigenvalue = 1.150). The seventh component (which did not include a measure item) accounted for 5.037% of the total variance (eigenvalue = 1.007). Although this component did not contain any question items, it was retained per the eigenvalue one (Kaiser, 1960) and scree test (Dunteman, 1989)techniques. See Table 2 for specific item factor loadings.

The decision to retain seven components was guided by the eigenvalue-one criterion, the most commonly used criterion for determining the number of components to retain (Kaiser, 1960; Dunteman, 1989). According to this approach, any component with an eigenvalue greater than one is retained and interpreted. This criterion often results in retaining the correct number of variables, particularly when less than 30 variables are being analyzed (Stevens, 1986). Results indicated that an overall reliable measure of the COAAI can be developed and that the factor structure of the COAAI as at least bidimensional. This supports a reliable measure to assess counselor knowledge of older adult GAD can be developed, but it *does not* support our hypothesis that it can be developed with a unidimensional factor structure.

### Reliability

The overall internal consistency of the COAAI was .74.

## Discussion

### Interpretation of Results

The purpose of the present study was first to develop a measure to assess counselor knowledge of the age-specific features of older adult anxiety. The hypothesis that the measure would present a unidimensional factor structure *was not* supported since seven components were found to underlie the COAAI. The eigenvalue-one criterion is only one method to consider when determined the number of factors to retain using a PCA. Other factors include the scree test, proportion of variance accounted for, and interpretability criteria.

When factoring in the proportion of variance accounted for, the number of components was still seven when retaining components that account for at least 5% of the

total variance. When retaining components that account for 10% or more of the total variance, two components were retained (18.778; 9.826). Another way to retain components under this method is to retain enough components so the cumulative percent of variance is 70%. Using this method, we would suggest nine components be retained, for 69.842%. These researchers choose not to retain components based on 70% cumulative variance since this would have included eigenvalues of 4%, which is not recommended for strong interpretability and in this study did not provide the best solution.

The interpretability criterion is another PCA method, arguably one of the most important, to consider when choosing which components make the most sense for the constructs under investigation. This method is used to interpret the meaning behind the data results in conjunction with other methods (Thompson 2004; Dunteman, 1986). Applying this method to our data results suggests eigenvalues just above or below the 1.00 cut-off should be considered and interpreted carefully for how they may enhance or better interpret the data and construct under study. Deciding not to retain Components 5 (eigenvalue = 1.176), 6 (eigenvalue = 1.150) or 7 (eigenvalue = 1.007) or deciding to include Component 8 (eigenvalue = .951)—given their close relation to 1.00—may provide a more suitable interpretation of the data. In this study, it appears that not retaining component 5, 6, 7, or 8 could better account for what is known about older adult GAD from the literature.

After reviewing how each of the 20 COAAI items loaded in the component matrix, the COAAI questions that loaded highest into Component 1 included questions that could be summarized as "physical and medical influences of older adult GAD."

COAAI questions that loaded highest into Component 2 comprised questions that could be summarized as "clinical presentation and experience of older adult GAD."

In addition, although questions 9, 1, 15, and 6 did not load *highest* on component 1 or 2 (9 into 3; 1 into 4; 15 into 5; 6 into 6), they did positively load, with a sufficient factor loading of .30–.40 (used because of smaller sample size), into either Component 1 or 2. For example, Question 1 loaded highest into Component 4 but was also within .04 of being accounted for under Component 2. This question was also related to "presentation and experience of older adult GAD." Question 6, which loaded highest into component 6, was within .16 of loading into Component 2. This question was also related to "presentation and experience of older adult GAD." Question 15, which loaded highest on Component 5, is within .07 of being accounted for under component 1 and is related to "physical/medical influences of older adult GAD." This suggested that the measure items are related, to some degree, more to these first two components than the others. Question 9, which loaded highest on component 3, was within .40 of being loaded into component 1, but did not seem to fit under "physical/medical influences of older adult GAD." A component with fewer than 3 items is generally considered weak or unstable, so interpreting these items in the first two components would increase the stability of the interpreted solution (Costello & Osburne, 2005).

Interpreting the data with interpretability criteria also suggested that 19 of the20 COAAI questions could be factored into two components: physical &medical influences of older adult GAD; clinical presentation and experience of older adult GAD. Interpreting the data using the proportion of variance accounted for (with a 10% cut-off) and using a scree plot also supports retaining two components. Interpreting the data with an

eigenvalue-one criterion, however, increases components retained, assuming the data can be best interpreted with somewhere between two and seven factors. With the exception of Question 9—which, it has been suggested, should be revised, replaced, or deleted—an interpretation of the solution between two and seven factors also makes most sense given findings on the topic in the literature.

Further analyzing the data into a two-component solution also suggests all factors can be accounted for under Component 1 or Component 2. In this analysis, Component 1 retains items 4,7,8,9,11,12,13,14,15,16,17,18,19,20. Component 2 retains items 1,2,3,5,6,10. See table 3 for results. The addition of a two-component analysis raises the internal consistency of Component 1 to .759 but lowers the internal consistency of Component 2 to .561. These finding suggest that while Component 1 & Component 2 may best explain the factor solution, Component 2 needs further validation.

