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# COGNITIVE COMPONENTS OF SOCIAL ANXIETY: A COMPARISON OF ELDERLY AND YOUNG ADULTS

by

Jeffrey Alan McNeil

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Philosophy
Department of Counselor Education
and Counseling Psychology

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# COGNITIVE COMPONENTS OF SOCIAL ANXIETY: A COMPARISON OF ELDERLY AND YOUNG ADULTS

#### Jeffrey Alan McNeil, Ph.D.

#### Western Michigan University, 1999

The present study investigated the underlying cognitive elements of social anxiety in elderly and young adult samples. The young adult participants in this study were 99 undergraduate students from a Midwestern university, recruited through scheduled undergraduate classes from both the Communication and Education Departments. Fifty elderly participants from two independent living senior residence centers were recruited through organizational meetings and contacts coordinated through the housing director or the wellness director. One senior residential center was located in the Midwest, while the other was in the Southeast. The study employed well recognized self-report cognitive measures to assess social anxiety: the Fear of Negative Evaluation Scale (FNE), Self-Consciousness Scale (SCS), and the Irrational Beliefs Test (IBT). The Social Anxiety subscale of the Self-Consciousness Scale was used as the dependent variable, and the Social Avoidance and Distress Scale was employed to calculate convergent validity for the elderly sample. The Brief Symptom Inventory (BSI) was administered to assess psychological symptoms in the elderly sample. The Somatization subscale of the BSI was used to test for social anxiety with the elderly population. The Depression subscale (BSI-D) was used as a variable in the analysis of cognitive differences of social anxiety between the elderly and young adult sample. Regression analyses were employed to investigate the cognitive differences between the elderly and young adults on measures of social

anxiety and to identify the cognitive components of social anxiety for both samples. It was found that social anxiety levels for young and elderly adults were not significantly different. In comparison to elderly adults, young adults reported significantly higher levels of the cognitive components of social anxiety. It was discovered that the cognitive components explained a greater amount of the variance in social anxiety scores for the elderly adult participants than that of the young adult participants. The cognitive specificity of social anxiety was confirmed for this sample of elderly adults, while the sample of young adults' scores on depression and anxiety were significantly correlated. Discussion concerning the results of the investigation is presented and integrated with the current literature. Implications for clinical applications and future research are also provided.

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I would like to dedicate this dissertation to my late grandmother, Blanche S. Michelson, my intellectual mentor and best friend. She inspired me to pursue higher education and encouraged me to develop my critical thinking abilities. I extend my heartfelt gratitude to my wife, Teresa, for her love, insight, and patience. Thanks to my parents for their love, inspiration, and unwavering support. I would like to express my appreciation to Dr. Robert Betz and the other members of my committee for their feedback, input, and guidance. Special thanks is also extended to Carin Ness for her hard work and professionalism. Finally, I would like to recognize Connie Bowman for her valuable assistance and support in the recruitment of participants.

Jeffrey Alan McNeil

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#### CHAPTER I

#### INTRODUCTION AND LITERATURE REVIEW

#### Introduction

#### Elderly and Anxiety

Historically, the elderly adult population has been neglected in psychological research and practice (Shiekh, 1996). This lack of information is coupled with the evidence that many psychological dysfunctions in older adults remain undiagnosed or misattributed to the normal aging process (Morin & Colecchi, 1995). In addition, researchers continue to suggest an increased prevalence of mental disorders among the elderly (Brink, 1990), with anxiety often identified as one of the most underaddressed psychiatric difficulties (Sheikh, 1996).

Although social anxiety was once thought to be somewhat rare, recent writers have indicated that it is relatively common. For example, Stein, Walker, and Forde (1994) found that over 60% of a community sample reported significant anxiety in at least one social situation. Social anxiety is defined as a cognitive and affective response characterized by apprehension concerning an impending, potentially negative interpersonal evaluation that one thinks is unavoidable (Schlenker & Leary, 1985). In recent years, the psychological literature has witnessed a marked proliferation in research regarding social anxiety (Leary & Kowalski, 1995). Social anxiety is one form of anxiety that plagues the elderly, with some authors suggesting equal or higher levels of social anxiety in the elderly than younger adults (i.e.,

Furnham & Pendleton, 1983; Mueller & Ross, 1984). Social anxiety has been estimated by Beidel, Turner, and Dancu (1985) to be experienced by 20–41% of the entire population. Concern about these prevalence rates has provided much of the impetus for the growth of research in social anxiety.

#### Cognitive Model

Cognitive theory (CT) and its attendant therapy are growing more popular. A major influence behind the proliferation of CT has been the reports of outcome researchers, citing excellent therapeutic efficacy in the treatment of emotional problems (Chambless & Gillis, 1993). CT is also considered the cornerstone of treatment for anxiety disorders in the elderly (Shiekh, 1996). The cognitive theoretical model hypothesizes that people's emotions and behaviors are influenced by their perception of events (Salkovskis, 1996). It is not a situation in and of itself that determines what people feel, but rather the way in which they construe a situation. Salkovskis (1996) describes the cognitive theory of anxiety as the proposition that people experiencing anxiety believe they are threatened with either physical or social harm, and that people are more likely to assess situations as more dangerous than they really are because of particular assumptions or beliefs they learned during an earlier period in their life.

Recent studies have investigated the cognitive components of social anxiety with young adults (e.g., Creed & Funder, 1998; Glass & Furlong, 1990; Johnson, Johnson, & Petzel, 1992). Expansion of cognitive social anxiety research has partially resulted from the growing popularity of cognitive therapy, the apparent effectiveness of cognitive therapy for anxiety disorders, and the accompanying search for cognitive components as a focus of treatment. However, in the literature, very few studies were

found that investigated the cognitive components of social anxiety in the elderly (e.g., Carstensen & Fremouw, 1988; Furnham & Pendleton, 1983; Mueller & Ross, 1984), and these studies only secondarily discuss the cognitive components.

The development of the cognitive theory in recent decades has been expanded to the elderly population, and psychological treatment modules being used with the elderly are written based on cognitive theoretical underpinnings. However, based on the literature, it is not clear that therapists have a sufficient understanding of the underlying cognitive components of social anxiety in the elderly.

#### Literature Review

#### Social Anxiety and the Elderly

There is a limited amount of literature specifically relating to social anxiety in the elderly population and a relative scarcity of comparisons between elderly and young adults on social anxiety. Research to date focusing on cognitive components of social anxiety has been primarily conducted with young adult populations. This shortage of information germane to social anxiety in the elderly is unfortunate, given the previously mentioned prevalence of mental health concerns and the rapid growth of the elderly population. The 1990 census estimated the number of people age 65 and older at 31.3 million, and this number is projected to climb to 70 million by the year 2030 (Sheikh, 1996).

The limited research completed with elderly populations in the area of social anxiety is at least partially a product of measurement and recruitment issues.

Measuring older adults' attitudes can present certain difficulties. Some of the potential confounds reported by Merriam and Dimmock (1985) in measuring older

adult attitudes include physical status; psychological states (e.g., cognitive impairment); the ability of the older adult to discriminate between scale points (e.g., Likert scales); and a general perception of the interview being a threat. Poor health and reduced mobility can also prevent the elderly from participating in research. Even if health and mobility are intact, gatekeepers for the elderly, such as family members, can serve as deterrents to involvement in research (Tennstedt, Dettling, & McKinlay, 1992). In addition, accessibility to diverse elderly ethnic groups is very limited (Ferraro, 1990).

Research that does exist suggests relationships between social anxiety and serious social and physical impairments. Carstensen and Fremouw (1988) reported a significant relationship between social anxiety and social isolation with elderly nursing home residents. Among the elderly, social isolation has been found to be associated with poor physical health status (Carstensen & Fremouw, 1988) and higher rates of mortality (Blazer, 1982). Therefore, it is important to explore the underlying cognitive framework of elderly social anxiety in order to better tailor psychological treatment planning. Improvements in the assessment of dysfunctional cognitions may aid the clinician who targets such phenomena for change and would also be of value to researchers investigating the outcomes of cognitive therapy (Seigert, Walkey, & Taylor, 1992).