The researchers also interpreted the number of COAAI correct responses as a factor in understanding the degree of difficulty of measure items. Results indicate a mean score of 12.34 with a standard deviation of 3.901. The measure's scores represent a distribution that is slightly negatively skewed suggesting more participants did slightly better than the mean score of 12.34. See figure 1 for distributions of scores. The items in component 1 & 2 are of equal difficulty suggesting no evidence of differences between ease of content. The items that indicate the most difficulty include item 10 of component 2 (46 % correct), item 1 of component 2 (38% correct) and item 15 of component 1 indicating the most difficulty at 36% correct. The items that indicate the least difficulty include item 3 of component 2 (77 % correct), item 18 of component 1 ( 75% correct) and item 11 of component 1 indicating the least difficulty at 83% correct. The items of

the most and least difficulty were eventually distributed between Component 1 and Component 2 further suggesting little difference in difficulty between factors.

The overall interpretation of the data, therefore, assumes the factor structure of the COAAI is not unidimensional but at least bidimensional. The hypothesis that the COAAI had a unidimensional factor structure was not supported, even when other methods of interpretability criteria& scree test were factored in. It is possible that further analysis, may produce stronger results in reducing the dimensionality of the COAAI from seven factors to two. Additional varimax rotations were not included in this study since we only sought to answer the question of unidimensionality. The data results, while promising for a dual factor structure, did not indicate or suggest that factor rotations would produce a unidimensional factor structure.

**Limitations**

**Factor Analysis Method.** This study relied on the eigenvalue-one criterion, scree test and the interpretability criterion to determine the most appropriate number of components to retain. These are the most common criterions in the social sciences for determining number of components to retain, but is easily under interpreted. However, conducting additional varimax rotations over multiple solutions would allow different factors to be tested among different items, helping to determine which solution is most interpretable or accounts for the most variance.

**Length of Measure**. The COAAI includes few items to account for each component. This paucity of items for each component minimize the opportunity to re-work and better account for the data. We were unable to delete items with lower factor loadings since we had only used 20 items. If this study had been larger and had more

initial COAAI items, items could have been rotated under different factor solutions and would have been able to provide more depth and understanding of how factors are interrelated and which account for the most variance.

**Lack of Pilot Study**. The research also was limited by not conducting a pilot prior to the larger study, bypassing the chance to obtain informative preliminary data. Use of a pilot study would have determined whether more subjects were needed for increased reliability, a more diverse sample was warranted for stronger validity, and how the COAAI items interrelated or could have been refined for more interpretable and accurate data.

Although steps were taken during item development to ensure construct, content, and face validity (i.e., review of items by experts and mental health clinicians), other aspects of validity, such as criterion and convergent validity, were not and/orcannot be assessed. The development of a measure to assess knowledge about older adult anxiety is further complicated by the limited conceptual and empirical foundations of how older adult anxiety is different from younger adult anxiety in mainstream and academic settings. With more research surfacing in which the current diagnostic criteria do not account for all features of older adult anxiety, it may be easier to establish convergent validity for the COAAI.

**Narrow Demographic Profile of the Participants**. Study participants were predominantly of Caucasian/European American and Hispanic/ Latino. No participants who identified as American Indian/Alaska native, Black/African American, or Hawaiian/Pacific Islander. This limitation weakens the external validity of data results to other settings and locations.

Research participants also came from county agencies, which provide minimal coverage to hospitals, long-term care facilities, VA medical centers, and other settings where older adults adults currently receive the majority of services, impeding the generalization of participant results to settings where they are most applicable. In addition to the demographics of participants, this study had only 100 subjects. Although 100 participants meets minimally accepted standards, a larger sample would yield stronger results.

**Implications for Researchers**

The current study serves as a springboard for researchers in gerontology and gerocounseling to better understand the dimensions inherent in assessing counselor knowledge of age-specific features of older adult GAD. Understanding the COAAI and age-specific features of older adult anxiety as at least bidimensional, researchers are better informed as to the direction in which further factor analysis of these components can be conducted and interpreted. Because this study was a first exploration of the development and factor structure of the COAAI, researchers can move forward with a greater understanding of factors that account for item variance and replace items that did not demonstrate a strong factor loading with items that more closely represent the factor being investigated. Stronger, more concise data can be derived by using this study as a foundation for future studies.

In addition, further developing a reliable measurement tool to assess counselor understanding of the age-specific features of older adult anxiety provides researchers with information to begin creating assessment standards for competencies in this area.

The development of such a measurement tool will move the field closer to understanding whether counselors possess adequate knowledge.

**Implications for Counselor Educators and Supervisors**

The continued development and validation of the COAAI could measure and assess counselor readiness to work with older adult anxiety, as well as areas that need more application, experience, or understanding. Knowledge of counselors' understanding of older adult anxiety can help identify opportunities for professional development and improve competence in a growing area of need. Understanding the features of older adult anxiety can inform educators' curricula to better prepare students interested in working with older adults.

Understanding the age-specific features of older adult anxiety as at least bidimensional and how these features can better inform assessment and treatment techniques. It can also inform counselor educators of the complexity of these features and encourage more specialized teaching approaches for those interested in working with older adults' anxiety. A general understanding of the factors and features of older adult anxiety among counselor educators will enhance student learning and guide application of this understanding in clinical work.

Gerontology programs and associations devoted to older adult issues could also use a more developed and validated version of the COAAI as one standard by which competence in this area is evaluated. According to researchers, practitioners working with older adults should be measured against a standard of knowledge of older adult issues (APA, 2010; Molinari et al., 2003; Quall et al., 2002; Myers & Schwiebert, 1996). As the NBCC gerontological competencies do not indicate these standards, a better

development and validated COAAI could serve as an assessment tool for measuring knowledge of older adult anxiety. The COAAI should be supplemented, however, by other measures of competency such as clinical skill, experience, and clinical outcomes to more accurately assess ones understanding and competency of older adult anxiety older adult.

## Summary

The outcome of this preliminary study on the development and factor structure of a measure to assess counselor knowledge on the age-specific features of GAD found the COAAI to have a factor structure of at least bidimensionality. This was determined using an EFA with a PCA extraction method. Further analysis of techniques using the eigenvalue-one criterion, scree test and the interpretability factor found sixteen out of the 20 COAAI questions loaded on either Component 1, related to "physical/medical influences of older adult GAD" or Component 2, related to "presentation and experience of older adult GAD." The other four questions fell into their own components, though they could also be factored into either Component 1 or 2 when using a .03 cut-off for significance. With the exception of one question, all others could also be interpreted correctly according to one of these two components. A two-component analysis further supported that two components could account for all measure items though Component 2 did not yield significant reliability. The insignificant reliability of Component 2 indicates more validity studies need to be performed before assuming bi-dimensionality with confidence.

Subsequent factor analysis is needed to confirm a stronger, more reliable factor structure and to determine what number of factors is best for the COAAI, given the best

interpreted solution. Further development of the measure could mean replacing low factor loading items with items that more closely account for construct features. More research is also needed to provide valid data for the use of COAAI and to further understand its factor structure. Therefore, this study provides preliminary data that may fill the need for a reliable measure to assess counselor knowledge of the age-specific features of older adult anxiety. This development may in turn encourage a means by which gerontology standards could be standardized to assess competency in older adult anxiety features.

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Table 1

*Participant Demographic Information*

| Variable | Characteristics | total (n= 100) |
|---|---|---|
| Gender | Male | 35 (35%) |
| | Female | 65 (65%) |
| Ethnicity | White/European | 76 (76%) |
| | Hispanic/Latino | 20 (20%) |
| | Black/African American | 0 (0%) |
| | Asian/Asian American | 3 (3%) |
| | Hawaiian/Pacific Islander | 0 (0%) |
| | American Indian/Alaska Native | 0 (0%) |
| | Other | 1 (1%) |
| Age | 21 or younger | 3 (3%) |
| | 22-30 | 38 (38%) |
| | 31-45 | 45 (45%) |
| | 45-60 | 14 (14%) |
| | 61 or older | 0 (0%) |
| Years experience as a counselor | less than 5 | 31 (31%) |
| | 5-10 | 38 (38%) |
| | 11-15 | 27 (27%) |
| | 16-20 | 4 (4%) |
| | 21+ | 0 (0%) |
| Years experience with older adults | less than 5 | 36 (36%) |
| | 5-10 | 37 (37%) |
| | 11-20 | 24 (24%) |
| | 21+ | 3 (3%) |
| Hours of diagnostic Training | 0-30 | 23 (23%) |
| | 31-50 | 47 (47%) |
| | 51-70 | 29 (29%) |
| | 71+ | 1 (1%) |
| Hours of training in older adult Issues | 1-30 | 96 (96%) |
| | 31-50 | 4 (4%) |
| | 51-70 | 0 (0%) |
| | 71+ | 0 (0%) |