A comparison of the elderly adults and young adults may afford more specific identification of differences and similarities in the cognitive components of social anxiety. It may also allow for some inferences to be made concerning developmental changes or cohort cognitive differences. Only one study has been located that has explored the cognitive differences between the elderly and young adults on social anxiety (Mueller & Ross, 1984). Mueller and Ross used a sample of 10 elderly and

10 college students, and only secondarily addressed the cognitive differences in social anxiety between the elderly and college students. As many treatment approaches have been developed based on the nonelderly population, the present study will provide direct comparison and contrast of cognitive components of social anxiety in the elderly and younger adult sample that may be targeted in psychotherapy. A final reason for comparing the elderly with young adults is to further explore Sallis and Lichstein's (1982) suggestion that anxiety in the elderly is more somatically laden than that of young adults.

The increasing elderly population, negative implications of social anxiety and social isolation, and the need for cognitive treatment specificity all illustrate the imperative nature of exploring social anxiety in the elderly. The few extant social anxiety investigations that have used an elderly sample for analysis (i.e., Carstensen & Fremouw, 1988; Mueller & Ross, 1984) include relatively small elderly samples.

#### General Cognitive Tenets of Social Anxiety

Social anxiety is comprised of physiological, behavioral, affective, and cognitive symptoms but appears to be mediated by cognitive operations. Granger, Weisz, and Kaunekis (1994), in utilizing parent-child conflict tasks, found that cortisol reactivity (hormonal reaction) was correlated with children's beliefs about the contingencies governing social and behavioral outcomes. Therefore, cognitive appraisal, not simply the nature of task or situation, may be important in the physiological manifestations of social anxiety. Beidel et al. (1985) and Glass and Furlong (1990) reported that people who tend to suffer from socially anxious emotional reactions tend to have thoughts considered to be more negative than nonsocially anxious individuals. Behavioral reactions, such as avoidance, are often

performed to prevent the experiences of social situations that would be cognitively interpreted as engendering social anxiety. Creed and Funder (1998) reported a significant correlation between social anxiety and fearful or timid behaviors. Thus, it can be seen that cognitive interpretations and thought content are axiomatic to the development of the physiological, affective, and behavioral symptoms of social anxiety.

Socially anxious individuals, when involved in a series of interpersonal tasks, report fewer positive than negative thoughts, and their cognitions are generally related to a lack of social skills (Beidel et al., 1985). In addition, individuals high in social anxiety not only have more negative self-statements but may not have the ability to interrupt negative thoughts, as do those lower in social anxiety (Hartman, 1984). The worrisome or negative thoughts that characterize interactions for socially anxious people tend also to be reflected in their difficulty in remembering information from social encounters (Leary & Kowalski, 1995). The socially anxious, therefore, have a negative evaluatory bias regarding their social performance.

Beck and Emery (1985) cite several cognitively oriented components derived from a seminal study of social anxiety by K. A. Nichols, including (a) perception of disapproval or critical regard by others, (b) expectation of disapproving or critical regard by others, (c) having rigid ideas of appropriate social behavior, (d) negative fantasy or imagination that produces anticipatory anxiety, and (e) exaggerated interpretation of the sensory feedback related to tension or embarrassment.

Current researchers have therefore illuminated the role of cognition in social anxiety (e.g., Beidel et al., 1985; Glass & Furlong, 1990; Hartman, 1984; Sanz & Avia, 1994). Cognitive manifestations evident in the socially anxious are probably not monolithic but do seem to indicate a constellation of thought and belief patterns.

Irrational beliefs, self-consciousness, and the fear of negative evaluation appear to comprise much of the thought and belief patterns related to social anxiety.

#### Irrational Beliefs

Irrational beliefs are a pivotal element in cognitive interpretations related to social anxiety. In studying psychiatric inpatients utilizing the Irrational Beliefs Test (IBT), it was discovered that "demand for approval" and "dependency" were correlated significantly with ratings of social skill, and "demand for approval" was also positively correlated with social anxiety (Monti, Zwick, & Warzak, 1986). Glass and Furlong (1990) also found a significant relationship between irrational beliefs and social anxiety, specifically three IBT subscales, focusing on demand for approval, high self-expectations, and worry. Consistent with the "demand for approval" association between irrational beliefs and social anxiety, Leary (1988) reported that people with a need for approval are more concerned about how others perceive them and are more likely to be socially anxious than persons less concerned about approval.

#### Self-Consciousness and Fear of Negative Evaluation.

Many of the relevant articles cite both self-consciousness and fear of negative evaluation as axiomatic to social anxiety, thus the constructs of self-consciousness and fear of negative evaluation are presented together. In a factor-analytic study exploring the cognitive components of social anxiety with undergraduate and graduate students, Hartman (1984) found four factors that appear to be relevant to social anxiety: (1) thoughts of general physiological discomfort and social inadequacy, (2) concern with others' awareness of distress, (3) fear of negative

evaluation, and (4) perceptions of autonomic arousal and performance anxiety (Hartman, 1984). Winton, Clark, and Edelman (1995) investigated social anxiety and fear of negative evaluation and concluded that socially anxious individuals have a greater propensity toward identifying others' emotional expressions as negative. Smari, Bjarnadottir, and Bragadottir (1998) found the estimated cost of negative social events correlated positively with social anxiety A metacognitive model suggested by Hartman (1983) asserted that socially anxious individuals are overly invested in cognitive and perceptual operations that have to do with themselves and, thus, have a resultant diminished capacity to experience others. This autocentric model appears to synthesize the cognitive manifestations of the socially anxious individual. Self-consciousness, chronic negative self-evaluation, and a perceptual filter that perpetually confirms social fears all seem to underlie the phenomenon of social anxiety. However, Sanz and Avia (1994) reported that socially anxious participants did not report higher levels of public self-consciousness than controls and called for further research into the apparently counterintuitive discovery.

#### Social Anxiety and Social Phobia: Implications From Clinical Samples

Although there is some controversy, social phobia is considered to be excessive and unreasonable social anxiety, rather than a qualitatively different construct (Andrews, Crino, Hunt, Lampe, & Page, 1994; Leary & Kowalski, 1995). Greist (1995) defines *social phobia* as a fear that performance in social settings will be inadequate, leading to embarrassment or humiliation. Social phobics are characterized by phobic anxiety and avoidance of social or performance situations (Andrews et al., 1994). The conventional diagnostic criteria for social phobia, according to the *DSM-IV* (APA, 1994), include the following:

Exposure to a feared social situation almost invariably provokes anxiety, which may take the form of a situationally bound or situationally induced panic attack, the person recognizes that the fear is excessive or unreasonable, and the feared social or performance situations are avoided or else are endured with intense anxiety or distress. (p. 411)

It is important to explicate the literature pertaining to social phobia, especially considering similar cognitive, behavioral, and physiological manifestations for social anxiety and social phobia. Cognitive descriptors of social phobia, therefore, are analogous and can provide implications for discussions of social anxiety. Also, support is provided for the similarities by both Beidel, Turner, and Dancu (1985) and Turner, Beidel, and Larking (1986), who discovered that socially anxious students and social phobic patients produced similar elevated responses on cognitive, behavioral, and physiological indexes of anxiety following a simulated social interaction.

An approximation of the prevalence of the anxiety disorder, social phobia, has been reported as 3% in the United States (Davidson et al., 1993). However, using the DSM III-R (APA, 1987) diagnostic criteria, a National Comorbidity Survey investigation of 8,000 individuals found that the 12-month prevalence of social phobia was approximately 7.9%, and lifetime prevalence was 13.3% (Jefferson, 1995). Social phobia exacts a great toll on the individuals who are afflicted with this disorder. For example, in those with the generalized form of social phobia, 92% have had occupational impairment, 70% social impairment apart from employment, and 50% have used alcohol at some point to allay their anxiety (Greist, 1995).