Table 2

*Factor Analysis Results*

| # | Text | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| 1 | How common is GAD in older adults? | 0.181 | 0.482 | 0.200 | **0.522** | 0.287 | -0.193 | 0.191 |
| 2 | Which of the following is NOT a reason for variances in prevalence rates among older adults with GAD? | 0.320 | **0.521** | -0.346 | 0.201 | 0.253 | 0.108 | -0.077 |
| 3 | How does GAD affect older adults? | 0.303 | **0.506** | -0.037 | 0.050 | -0.161 | 0.270 | 0.092 |
| 4 | What are the most common risk factors associated with older-adult GAD? | **0.609** | 0.155 | -0.175 | 0.081 | -0.070 | -0.169 | -0.096 |
| 5 | What are older adults with GAD four times likelier to experience than younger adults? | 0.017 | **0.628** | 0.262 | -0.140 | -0.123 | 0.160 | 0.104 |
| 6 | What do older adults with GAD worry more about than younger adults with GAD? | 0.196 | 0.326 | 0.243 | 0.279 | 0.068 | **0.487** | -0.302 |
| 7 | What statement best describes older-adult GAD? | **0.386** | 0.144 | 0.179 | -0.610 | -0.121 | -0.053 | -0.150 |
| 8 | What are the most common physical manifestation of older-adult GAD? | **0.511** | -0.119 | 0.336 | -0.241 | 0.113 | -0.190 | -0.124 |
| 9 | How do older adults differ from younger adults in their emotional experience of anxiety? | 0.293 | -0.003 | **0.695** | -0.089 | -0.043 | 0.131 | 0.355 |
| 10 | How do older adults differ from younger adults in their physical response to anxiety? | 0.311 | **0.455** | -0.348 | -0.460 | 0.162 | -0.217 | 0.173 |
| 11 | Which of the following is a barrier in differentiating physical conditions from older-adult GAD? | **0.558** | 0.010 | -0.347 | 0.129 | -0.285 | -0.243 | 0.261 |
| 12 | Which of the following statements is true regarding older-adult GAD symptoms? | **0.460** | 0.184 | 0.145 | -0.110 | -0.016 | -0.192 | -0.536 |
| 13 | Which of the following somatic symptoms is the most common and has the strongest correlation to GAD in older adults? | **0.508** | 0.001 | 0.296 | 0.171 | -0.499 | -0.269 | 0.060 |
| 14 | What percent of adult 65+ have a least one chronic medical condition? | **0.405** | -0.255 | 0.208 | -0.042 | 0.368 | 0.227 | 0.242 |
| 15 | What is the difference between early onset and late onset of GAD? | 0.458 | -0.201 | 0.108 | 0.169 | **0.535** | -0.357 | 0.126 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 16 | What is the influence of medications on the presentation of older-adult anxiety? | **0.490** | -0.242 | -0.091 | -0.278 | 0.070 | 0.440 | 0.184 |
| 17 | What percentage of adults 65 or older take at least two medications per day? | **0.335** | -0.171 | -0.324 | 0.287 | -0.312 | 0.172 | 0.133 |
| 18 | What class of medications used to treat older-adult GAD has the greatest debilitating side effects for this population? | **0.643** | -0.271 | 0.092 | 0.188 | -0.207 | 0.070 | 0.037 |
| 19 | Older-adult GAD is most commonly associated with which disorder? | **0.510** | -0.346 | 0.008 | 0.241 | 0.091 | 0.118 | -0.407 |
| 20 | What comorbid disorders present the most debilitating effects for older adults with GAD? | **0.589** | -0.137 | -0.446 | -0.203 | 0.138 | 0.210 | 0.010 |
| | Eigenvalue | 3.756 | 1.965 | 1.672 | 1.451 | 1.176 | 1.150 | 1.007 |
| | Variance | 18.778 | 9.826 | 8.359 | 7.255 | 5.882 | 5.748 | 5.037 |

*Table 3*

*Two-component Analysis*

| | Component | |
|---|---|---|
| | 1 | 2 |
| Item 1 | .181 | .482 |
| Item 2 | .320 | .521 |
| Item 3 | .303 | .506 |
| Item 4 | .609 | .155 |
| Item 5 | .017 | .628 |
| Item 6 | .196 | .326 |
| Item 7 | .386 | .144 |
| Item 8 | .511 | -.119 |
| Item 9 | .293 | -.003 |
| Item 10 | .311 | .455 |
| Item 11 | .558 | .010 |
| Item 12 | .460 | .184 |
| Item 13 | .508 | .001 |
| Item 14 | .405 | -.255 |
| Item 15 | .458 | -.201 |
| Item 16 | .490 | -.242 |
| Item 17 | .335 | -.171 |

| | | |
|---|---|---|
| Item 18 | .643 | -.271 |
| Item 19 | .510 | -.346 |
| Item 20 | .589 | -.137 |

*Table 4*

*Distribution of scores*

| | scores | |
|---|---|---|
| Item | frequency | percent |
| 1 | 0 | 0.00 |
| 2 | 2 | 0.02 |
| 3 | 1 | 0.01 |
| 4 | 2 | 0.02 |
| 5 | 0 | 0.00 |
| 6 | 4 | 0.04 |
| 7 | 1 | 0.01 |
| 8 | 4 | 0.04 |
| 9 | 7 | 0.07 |
| 10 | 5 | 0.05 |
| 11 | 10 | 0.10 |
| 12 | 17 | 0.17 |
| 13 | 9 | 0.09 |
| 14 | 9 | 0.09 |
| 15 | 9 | 0.09 |
| 16 | 6 | 0.06 |
| 17 | 6 | 0.06 |
| 18 | 2 | 0.02 |
| 19 | 3 | 0.03 |
| 20 | 3 | 0.03 |
| Total | 100 | 1.00 |

# CHAPTER IV

## GENERAL CONCLUSION

This dissertation included two thematically linked manuscripts in its examination of the age-specific features of older adult anxiety. The review of the literature identified multiple factors to consider when understanding, diagnosing, assessing, and treating older adult anxiety. The review also revealed an absence of measures or research for assessing counselors' knowledge of the age-specific features of older adult anxiety. Yet the older adult population continues to grow at an ever-increasing rate, lives longer, and has become more open to receiving mental health services (Maples & Abney, 2006; Myers & Harper, 2004; APA, 2010; Olfsen & Gameroff, 2007; Molham& Price, 2006; Quall et al., 2002; Streiner et al., 2006 ). The prevalence of older adult anxiety also continues to grow (Alwahhabi, 2003; Gum et al., 2009; Kessler et al., 2005; APA, 2009; Mendlowicz & Stein, 2000; Lenze et al., 2001). Mental health clinicians are called upon to understand and demonstrate competency in this area (Weiss et al., 2009; Myers & Harper, 2004; Maples & Abney, 2006; APA, 2002, 2012).

Few studies look at counselor knowledge of the age-specific features of older adults' mental health issues (Stickle & Onedera, 2006; Foster et al., 2009; Myers & Schwiebert, 1996), and none to date address how to empirically assess knowledge of older adult anxiety. In comparison to younger adults, the research literature does not recognize factors that influence symptomatology and clinical presentation of anxiety in older adults. The goal of this dissertation, therefore, was address this limitation by developing a measure, entitled the Counseling Older Adult Anxiety Inventory (COAAI), to assess counselor knowledge of older adult anxiety, and also determine its reliability

and factor structure. This study offers the field of counseling and gerontology a means of measuring this knowledge. This research advances gerontology one step in understanding the features of older adult anxiety and encouraging counselors to better meet the complex and unique needs of older adults who experience anxiety. The initial evaluation of the COAAI demonstrated that it has an overall adequate reliability (α= .74), with a subscale reliability for Component 1 of .759 and reliability of .561 for Component 2. The evaluation *did not* support our hypothesis that the COAAI has a single dimension. The structure was found to include seven factors, though this could possibly be reduced to two with further data analysis and validity. Although the authors have demonstrated reason for supporting the COAAI, it must be further developed and validated before utilizing the measure widely with confidence. This study establishes a place to begin further testing and development.

**Recommendations for Future Research**

The researchers recommend that future research subject the data to additional exploratory factor analysis using multiple varimax-rotation solutions to determine how the COAAI could be revised or changed to better account for all items with fewer factors. Repeated rotations among different factors would help the data better account for low factor loadings of items that do not seem to fit existing factors. Additionally, the COAAI should be validated for convergent validity. Currently this is difficult because there are no measures with which to compare COAAI items outside the research already integrated into the COAAI. However, reliability can be further tested by using test-retest among the same or a similar sample and comparing coefficients.

The researchers recommend integrating the Angoff method after further validation of the COAAI to determine a cut-off, or passing score, at which competency in the age-specific features of older adult anxiety could be standardized. The Angoff method uses a panel of expert judges or subject experts to review the COAAI and provide expertise as to the probability that a "borderline candidate" will answer each question correctly. Their goal is to set a subjective criterion of knowledge that will be used to determine counselor competency in the area of older adult anxiety (Downing, 2006). This cut-off determination would be represented by an overall percentage (e.g., 72%). The Angoff method will help researchers to identify the least amount of knowledge acceptable to be considered a competent counselor.

It is also suggested the COAAI's validity be further developed by giving the COAAI to an expert panel and mental health counselors to determine differences in test outcomes. These results would better inform expectations and standards among the COAAI.

With the research literature supporting the various factors that influence older adult anxiety and the differences in how such anxiety is expressed, this dissertation has implications for counselors and counselor educators in understanding, assessing, treating, and teaching about older adult anxiety. As research on this topic begins to appear in textbooks, research journals, and clinical settings, counselors in the years to come will be better prepared to address the increasing prevalence of older adult anxiety.