Interest in social phobia has increased in the last 10 years (Greist, 1994), as reflected in the proliferation of research dedicated to its study. The cognitive theories of emotional disorders have been applied to social phobia, and now the cognitive framework represents the strongest area of interest in social anxiety and social phobia

(Andrews et al., 1994). Warren and Zgourides (1991) postulate the Rational-Emotive perspective of social phobia and assert the imperative nature of exploring the physiological, behavioral, and cognitive dimensions of social phobia. Due to psychological and biological propensities, individuals more easily develop irrational beliefs through learning experiences, such as social rejection, parental fear of negative evaluation, initial panic attack in reaction to social rejection, and lack of social skills (Warren & Zgourides, 1991). Social phobia develops primarily as a result of fear of negative evaluation, a perceived threat of social examination that includes either shame or embarrassment, and the generalization of this anxiety to one or more social situations (Warren & Zgourides, 1991). Greist (1995) concurs that rejection sensitivity and fear of negative evaluation characterize social phobics. An interpretive bias ensures that scrutiny and negative appraisal are detected even when not realistically apparent, and an attentional bias toward threat cues (somatic anxiety symptoms, presence of potential evaluators) maintains overestimates of probability and cost of negative social outcomes (Andrews et al., 1994).

The cognitive manifestations evident in socially anxious and social phobics are very similar and may be differing levels of the same construct. This notion is also reflected in the DSM-IV (APA, 1994), which provides the alternative term for social phobia as social anxiety disorder. Regardless of the purity of the social anxiety and social phobia constructs, the literature does indicate some similar thought and belief patterns.

#### Social Anxiety in the Elderly Compared to Young Adults

The preponderance of the above social anxiety research has been carried out with college students and nonelderly participants. As indicated above, there is a

relative dearth of research specifically germane to social anxiety in elderly. One elderly sample (N = 40) reported high incidence of social anxiety across 40 everyday situations (Furnham & Pendleton, 1983). Coolidge, Burns, Nathan, and Mull (1992) conducted a study of personality disorders comparing the elderly (N = 38) and college students (N = 573). Coolidge et al. reported the elderly group scored significantly lower on the symptom "extreme sensitivity to social criticism," providing some evidence for social anxiety differences. However, the use of MANOVA with such a disparity between elderly and young adult sample sizes may have yielded inaccurate statistical conclusions (Cone & Foster, 1993). Another study investigated anxiety and depression differences between elderly married males and females. Utilizing the Brief Symptom Inventory (BSI®), Hale and Cochran (1983) found significantly higher levels of interpersonal sensitivity (a construct similar to social anxiety) with elderly married women compared to elderly men. Also, Furnham and Pendleton (1983) reported greater discomfort for elderly and young adult females compared to elderly and young adult males.

With some exceptions (Mueller & Ross, 1984; Powers, Wisocki, & Whitbourne, 1992), the cognitive components of social anxiety in the elderly are inadequately addressed in the current literature. Powers et al. (1992) reported lower levels of social worries in an elderly population compared to undergraduate college students. When compared with undergraduates, elderly participants (N = 20) have also been reported as lower on both public and private self-consciousness, but not on social anxiety (Mueller & Ross, 1984).

<sup>&</sup>lt;sup>1</sup> "BSI" is a registered trademark of Leonard R. Derogatis, PhD.

Due to the limited number of studies directly or indirectly relating to social anxiety in the elderly, a detailed critical review is offered for each germane investigation. Mueller and Ross (1984) endeavored to investigate the self-concept of a sample of 20 elderly individuals and 20 young adults. The average ages of the participants were 21.6 (SD = 3.54) for the young adults and 71.5 (6.33) for the elderly. Secondarily, the Self-Consciousness Scale was administered to each of the 40 participants. The researchers found that the level of reported social anxiety (SCS-SA) for the elderly was not significantly different from that of the young adults, but that young adults were generally higher on public self-consciousness (SCS-P). The investigators utilized only elderly participants who were living at home and in "good general health" for the study, which provided a very crude screen for cognitive impairment. This study did provide some important preliminary information regarding social anxiety in the elderly, such as levels of self-consciousness in social anxiety, but had some marked limitations. The sample size was very small and lacked the statistical power to detect smaller differences in measurement scores. The investigators were focused primarily on "self and other" trait adjectives for the two samples and included the social anxiety measure as a peripheral measure.

Carstensen and Fremouw (1988) studied social isolation among the elderly in nursing homes, utilizing the Social Avoidance and Distress Scale to measure social anxiety and The Mental Status Questionnaire (Kahn, Goldfarb, Pollack, & Peck, 1960) to estimate cognitive capacities. It was reported by Carstensen and Fremouw that social anxiety and impaired mental status were positively related to social isolation, but that depression and social isolation were not related. Unfortunately, the generalization of the results is primarily limited to elderly nursing home residents. The sample size of 23 was relatively small and ameliorated the power of the study, thus

potentially limiting the detection of certain statistical relationships. The researchers used a brief cognitive impairment screening instrument, which afforded more confidence in the ability of the elderly participants to complete the Likert questionnaires. Also, the investigators used both self-report and behavioral observation scales as measurement devices, which served to cross-validate their findings.

Furnham and Pendleton (1983) conducted an interesting study of social skills in the elderly. They investigated the differences in comfort and assertiveness in social situations for elderly and young adults, utilizing British middle-class samples. They utilized a relatively moderate sample of 40 older adults (mean age 68.7, SD = 3.7) and compared them to a group of 40 young adults (average age 25, SD = 4.82) on measures of social skills and social anxiety. Furnham and Pendleton reported that the elderly experience significantly more discomfort in social situations than younger adults and were less likely to be assertive. The authors speculated that the social problems experienced by elderly adults may be related to a lack of energy or social status, which might have compensated for social skill deficiencies in the past. Unfortunately, the measures used in their study contained items with specific content relating more to young adults, such as "attending a discotheque." Also, one measure (The Social Situations Questionnaire) had no established reliability or validity, and the authors did not perform reliability or validity computation for the other social skills measure (The Gambrill Assertion Inventory).

Generally, the above studies lacked adequate sample sizes and utilized a small number of measures relevant to social anxiety. In addition, the investigations did not specifically focus on the cognitive components of social anxiety for the elderly.

Therefore, the current study incorporated a larger sample of the elderly, employed

some of the central measurement scales cited in the literature for social anxiety, and compared the cognitive components of social anxiety for both the elderly and young adults. Additionally, this study incorporated cognitive screening for dementia or cognitive impairment in the elderly, which has been found to confound measures of anxiety (Alexopolous et al., 1995).

#### Affective and Somatic Components

According to the literature, symptoms of both general anxiety and social anxiety are related to other psychological or physical symptoms. Anxiety in elderly populations often accompanies depression and is commonly manifested through physical or somatic symptoms (Shiekh, 1996). Social anxiety in young adults has been reported to be significantly correlated with depression. There has also been question in recent literature germane to the discreteness of anxiety and social anxiety.

Elderly Anxiety and Somatization. Manifestation of anxiety appears to be influenced by age. Presenting symptoms of anxiety in elderly patients primarily involve somatic complaints (Morin & Colecchi, 1995). Sallis and Lichstein (1982) reported a pattern of higher levels of somatic anxiety symptoms and lower levels of cognitive anxiety symptoms for an elderly sample compared with a younger sample. Within geropsychology, the notion that anxious complaints tend to be manifested by somatic complaints is pervasive throughout much of the anecdotal evidence. In contrast, Smith, Colenda, and Espeland (1994) found that anxiety symptoms tend to decrease with age, and this trend appears to extend into extreme old age (85+). Smith et al. speculated that potential underreporting and a healthy elderly sample may have been responsible for the decrease of anxiety symptoms into old age.

Cognitive Specificity of Anxiety and Depression. The comorbidity of depression and anxiety is common, especially in the elderly (Sheikh, 1996). It has been reported that when low levels of both depression and anxiety are present in elderly participants, depression and anxiety are highly correlated (Smith et al., 1994). Schroeder (1995) postulated the notion that social anxiety is a large component of general anxiety and questioned the utility of conceptual divisions. Thus, the presence of depression may confound the investigation of anxiety in the elderly. However, depression was not found to correlate with the more specific construct of social anxiety in a geriatric study exploring social isolation (Carstensen & Fremouw, 1988). These contrasting findings then elicit the question, is the cognitive basis of social anxiety similar for young adults and the elderly?