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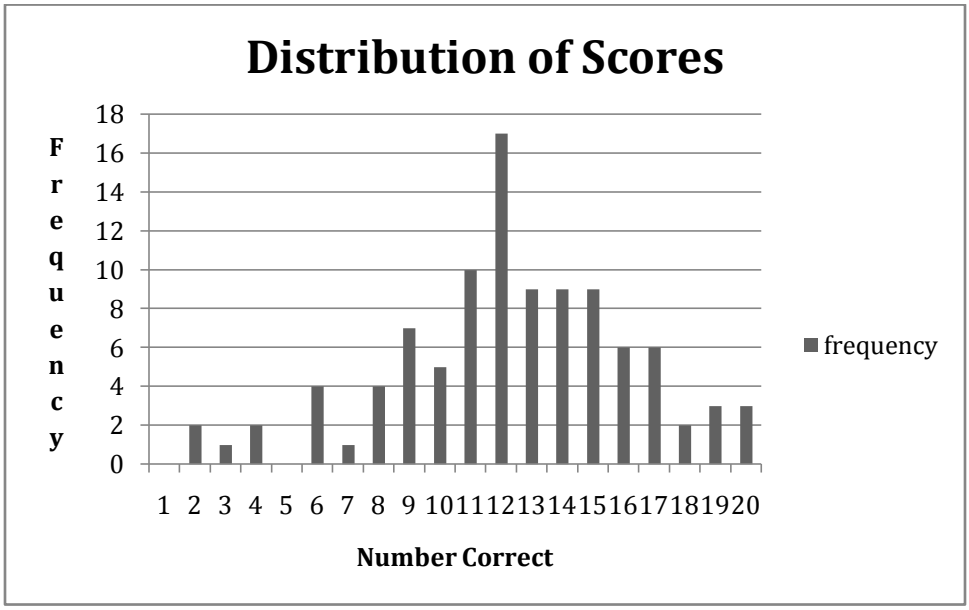
Figure 2

*Distribution of scores*



# APPENDIX

# APPENDIX A

# Submission Target For Manuscript 1

## Manuscript 1: A Literature Review on the Age-Specific Features of Older Adult Anxiety

My goal is to submit a literature review article titled "A Literature Review on the Age-Specific Features of Older Adult Anxiety" to *The American Journal of Geriatric Psychiatry*. *The American Journal of Geriatric Psychiatry*, the authoritative source of information for the rapidly developing field of geriatric psychiatry, ranks eighth among 31 geriatric/gerontology journals (*American Journal of Geriatric Psychiatry*, 2012). The aim and scope of the journal is to publish "peer-reviewed articles on the diagnosis and classification of psychiatric disorders of later life, epidemiological and biological correlates of mental health of older adults, and psychopharmacology and other somatic treatments" (*American Journal of Geriatric Psychiatry*, 2012).

The literature review article on the age-specific features of older adult anxiety summarizes research findings related to the following:(a) prevalence rates, (b) risk factors, (c) content of worry and emotional experience, (d) physical and somatic symptomology, (e) influence of medical disorders and medications, and (f) effects of comorbid disorders. This article further addresses how these features influence the diagnosis and classification of older adult anxiety, which falls succinctly into the scope of this journal.

# Submission Target For Manuscript 2

## Manuscript 2: Development and Factor Structure of a Measure to Assess Counselor Knowledge of the Age-Specific Feature of Generalized Anxiety Disorder in Older Adults

My goal is to submit a research article titled "Development and Factor Structure of a Measure to Assess Counselor Knowledge of the Age-Specific Feature of Generalized Anxiety Disorder in Older Adults" to the journal titled Educational and Psychological Measurement. This peer-reviewed journal focuses on the scholarly work from all academic disciplines interested in the study of measurement theory, problems, and issues. The scope and aim of *Education and Psychological Measurement* is dedicated to theoretical articles that address new developments and techniques, and applied articles that deal strictly with innovation measurement applications (Education and Psychological Measurement, 2012).

The research article "Development and Factor Structure of a Measure to Assess Counselor Knowledge of the Age-Specific Feature of Generalized Anxiety Disorder in Older Adults" seeks to develop and determine the factor structure of a self-constructed inventory titled the Counseling Older Adult Anxiety Inventory (COAAI).The development of a reliable and unidimensional measure to assess counselor knowledge of older adult GAD could move the field closer to understanding if counselors possess competent knowledgeable in this area.

# APPENDIX B

Copy of Informed Consent Form

Dear Participant,

This is a request for your agreement to participate in a dissertation research project conducted by JoselynSalaz, doctoral student at OSU, and Cass Dykeman, Associate Professor of Counseling at OSU. The purpose of this study (titled: Development, Reliability and Factor Structure of a Measure to Assess Counselor Knowledge of the Age-Specific Features of Generalized Anxiety Disorder) is to develop and determine the dimensionality of a measure called the Older Adult Anxiety Inventory. Participants in this study are master's level counselors in the U.S. Northwest. The procedures entail completing a 20-question multiple-choice inventory designed to measure knowledge on the age-specific features of older adult generalized anxiety disorder (GAD) and 7 questions related to participant demographic information. The questionnaire will take approximately 15 minutes to complete.

This study seeks to validate a measure used to assess counselor knowledge in older adult GAD. The potential benefits of this study is to further the development of an assessment measure which will have implications for counseling trainings, academic planning, clinical assessment and treatment. This is an indirect benefit to you the participant. This research is being conducted in partial fulfillment of a doctorate for the student researcher. Foreseeable risks of participation include the remote possibility of transitory minor reminders of frustration of working with anxious clients. Should you find yourself experiencing any psychological discomfort after completing the measure, please contact this national 24-hour hotline for support and appropriate referral: 1-800-273-TALK. In addition, If you choose send your completed measure via e-mail, the security and confidentiality of information collected cannot be guaranteed. Information collected via e-mail can be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses.

The decision to participate in this study is voluntary, and you are free to not complete the measure and withdraw from this study at any time without jeopardizing any relationship you may have with the student researcher or affiliated agencies. Beyond generic demographic data (e.g., age, gender, training background, etc.), no identifying information will be collected. Also, all data collected is only going to be reported in the aggregate, however, there is still a risk that we could accidently disclose information that identifies you Your completion of the measure will constitute your informed consent to participate in this study.

If you have questions about your rights or welfare as a participant, please contact the Oregon State University Institutional Review Board (IRB) Office by phone at (541) 737-8008 or by email at IRB@oregonstate.edu. f you have any questions or concerns specifically about this unfunded research project, please contact Principle Investigator CassDykeman at dykemanc@onid.orst.edu . Thank you very much for your participation!

Sincerely,

Joselyn D. Salaz, MS, NCC, LPC, ACS, Oregon State University, Doctoral Student

# APPENDIX C

Copy of Demographic Questions

Directions: Please respond to the below seven questions below by selecting the multiple-choice item that best describes your answer. If you are receiving and/or submitting this measure electronically, please either highlight or bold your response. These questions are intended to solicit demographic, personal, and professional information for research data.

**1.** How would you describe your racial/ethnic identity?

a. White/European
b. Hispanic/Latino
c. Black / African American
d. Asian / Asian American
e. Hawaiian / Pacific islander
f. American Indian / Alaska native
g. Other

**2.** How do you identify?

a. Male
b. Female
c. Other

**3.** What age group do you fit into?

a. 18-21
b. 22–30
c. 31–45
d. 45–60
e. 61 or older

**4.** How many years have you been a masters level counselor?

a. less than 5 years
b. 5-10 years
c. 11-15 years
d. 16-20 years
e. 21+ years

**5.** How many years of professional experience with adults 65 or older do you have?

a. less than 5 years
b. 5-10 years
c. 11-20 years
d. 21+ years

**6.** How much time have you spent in training around psychopathology or DSM coding?

a. 0-30 hours
b. 31-50 hours
c. 51-70 hours
d. 71+ hours

**7.** Have you had any training in older adult issues or older adult anxiety?

a. 1-30 hours
b. 31-50 hours
c. 51-70 hours
d. 71+ hours

# APPENDIX D

Counseling Older Adult Anxiety Inventory (COAAI)

1. How common is generalized anxiety disorder (GAD) in older adults?

*a. GAD in older adults is twice as common than in younger populations.
b. GAD in older adults is half as common than in younger populations.
c. GAD in older adults is equally as common as in younger populations.
d. GAD in older adults doubles after age 85.

2. Which of the following is NOT a reason for variances in prevalence rates among older adults with GAD?

a. Subthreshold symptoms, though significant, do not meet DSM-IV criteria.
b. Clinicians often overlook medical and physical symptoms of older adults.
*c. Older adults are typically reluctant to share personal medical information when discussing anxiety.
d. Clinicians differ in their assessment of and diagnostic procedures related to GAD.

3. How does GAD affect older adults?

a. The affects of GAD are consistent across the lifespan.
*b. The affects of GAD change across the lifespan.
c. The affects of GAD decrease in severity as one ages
d. The affects of GAD remain fairly consistent after age 65

4. What are the most common risk factors associated with older-adult GAD?

a. family discord and social phobia
b. social phobia and increased health concerns
c. cognitive limitations and family discord
*d. decreased quality of life and decreased functional disability

5. What are older adults with GAD four times likelier to experience than younger adults?

a. physical illnesses
b. language difficulties
*c. cognitive impairment
d. isolation from others

6. What do older adults with GAD worry more about than younger adults with GAD?

*a. health
b. family
c. security
d. finances

7. What statement best describes older-adult GAD?

a. Older adults have a narrower range of worry than younger adults.
*b. Older adults have a wider range of worry than younger adults.
c. Older and younger adults worry about the same issues.
d. Older adults have less control over their worry than younger adults.

8. What are the most common manifestation of older-adult GAD?

a. slowed motor/physical reflexes
*b. somatic symptoms
c. confusion around daily activities
d. family difficulties

9. How do older adults differ from younger adults in their emotional experience of anxiety?

*a. Older adults have a lessened emotional response.
b. Older adults have a more intense emotional response but respond more slowly.
c. Older adults have a longer duration of emotional response.
d. Older adults struggle in cognitively processing emotional experiences.

10. How do older adults differ from younger adults in their physical response to anxiety?

*a. They have a decreased physical response.
b. They have an increased physical response but slower reaction time.
c. They require more sensory input to achieve the same physical reaction.
d. There is no physical difference.