It has been postulated in the literature that cognitive specificity for social anxiety versus depression is difficult to demonstrate (e.g., Sanz & Avia, 1994; Winton et al., 1995). Cognitive specificity can be conceptualized as distinctiveness for the constructs of social anxiety and depression, which is generally defined statistically as a nonsignificant correlation. Sanz and Avia (1994) found that cognitive specificity for social anxiety in college students exists only when specific statements related to depression or social anxiety are measured. There were no statistically significant differences in levels of dysfunctional attitudes, public self-consciousness, and private self-consciousness when socially anxious and depressed individuals were compared. Johnson et al. (1992) conducted a cognitive investigation of social anxiety in undergraduate college students and reported that the cognitive distortions underlying social anxiety appear to be highly similar to those underlying depression. Also, the results of the investigation indicated that highly socially anxious individuals engaged in more depressive-type thought patterns than moderately or low socially

anxious individuals (Johnson et al., 1992). Winton et al. (1995) reported that young adult participants high in social anxiety (as measured by the Fear of Negative Evaluation Scale and the Social Anxiety and Distress Scale) had significantly higher scores on the Beck Depression Inventory Scale. This finding suggests further confirmation that social anxiety and depression may not be discrete for young adults in terms of cognitive factors.

The issue of cognitive specificity for social anxiety and depression in the elderly has not been formally investigated. Carstensen and Fremouw (1988) failed to find a statistically significant relationship between depression and social isolation, but did discover a significant relationship between social anxiety and social isolation. This study has limited generalizability because of the small nursing home sample, but it does provide some interesting data that suggest social anxiety and depression may be more distinct constructs in the elderly.

#### Conclusion

The definition of social anxiety for the present study has been developed based on the cited cognitive literature, as well as adaptations from the social psychological definition of social anxiety (Leary & Kowalski, 1995). Social anxiety is defined as a type of anxiety that arises from irrational beliefs, self-consciousness, and a general fear of negative evaluation concerning the prospect or presence of interpersonal evaluation. Cognitive factors appear to mediate the affective, behavioral, and somatic symptoms of social anxiety. However, this cognitive definition of social anxiety may be more tenuously applied to the elderly population, especially with the potential comorbidity of anxiety with depression and somatic complaints. In addition, the lack of relevant research limits the conclusions

professionals in psychology can make about social anxiety in the elderly. Therefore, further research is required to investigate the cognitive components of social anxiety in the elderly and provide a tentative framework for developing therapeutic interventions.

#### Statement of Purpose

The present study was conducted to explore the cognitive components of social anxiety in the elderly compared with those of a college sample. The following research questions were used in the investigation:

- 1. Do elderly adults report different levels of the cognitive components of social anxiety compared to young adults?
- 2. Are the cognitive components of social anxiety equally predictive for the elderly and young adult samples?
- 3. Do somatization scores predict levels of social anxiety in elderly and young adults?
- 4. Is there a statistically significant difference between levels of social anxiety for elderly and young adults?
  - 5. Can cognitive specificity be demonstrated for social anxiety in the elderly?

The present study compared the cognitive components of social anxiety in the elderly with college students and contributes unique elements to the literature. The sample sizes of 99 college students and 50 elderly provided superior statistical power and were larger than the previous comparison of social anxiety in the elderly and college students (Mueller & Ross, 1984). The primary focus on cognitive social anxiety differences between elderly and young adults is unique to the literature. This study also considered the confounding factors of depression and somatization in the

investigation of social anxiety in both the elderly and college sample, discussing the role of each in the genesis and perpetuation of social anxiety. Cognitive screening was performed with the elderly participants to control for the potentially confounding effects of cognitive impairment. This study allowed for the calculation of reliability and convergent validity for certain measures for use with the elderly population, such as the Social Anxiety and Distress Scale, Brief Fear of Negative Evaluation Scale, and the Revised Self-Consciousness Scale (Social Anxiety and Public Self-Consciousness subscales).

#### Hypotheses

 $H_1$ : The cognitive components of social anxiety (as measured by the IBT-1, IBT-2, BSI-D, FNE, and SCS-P) for the elderly participants were expected to be significantly lower than those of the undergraduate participants. The null form of the hypothesis stated that there would be no significant differences on self-report measures of cognitive components between the elderly and undergraduate participants and was tested statistically using a p value  $\leq .05$ , divided by the number of comparisons to establish statistical significance (Howell, 1992).

 $H_2$ : The cognitive components of fear of negative evaluation, self-consciousness, and irrational beliefs were anticipated to be less predictive of social anxiety for the elderly sample than the young adult sample. That is, when the cognitive measures were used as predictors of social anxiety, there was predicted a relatively lower multiple regression  $R^2$  estimate for the elderly compared to the young adult sample. The null forms of the hypothesis stated that there would be a larger  $R^2$  for the optimal combination of predictors for the elderly sample compared to the young adult sample.

 $H_3$ : The greater somatic loading of anxiety in the elderly postulated by Sallis and Lichstein (1982) was speculated to be reflected by the Somatization subscale of the BSI (BSI-S) significantly predicting levels of social anxiety in the elderly, while not significantly predicting social anxiety scores for the young adult sample. The null forms of the hypothesis stated that somatization scores would significantly predict social anxiety for the young adult participants, and that somatization scores would not significantly predict social anxiety scores for the elderly participants. The null hypotheses were tested statistically using a p value  $\leq .05$  to establish significance.

 $H_4$ : Levels of social anxiety were predicted to be roughly equivalent in both populations. The null form of the hypothesis stated that social anxiety scores for the elderly and young adult sample would not be significantly different, with and without controlling for depression. The null hypotheses were tested statistically using a p value  $\leq .05$  to establish significance.

 $H_5$ : Social anxiety scores were predicted to be more related to depression scores in the young adult sample compared to the elderly adult sample. The null form of the hypothesis stated that social anxiety scores would be significantly related to elderly adult depression scores, and that social anxiety scores would not be significantly correlated with young adult depression scores. The null hypotheses were tested statistically using a p value  $\leq .05$  to establish significance.

#### CHAPTER II

#### **METHOD**

The development of the present study required certain pivotal steps and procedures, including protocol development, procedural implementation, and analysis of results. Prior to conducting the investigation, it was necessary to determine the requisite sample size employing power analysis, select instrumentation that would best measure the independent and dependent variables for the study, and complete participant recruitment. Following the preliminary steps, the research procedures were conducted, which primarily included the administration of measurement instruments. Lastly, statistical analyses were selected and employed to test the established null hypotheses.

#### Power Analysis for Sample Size

A power analysis was calculated to determine necessary sample size to detect statistically significant differences between the elderly and college samples. Using Cohen's formula (Cohen, 1988), a sample size of 45 yields a power estimate slightly above .93, which is considered excellent. For the use of multiple regression analysis, the guiding heuristic rule was  $N \ge p + 40$  (Howell, 1992), with N being equal to sample size, and p equal to the number of predictors. Tabachnick and Fidell (1989) recommended the bare minimum ratio of subject to predictor as 5 to 1. For the two separate multiple regression analyses (elderly and young adult), the sample size was 50 and 99, respectively, and six predictors were utilized for both, which yielded the

ratio of 8.33 to 1 subject to predictor ratio for the elderly regression analysis, and a 16.5 to 1 subject to predictor ratio for the young adult regression analysis. Therefore, the minimum sample size recommendations were met for both heuristic rules pertaining to multiple regression sample sizes.

#### Instrumentation

Measurement instruments were selected based on cognitive theoretical components and the extant research. Glass and Furlong (1990) postulated that measures of fear of negative evaluation, public self-consciousness, and irrational beliefs appear promising in addressing underlying cognitive factors of social anxiety. Glass and Furlong used the Irrational Beliefs Test (IBT), Self-Consciousness Scale (SCS), and the Fear of Negative Evaluation Scale (FNE) as cognitive assessment instruments in their large scale cognitive investigation of social anxiety. The Social Anxiety and Distress Scale (SAD) and the Brief Fear of Negative Evaluation Scale (FNE) are considered to be two of the most commonly used self-report inventories in behavioral studies (Turner, McCanna, & Beidel, 1987). The Brief Symptom Inventory, a measure of general psychopathology, was helpful in identifying predictors of social anxiety. The SAD has been used in well over 100 studies investigating counseling interventions for chronic social anxiety (Leary, 1991) and was utilized in this study to establish convergent validity for the SCS-Social Anxiety subscale. Although scores, not tests, are reliable (Vacha-Haase, 1998), the reliability coefficients for each instrument was presented as general estimates.