11. Which of the following is a barrier in differentiating physical conditions from older-adult GAD?

a. the assumption that physical conditions are just a normal part of aging
b. lack information about or understanding of clients' medical history
c. the interpretation of physical changes as a result of medical conditions
*d.all of the above

12. Which of the following statements is true regarding older-adult GAD symptoms?

a. Older adults often do not recognize features of anxiety as part of a psychological disorder.
b. Older adults either over report or do not report psychological symptoms.
* c . Older adults often disguise their psychological symptoms to alleviate pain.
d. none of the above

13. Which of the following somatic symptoms is the most common and has the strongest correlation to GAD in older adults?

a. headaches
b. gastrointestinal distress
c. cardiovascular concerns
*d. pain

14. What percent of adult 65+ have a least one chronic medical condition?

a. 40%
*b. 60%
c. 75%
d. 90%

15. What is the difference between early onset and late onset of GAD?

*a. adults and early onset experience significantly more depression than late onset
b. adults with early onset experience loose cognition sooner than late onset
c. adults with late onset experience more functional limitations due to physical problems
d. adults with late onset experience more psychosis and delirium

16. What is the influence of medications on the presentation of older-adult anxiety?

a. Medications exacerbate symptoms of anxiety.
*b. Medications may increase, decrease, or change the expression of anxiety symptoms.
c. Medications numb the body's normal response to stress.
d. Medications, if taken as prescribed, have no effect on anxiety.

17. What percentage of adults 65 or older take at least two medications per day?

a. 40%
b. 60%
*c. 75%
d. over 90%

18. What class of medications used to treat older-adult GAD has the greatest debilitating side effects for this population?

a. anxiolytics
*b. benzodiazepines
c. antidepressants
d. azapirones

19. Older-adult GAD is most commonly associated with which disorder?

a. vascular dementia
b. Alzheimer's
*c. depression

d. mild mental retardation

20. What comorbid disorders present with the most debilitating effects for older adults with anxiety?

a. dementia and other forms of Alzheimer's
b. depression and social phobia
*c. depression and cognitive decline
d. depression and mental retardation

* = correct response

# APPENDIX E

First Appeal Letter

Development, Reliability, and Factor Structure of a Measure to Assess Counselor Knowledge on the Age-Specific Features of Generalized Anxiety Disorder

Principle Researcher: Cass Dykeman, PhD
Student Researcher: JoselynSalaz, LPC

Dear (name),

As the aging population increases, and older adults seek out more mental health services, the demand for counselors with knowledge in older adult anxiety is expected to increase. Research demonstrates that counselors need and want more training in older adult anxiety to increase competence though currently there is no way to measure or assess counselor knowledge in this area. As a counselor of older adults and doctoral student, I am working to research the reliability and factor structure of an inventory designed to assess counselor knowledge of older adult anxiety. My interest in pursing this research comes from my educational understanding and professional experience that older adult anxiety is often misunderstood and/or misdiagnosed due to minimal counseling training in this area. As a counselor working in the current mental health system in the northwest, you are being asked to participate in this research. Your participation will help develop a reliable inventory for assessing counselor knowledge on older adult anxiety. The information from this research will also help further inform training for counselors and improve older adult mental health services.

You can either e-mail me at joselyn0530@yahoo.com or send your competed inventory via interoffice mail to JoselynSalaz. Your participation in this study is voluntary, and the return of this inventory indicates your informed consent.

You may receive a summary of the results by e-mailing me for and I will get you summary data on aggregate results as soon as they are available. I am happy to answer any additional questions or concerns you may have. Please e-mail or call me at 503-999-0825. Thank you very much for your assistance and time.

Sincerely,

Joselyn D. Salaz, MS, NCC, LPC, ACS
Oregon State University, Doctoral Student

# APPENDIX F

Reminder

Last week an inventory seeking your responses on an assessment to measure counselor knowledge was sent or e-mailed to you. You were selected based on your role as a mental health counselor in the northwest to help develop a reliable measure regarding counseling knowledge of older adult anxiety.

If you have already completed and returned it to me please accept my sincere thanks. If not, please do so upon your earliest convenience. It is very important to the field of our profession, and most of all to our older adult population, that research results accurately reflect counselors in our area.

If by some chance you did not receive the inventory or it got misplaced, please e-mail or call me and another one will be sent to you today.

Sincerely,

JoselynSalaz

503-999-0825

Joselyn0530@yahoo.com

# APPENDIX G

# Second Appeal Letter

Dear (name),

About three weeks ago I wrote to you seeking your responses on an inventory designed to assess older adult anxiety. If you have already responded, I sincerely thank you for your time. If you have yet to respond, please consider taking  time to do so today.

I have undertaken this research because of the need to develop a reliable measure in counselor knowledge around older adult anxiety. You, as a mental health counselor, are important in helping address this need.

I am writing to you again because of the significance each inventory has to the usefulness of this study. In order for the results of this research to be truly representative of mental health counselors in this area, it is important each participant return their inventory.

In the event that your inventory has been misplaced, a replacement is attached.

Your cooperation is greatly appreciated.

Cordially,

JoselynSalaz