There are some questions regarding the use of the FNE, IBT, SCS, and SAD as measures for elderly samples. The FNE, IBT, SAD, and SCS all have been used with social anxiety investigations and, to some degree, with the elderly population.

While no difficulties have been reported in the literature, some of these instruments do not have formal reliability and validity estimates for use with the elderly population. However, all of the measures were found by this study to correlate with social anxiety, regardless of the age ranges sampled. For the present investigation, scores on the FNE, IBT (scale 1 and 6), and SAD were cross-validated with other measures to determine if similar constructs were being measured for both the elderly and college students. Following the data analysis, validity and reliability coefficients were calculated to evaluate these instruments for use with the elderly.

# The Brief Symptom Inventory

The Brief Symptom Inventory (BSI) is a 53-item self-report inventory designed to reflect psychological symptom patterns (Derogatis, 1993). The BSI is the only measure of general psychological symptoms with an anxiety subscale that has been used extensively by practitioners with the elderly (Morin & Colecchi, 1995). Hale, Cochran, and Hedgepeth (1984) have also published norms for the elderly on the BSI. Items are responded to on a 5-point Likert scale, based on the concern the symptom has caused during the past 7 days. Nine symptom dimensions or subscales make up the BSI, which is considered the short form of the Symptom Check List-90 (SCL-90). The nine subscales were derived from factor analysis and consist of: Somatization (BSI-S), Obsessive Compulsive (BSI-O), Interpersonal Sensitivity (BSI-I), Depression (BSI-D), Anxiety (BSI-A), Hostility (BSI-H), Phobic Anxiety (BSI-P), Paranoid Ideation (BSI-PI), and Psychoticism (BSI-PS). The nine dimensions were found to correlate highly r(565) = .92 to .99, no p values reported, with the symptom dimensions of the SCL-90-R (Derogatis, 1993). Subscales BSI-D.

BSI-S and BSI-I were the primary BSI measures used in this investigation. The estimated time to complete the BSI was 10 to 15 minutes.

The depression subscale (BSI-D) was used as a predictor for social anxiety, and as a variable in the analysis of social anxiety differences between elderly and young participants. Internal consistency of the BSI-D was reported by Derogatis (1993) as a Cronbach alpha of .85, with a test-retest (2-week interval) correlation coefficient of .84. The BSI-D is designed to measure symptoms of clinical depression, such as dysphoric mood and affect, lack of motivation, and loss of interest in life (Derogatis, 1993). The BSI-D has demonstrated convergent validity, correlating significantly with the Wiggins MMPI Depression Scale, r(209) = .72, p < .01 (Derogatis, 1993).

The BSI Somatization (BSI-S) subscale was used as a covariate for exploring correlations with social anxiety in the elderly. The BSI-S was developed to assess distress arising from physical symptoms within cardiovascular, gastrointestinal, and respiratory domains (Derogatis, 1993). The BSI-S subscale's internal consistency was reported as a Cronbach's alpha of .80 and test-retest reliability coefficient of .68 (Derogatis, 1993). Derogatis reported the BSI-S as correlating significantly with the Tryon MMPI Body Symptoms scale r(209) = .38, p < .05, suggesting at least minimal convergent validity.

The BSI-Interpersonal Sensitivity (BSI-I) was employed to measure convergent validity for the measures of social anxiety SCS-SA and SAD.

Interpersonal sensitivity can be considered a similar construct to social anxiety and is purported by Derogatis (1993) to measure such dimensions as self-doubt and discomfort with social interactions. Internal consistency was reported by Derogatis as an alpha coefficient of .74, and test-retest reliability was estimated as .85. The BSI-I

has been found to correlate significantly, r(209) = .52, p < .01, with the Tryon Introversion subscale of the MMPI.

# The Revised Self-Consciousness Ouestionnaire: Public Self-Consciousness Subscale and Social Anxiety Subscale

The revised Self-Consciousness Questionnaire (SCS) is a 23-item self-report measure of dispositional self-attention processes (Osberg, 1995) The questionnaire consists of three subscales: Private Self-Consciousness, Public Self-Consciousness and Social Anxiety (Leary, 1991). The Social Anxiety subscale (SCS-SA) was utilized for this study to aid in estimating social anxiety levels. The Public Self-Consciousness subscale (SCS-P) was used to explicate the role of public self-consciousness in predicting social anxiety. The original subscales for the SCS were derived through factor analysis. Scheier and Carver (1985) modified the original SCS for use with the general adult population also utilizing factor analysis, as it was found that the SCS was difficult to understand for a non-student population. Although the revised SCS does not have specific reliability estimates for non-college populations, the test has been normed on samples of male coronary bypass patients and menopausal women (Osberg, 1995). Internal consistency for the revised SCS, as measured by the Cronbach alpha, ranged from .75 to .84 (Osberg, 1995). The estimated time of completion for the SCS was 5 minutes.

The revised Self-Consciousness Social Anxiety subscale (SCS-SA) is comprised of 6 questions, with a 4-point Likert scale ranging from 0 (not at all like me), to 3 (a lot like me), and a potential range of total scores from 0 to 18. Examples of items include, "It takes me time to get over my shyness in new situations," and "I get embarrassed very easily." The SCS-SA underwent minor changes when it was

revised by Scheier and Carver (1985). For example, the item "I feel anxious when I speak in front of a group" was changed to "I feel nervous when I speak in front of a group." Therefore, correlations based on the original scale are presented to provide limited convergent validity indicators. Turner, Scheier, Carver, and Ickes (1979, in Leary, 1983) reported a strong correlation of the original SCS-SA with the Interaction Anxiousness scale, r(331) = .78, p < .001. The original SCS-SA was also found to correlate strongly r(410) = .75, p < .01) with the Si1 (social discomfort and anxiety) subscale of the MMPI-2 developed by Ben-Porath, Hostetler, Butcher, and Graham (1989) (Sieber & Meyers, 1992). Cronbach alpha for the SCS-SA was estimated at .79, while 4-week test-retest reliability was estimated at .77 (Osberg, 1995). Creed and Funder (1998) studied a 149 undergraduate students and reported a Cronbach alpha of .78 for the SCS-SA.

The revised SCS Public Self-Consciousness (SCS-P) score was employed as a predictor variable for the purposes of this study. Public self-consciousness as measured by the SCS-P can be considered an awareness of self as a social object (Mikawa, Nordin, & Eyman, 1986). Item examples of the SCS-P include, "I usually worry about making a good impression," and "I care a lot about how I present myself to others." Scheier and Carver (1985) reported a Cronbach alpha for the SCS-P as .84, and a test-retest reliability coefficient of .74. In regard to convergent validity, the SCS-P has also been found to correlate significantly with the Social Phobia and Anxiety Inventory, r(263) = .32, p < .01 (Smari, Clausen, Hardarson, & Arnarson, 1995), and with the MMPI Self-Other Alienation subscale r(410) = .35, p < .01 (Sieber & Meyers, 1992). Overall, the SCS-P provides a good measure of self-consciousness, which has been shown to be a central cognitive component of social anxiety (Hartman, 1983).

#### The Revised Irrational Beliefs Test

The Irrational Beliefs Test (Jones, 1969) is comprised of 100 questions, based upon the 10 irrational beliefs postulated by Ellis (1962) as contributing to psychological disorders. The revised IBT (Lohr & Bonge, 1982), was used for this study and consists of nine subscales derived through factor analysis (70 questions). The nine subscales that comprise the revised IBT include: Demand for Approval, High Self-Expectation, Blame Proneness, Emotional Irresponsibility, Anxious Overconcern, Problem Avoidance, Dependency, Helplessness, and Perfectionism. The original Frustration Reactive subscale was eliminated by Lohr and Bonge (1982) due to a lack of statistical support. The subscales of Anxious Overconcern (IBT-6), High Self-Expectations (IBT-2), and Demand for Approval (IBT-1) have been found to correlate significantly with social anxiety (Glass & Furlong, 1990; Monti et al., 1986). Thus, the IBT-1, IBT-2, and IBT-6 were used in this study to aid in explicating the cognitive axioms of social anxiety. The estimated time of completion for the revised IBT was 10 minutes.

The Demand for Approval subscale of the Irrational Beliefs Test (IBT-1) is designed to measure the belief that "it is a dire necessity for an adult human to be loved or approved by virtually every significant other person in his life" (Warnock, 1989, p. 268). Examples of items comprising the subscale include, "It is important to me that others approve of me," and "I find it hard to go against what others think." Monti et al. (1986) investigated a sample of male psychiatric inpatients (N = 63) and reported a significant negative correlation between IBT-1 and a measure of social skills (Simulated Social Interaction Test), r(63) = .30, p < .05. Based on a sample of 897 undergraduate students, internal reliability was estimated as a coefficient alpha

score of .73, and test-retest reliability is reported as .80 (Lohr & Bonge, 1982).

Unfortunately, the reliability estimates for the IBT subscales were calculated based entirely on a young adult sample but do provide some estimation of consistency.

The Anxious Overconcern (Worry) subscale of the IBT (IBT-6) is based on the idea that "if something is or may be dangerous or fearsome one should be terribly concerned about it and should keep dwelling on the possibility of its occurring" (Warnock, 1989, p. 270). The following are two representative items from the IBT-6: "I often can't get my mind off some concern," and "I worry a lot about certain things in the future." Glass and Furlong (1990) investigated a sample of adults (average age 33) and reported a significant correlation between Anxious Overconcern and the Social Interaction Self-Statement Test, r(101) = .35, p < .01. Internal reliability is estimated as a coefficient alpha score of .72, and test-retest reliability is reported as .72 (Lohr & Bonge, 1982).

The High Self-Expectations subscale of the Irrational Beliefs Test (IBT-2) has its foundations in the irrational belief described by Ellis as "the idea that one should be thoroughly competent, adequate, and achieving in all possible respects to consider oneself worthwhile" (Warnock, 1989, p. 268). Examples of IBT-2 items include "I like to succeed at something but I don't feel I have to," and "It bothers me when others are better than I am at something." Glass and Furlong (1990) reported a significant correlation between High Self-Expectations and the Social Interaction Self-Statement Test, r(101) = .35, p < .01. Internal reliability for the IBT-2 is estimated as a coefficient alpha score of .35 and test-retest reliability is reported as .72 (Lohr & Bonge, 1982). The relatively low internal reliability estimate has been attributed to the small numbers of items comprising the scale (Lohr & Bonge, 1982).

The revised IBT was utilized by Monti et al. (1986) in the exploration of social skills in psychiatric patients ages 21–69 years. Davison and Zighelboin (1987) discovered that individuals who had a tendency to become anxious in social situations articulated more irrational thoughts, as measured by the IBT. Lichtenberg, Johnson, and Arachtingi (1992) studied a sample of patients 18–89 years old and found an association between the IBT and physical illness despite the age of the patient. The fact that age did not affect the associations between irrational beliefs and physical illness provides some indication that the elderly and young adults do respond in similar fashions to the IBT.

## The Brief Fear of Negative Evaluation Scale

The Fear of Negative Evaluation Scale (FNE) directly assesses concerns over being evaluated critically by others. It has been stated by reviewers that as much as the data strongly support the utility of the FNE Scale as a measure of interpersonal evaluation, it may be considered as a principal cognitive aspect of social anxiety (Leary, 1991). The utility of the FNE does appear to be strongly supported by the existing literature (Glass & Furlong, 1990; Hartman, 1984). The original FNE Scale consists of 30 true-false items, approximately balanced between positively and negatively scored items. The revised, brief version of the scale (Leary, 1983), was used in this study. The revised FNE contains 12 of the original items that are answered on 5-point scales, ranging from 1 (not at all characteristic of me), to 5 (extremely characteristic of me), and summed to yield a single total score.

Representative items include "I often worry I will say or do the wrong things," and "I am frequently afraid of other people noticing my shortcomings." The original version correlates highly with the shorter and more efficient revised version, r(150) = .96,

p < .0001 (Leary, 1991). Reliability for the brief FNE scale scores is reported as a Cronbach alpha of .90, and a 4-week test-retest coefficient of .75. Leary (1983) reported a correlation of r(40) = .57, p < .0001 between the brief FNE and degree of distress related to unfavorable ratings in a conversational experiment, thus exhibiting criterion-related validity. Leary (1993) reported a moderate correlation of the brief FNE with the Social Anxiety and Distress Scale (SAD) r(76) = .35, p < .05. The brief FNE has been chosen as an instrument for its strong psychometric properties and the fact that major investigations of the cognitive components of social anxiety have also used the FNE (Glass & Furlong, 1990; Hartmann, 1984). The estimated time of completion of the FNE was 3 to 5 minutes.

#### Social Avoidance and Distress Scale

The Social Avoidance and Distress Scale (SAD) was developed by Watson and Friend (1969) to assess social anxiety, self-evaluative anxiety, and avoidance of social situations (Glass & Furlong, 1990). The scale contains 28 items, 14 keyed true and 14 keyed false, to which participants respond true or false as they apply to them (Carstensen & Fremouw, 1988). A 5-point Likert scale format has been adapted by many researchers, ranging from strongly disagree to strongly agree (Measures of Personality and Social Psychological Attitudes, 1991), and was utilized for the purposes of this study. The SAD scale is designed to measure two dimensions of social anxiety: social distress, a cognitive constituent of social anxiety; and social avoidance, a behavioral constituent of social anxiety (Johnson et al., 1992). Although the scale has separate avoidance and distress subscales, most researchers (including this author) have ignored the subscale structure and used the sum of all scores (Leary, 1991). The SAD has been utilized to measure social anxiety in a number of

cognitive social anxiety investigations, and in each study the total score was used to measure the construct of social anxiety (i.e., Glass & Furlong, 1990; Hartman, 1984). The following items are representative of the SAD: "I often find social occasions upsetting," and "I tend to withdraw from people," The SAD was reported by Sieber and Meyers (1992) to correlate highly with the MMPI-2 Si1 subscale r(410) = .70, p< .01 (Ben-Porath et al., 1989), which is purported to be a good measure of anxiety and discomfort in social situations. Carstensen and Fremouw (1988) used the SAD in measuring social anxiety in elderly nursing home residents and found a significant negative correlation between scores on the SAD and social competence, r(23) =-.49, p < .05. Creed and Funder (1998) reported that individuals with higher SAD scores rate themselves as less sociable and having lower social presence. Internal consistency for the SAD is high, with a mean biserial item-total correlation of .77 and KR-20 of .94 (Measures of Personality and Social Psychological Attitudes, 1991). The test-retest reliability was reported to be .68 over 4 weeks (Watson & Friend, 1969). Carstensen and Fremouw (1988) reported an internal consistency of .79 (Cronbach's alpha) for the SAD based on his study on elderly nursing home residents. The estimated time for completion of the SAD is under 5 minutes.

## The Mini Mental State Examination

The Mini Mental State Examination (MMSE) was used to screen for cognitive impairment and has been validated on a broad range of diagnoses. The possible range of scores for the MMSE is 0–30. The MMSE is administered individually in an interview format. Brief measures of performance are included to assess the dimensions of orientation, concentration, visual spatial abilities, short-term memory, speech, and grapho-motor abilities. The questions or tasks employed to

provide performance measures include orientation to time, orientation to place, registration of three words, attention and mathematical calculation, recall of three words, naming of objects, completion of a three-step motor task, repeating a sentence, and drawing a three-dimensional object (Tombaugh & McIntyre, 1992). A comprehensive review of the literature developed in the past three decades has demonstrated the properties and utility of the MMSE (Millberg, Hebben, & Kaplan, 1996). Test-retest reliability estimates for intervals of less than 2 months generally fall between .80 and .95 (Tombaugh & McIntyre, 1992). The MMSE has been found to correlate significantly with other brief cognitive screening measures and intelligence scales, such as the Wechsler Adult Intelligence Scale (Spreen & Strauss, 1998; Tombaugh & McIntyre, 1992). Extensive norms for the elderly population are also available (Spreen & Strauss, 1998). The MMSE was generally administered in 5 minutes.

# **Participants**

In order to access and recruit elderly and young adult participants, it was necessary to use differential techniques. The young adult participants were recruited through college classes at a Midwest university, primarily because of ease of access and the concentrated number of young adults. The elderly population was accessed and recruited through elderly residential facilities. The facilities provided a large number of elderly and generally coordinated activities through management personnel, thus allowing for a communication channel and credibility to be established.

## Rationale for Using a Nonpatient Sample

An essentially nonpatient population was selected for this study. Using a nonpatient population in social anxiety research is fairly common in the literature (e.g., Davison & Zighelboin, 1987; Johnson et al., 1992; Schroeder, 1995; Smari et al., 1995). Social anxiety in itself is not considered pathological and is not a DSM-IV (APA, 1994) diagnostic category. In addition, there is evidence that social anxiety does exist on a continuum (Uhde, 1995), and researchers conclude that nearly everyone experiences anxiety in social encounters on occasion (Buss, 1980). Stein et al. (1994) found that within a nonclinical sample only 7% of respondents met DSM-IV criteria for social phobia, but an additional 60% felt significant anxiety in one or more social situations. As indicated above, Beidel et al. (1985) and Turner et al. (1986) discovered that socially anxious students and social phobic patients produced similar elevated responses on cognitive, behavioral, and physiological indexes of anxiety following a simulated social interaction. Finally, much of the recent research relating personality factors to social anxiety has been conducted with nonpatient samples (Truell & Sher, 1994). Thus, for the purposes of the present study, the less severe cases of social anxiety (i.e., nonpathological), were the focus of analyses.

## Young Adult Sample

The young adult participants in this study were 99 undergraduate students from a Midwest university. Undergraduate students were sampled primarily because of the high concentration of young adults, easy accessibility, and cooperative faculty members. The young adult sample was recruited through scheduled undergraduate

classes from both the Communication and Education Departments. Young adult participants ranged in age from 19 to 28 years, with an average age of 21.5 (SD = 1.9). The age of 18 years was established as a minimum in order to be consistent with the legal definition of adulthood. Age 28 was selected as the maximum age for young adults, which provided adequate inclusion and established face validity for young adults as participants in their 20s. Six participants (ages 33, 33, 40, 43, 45, and 67 years) exceeded the age maximum for young adults, and their protocols were removed from the analysis. The young adult sample was comprised of 77 females (78.5%) and 22 males (20.1%). There were no statistically significant differences detected between participants from the two departments, as indicated by one-way ANOVAs calculated for each independent and dependent variable used in the study (Table 1). A conservative p value was utilized to lessen the probability of increased Type I errors. This p value of .006 was calculated dividing the conventional .05 p value by the number of multiple comparisons (Howell, 1992).

## Elderly Sample

Fifty elderly participants from two independent living senior residence centers were recruited through organizational meetings and contacts coordinated through the housing director or the wellness director. Residents of independent living senior centers were sampled to recruit from concentrated numbers of potential subjects and ensure a generally healthy population. One senior residential center was located in the Midwest (N = 25), while the other was located in the southern United States (N = 25). Statistical analysis indicated no statistically significant differences between participants selected from the two residence centers on independent and dependent measures (Table 2).

Table 1

Comparisons of Education and Communication Subgroups:
Young Adults (N = 99)

Measure	F	Sig
SCS-SA	.015	.903
SAS	.110	.741
BSI-D	.645	.424
IBT-1	.447	.505
IBT-2	2.556	.113
IBT-6	.478	.491
SCS-P	.001	.973
FNE	1.332	.251

Table 2

Comparisons of Midwest and Southern Subgroups:
Elderly Adults (N = 50)

Measure	F	Sig
SCS-SA	.102	.750
SAS	.442	.509
BSI-D	.216	.644
IBT-1	1.833	.182
IBT-2	1.004	.321
IBT-6	.716	.402
SCS-P	.026	.873
FNE	.028	.868
MMSE	.837	.365

Elderly participants were recruited through the housing directors of each senior facility and referrals from other participants. The elderly participants were required by the senior centers to possess independent living skills, which included cognitive and physical capabilities. The ages of the elderly participants were 55 years of age and above. Nine of the 50 elderly participants chose not to provide their ages. As prerequisites for entry, the Midwestern senior residential center had an age minimum of 55, and for the Southern senior residential center, 62 years old was the age minimum. Of those 41 elderly participants who reported their ages, the average age was 80.2 years (SD = 6.8), ranging from 67-93 years. The elderly population consisted of 40 females (80%), 8 males (16%), and 2 participants who did not identify a gender (4%).

A potential confound for investigation of anxiety with the elderly is the presence of dementia. Alexopolous et al. (1995) reported mild to moderate dementia as factors that ameliorate reported anxiety levels. A preliminary screening process was conducted to ensure there were no cognitive deficits that would have impaired an elderly participant's decision capability and involvement in the study. The Mini Mental State Exam was utilized to determine cognitive capacity and was judged according to Folstein, Folstein, and McHugh (1975) criteria for generally unimpaired as a score of 24 or greater out of 30. The average MMSE score for this study was 27.66 (SD = 1.7). The MMSE was not significantly correlated with any of the dependent or independent measures, including age (Table 3), which may be a product of a restricted range due to the residential center's screening procedures for cognitive abilities and independent living skills. This lack of correlation between the MMSE and the other variables suggests that cognitive impairment was not a significant confound for this investigation. Three elderly participants were removed from the

study due to MMSE scores falling below the 24 minimum cutoff. The relatively few removals for cognitive impairment is also very likely related to the multiple levels of screening for participants (i.e., independent living skills, legal competence, management referrals, and resident referrals).

Table 3

Correlation Coefficients of Mini Mental State Exam
With Independent and Dependent Measures

	FNE	IBT-I	IBT-2	IBT-6	SCS-SA	Age	SAD	BSI-D	BSI-S
MMSE Pearson r	804	092	.078	157	.017	084	170	169	269
p value	.564	.524	.590	.275	.905	.564	.238	.240	.058

<sup>&</sup>lt;sup>a</sup>No significant correlations detected.

#### **Procedures**

## Undergraduate Procedure

The assessment battery was administered by three doctoral students in Counseling Psychology. The undergraduate student sample was obtained from formal undergraduate classes. The professor or instructor was approached concerning his or her approval of the sampling procedures. An introduction to the study and an invitation to participate were presented, along with the SCS, SAD, FNE, BSI, and IBT. The consent form (See Appendix E) was read for each recruited class, and each student was provided with a copy of the official consent form. Due to an investigational oversight, the instruments were not ordered in a standardized manner. The entire measurement battery generally took from 45–60 minutes to complete. For one group of participants, the instructor offered extra credit to students for

completion of the measurement battery, while the other professor provided no such incentive. One-way ANOVA analyses demonstrated that there were no statistically significant differences on dependent and independent measures between the students provided extra credit compared to those who volunteered without formal incentives (Table 4).

Table 4

Comparisons of Young Adult Participants With and Without Incentive:
Young Adults (N = 99)

Measure	F	Sig.
SCS-SA	.015	.903
SAS	.110	.741
BSI-D	.645	.424
IBT-1	.447	.505
IBT-2	2.556	.113
IBT-6	.478	.491
SCS-P	.001	.973
FNE	1.332	.251

## Elderly Procedure

Prior to the administration of measurement instruments with the elderly sample, meetings were held with the housing director and wellness director at each site. As indicated above, one site was located in the Midwest, while the other site was located in the Southeast. Fliers were posted around the senior center to provide information and to encourage familiarity with the project prior to recruitment (Appendix H). The informed consent sheets were given to the participants preceding

assessment. The MMSE was administered to each elderly participant individually, which presented a difficulty in recruiting large numbers of elderly participants. As an incentive, potential participants were notified that they would be entered in a drawing with a chance to win \$50. Two lotteries were conducted, one in each respective residential center. Winners were drawn randomly and paid at both the Midwestern and Southern senior residential centers.

# Research With Older Adults

The previously mentioned potential confounding variables with investigation of the elderly were considered and accounted for when developing and carrying out the research. Specifically, physical health, cognitive status, mobility, trust acquisition, and working with the "gatekeepers" (Merriam & Dimmock, 1985; Tennstedt et al., 1992). Healthy older adult populations were accessed through independent living centers, with services focusing on social involvement. The independent living centers also controlled for impaired mobility issues, as the researchers were able to travel to one central location to recruit, interview, and assess the elderly participants. The Folstein MMSE was utilized to screen for cognitive impairment and aid in selecting a sample that would be more likely to discriminate between scale points on Likert scales. Also, participants were recruited through trusted individuals within each senior residence management. The manager from the Midwestern site and the Health and Wellness Director from the Southeast were instrumental in facilitating recruitment. Both the manager and director emphasized the voluntary nature of the study. In addition, the formal security personnel for both senior residential centers provided a more secure environment to work within, thus engendering a greater level of trust. A more detailed description of the research process with the elderly is provided in the future implications section.

## Statistical Analyses

Various statistical analysis techniques were utilized, based upon the particular research question and nature of the data. Descriptive statistics, such as means, variances, and standard deviations were included in the data analysis. Frequencies, percentages, and correlation coefficients were also calculated relevant to demographic data, as well as dependent and predictor variables. The square root (SQRT) procedures were employed to approximate normal distributions for the BSI-S and BSI-I, and the log (lg10) procedure was used to approximate normal distributions for the BSI-D. The SQRT procedure returns the positive square root of scores to normalize distribution of scores. The lg10 procedure returns the base 10 logarithm of the score and serves to normalize the distribution of scores.

Multiple regression is a method of investigating the independent and collective contributions of one or more independent variables to the variation of a dependent variable (Wampold & Freund, 1987). Separate stepwise multiple regression analyses were calculated to identify the best combination of cognitive predictors of social anxiety for both groups (elderly and college students) and allowed for the testing of certain factors composing the cognitive model of social anxiety. Stepwise regression was used to allow computational decision procedures to identify which of the cognitive variables (FNE, IBT-1, IBT-6, BSI-D, and SCS-P) best predict social anxiety. Multicollinearity refers to the problematic intercorrelations among predictors in a multiple regression analysis; especially problematic are correlations > .80 (Grimm & Yarnold, 1995). A zero-order correlation table was computed for both elderly and

young adults (Tables 5 and 6) and did not indicate problematic multicollinearity for the predictor variables. Also, the scores for the BSI-D were found to be abnormally distributed, which violates an important assumption of regression analysis. The lg10 statistical procedure was utilized to establish an approximate normal distribution for the BSI-D scores prior to regression analysis.

Stepwise regression can potentially lead to capitalizing on chance when several predictors are utilized (Cone & Foster, 1993). However, this investigation utilized relatively few (five) predictors and carefully selected the predictors from the literature. Also, stepwise regression is appropriate for analysis which seeks to explain a phenomenon (social anxiety), rather than simply predicting it (Cone et al., 1993). Lastly, as Tabachnik and Fidell (1989) report, stepwise procedures are important in model-testing for early studies in a particular field, and this study of social anxiety in the elderly is consistent with their description.

One-way ANOVAs were calculated to determine significant differences between the elderly and young adult groups on all variables (using Bonferonni correction for multiple comparisons), and to determine if significant differences existed between the subelements of each sample. Pearson correlation coefficients were calculated for the BSI-D and the social anxiety measures for both samples in order to explicate the cognitive specificity of social anxiety. In order to further investigate cognitive specificity, partial correlation coefficients were calculated between social anxiety measures and the BSI-A for the young adult sample, while controlling for depression (BSI-D).

Reliability estimates were calculated for the primary independent and dependent measurement scales. Statistical reliability can be defined as the proportion of the variability in the responses to the instrument that is the result of difference in

Table 5

Zero-Order Correlations Between Independent and Dependent Measures: Elderly (N = 50)

Measure:	BSI-I	BSI-S	FNE	IBT-1	IBT-2	IBT-6	SAD	SCS-P	BSI-A
BSI-I	1.000								
BSI-S	.361*								
FNE	*90E°	.376*							
IBT-1	.462**	021	.443**						
IBT-2	215	128	025	.131					
IBT-6	**905	.449**	**605	.485**	062				
SAD	.280	.201	.515**	.478**	275	.406**			
SCS-P	.343*	.249	.393**	.226	.078	.437**	.239		
SCSSA	.443**	.188	.478**	.461**	722.	.428**	.701**	.604	
BSI-D	**869	.617**	.367**	.409**	277	.592**	.155	.246	.278

 $^{\bullet}p < .05, ^{\bullet\bullet}p < .0$ 

Table 6

Zero-Order Correlations Between Independent and Dependent Measures: Young Adults (N = 99)

Measure:	BSI-I	BSI-S	FNE	IBT-1	IBT-2	IBT-6	SAD	SCS-P	BSI-A
RSI.I	900								
BSI-S	.602**								
FNE	.467**	.188							
IBT-1	.456**	.139	.718**						
IBT-2	.211	.034	.366**	.271**					
IBT-6	.434**	.251*	.505.	**095	.397**				
SAD	.280**	.220*	.229	.332**	.286**	€998			
SCS-P	.348**	960	.589**	••\$09	.317**	.474**	.241•		
SCSSA	.430**	.261	.332**	.351**	.201	.348••	••019	.325**	
BSI-D	.582**	.576**	.282**	.305**	.186	.475**	.370**	.291**	.331**

 $\bullet p < .05$ .  $\bullet \bullet p < .01$ 

the respondents, as opposed to a result of the confusing nature of an instrument (SPSS, 1999). Cronbach's alpha was computed to estimate reliability. Cronbach's alpha essentially is based on the number of items of the instrument and the ratio of the average inter-item covariance to the average item variance (SPSS, 1999). Establishing reliability for certain scales also allowed for the norms for the elderly to be presented more accurately and provide a baseline for future comparison.

#### CHAPTER III

#### RESULTS

The results section includes statistical analyses of the differences between the groups of participants, as well as relationships between variables. Each of the null hypotheses were investigated by statistical procedures, such as one-way ANOVA, multiple regression, and bivariate correlations. Analyses were conducted to investigate the cognitive specificity of social anxiety for the elderly and young adult participants. Additional analyses were used to estimate the reliability and validity of the measurement instruments. Also, sample norms of the measurement instruments from existing literature were displayed with the results of the present study.

# **Independent Variables**

In general, the young adults reported higher levels than the elderly sample on each independent measure. The High Self-Expectations subscale of the Irrational Beliefs Test and the BSI-S exhibited no significant differences between samples (Table 7). The young adult sample reported significantly higher levels on five of seven variables, including Depression, Demand for Approval, Anxious Overconcern, Fear of Negative Evaluation and Public Self-Consciousness. Homogeneity of population variance was tested utilizing the Levene's test, and two of the independent variables (BSI-D, IBT-1) were in violation of the homogeneity assumption for the ANOVA. The square root statistical procedure was utilized to correct for the heterogeneity IBT-1 and BSI-D scores prior to statistical analyses.

Table 7

Elderly and Young Adult Comparisons on Independent and Other Measures:

Elderly (N = 50); Young Adult (N = 99)

Independent Measure	YA Mean	YA SD	Elderly Mean	Elderly SD	F	Sig.
BSI-D	5.12	4.77	2.34	2.72	15.82	.000**
BSI-S	4.55	4.91	3.00	2.70	3.76	.054
BSI-I	4.60	3.69	1.90	2.58	25.36	.000
IBT-1	29.57	6.57	26.48	5.06	7.74	.009**
IBT-2	16.21	3.63	15.56	2.54	1.29	.257
IBT-6	36.37	7.48	31.20	6.00	18.03	.000
FNE	37.59	11.02	29.28	8.38	23.45	.000
SCS-P	13.69	4.19	9.64	3.48	34.58	.000**
SCS-SA	8.23	4.62	6.84	4.38	3.126	.079
SAD	62.40	17.09	63.06	17.97	0.024	.876

<sup>\*\*</sup>p < .01.

# Cognitive Components of Social Anxiety for Young Adults

Multiple regression analysis yielded the optimal combination of independent variables to best predict social anxiety in the young adult sample. Stepwise regression was used to allow computational decision procedures to identify which of the cognitive variables (FNE, IBT-1, IBT-6, BSI-D, and SCS-P) best predict social anxiety. For the young adults, levels of depression and the irrational belief "Demand for Approval" best predicted levels of social anxiety. The results of the multiple regression analysis are seen in Table 8. Wampold and Freund (1987) present the following categories for classifying  $R^2$ : .10 (small), .30 (medium), and .50 (large).

The  $R^2$  of .152 for the combination of BSI-D and IBT-2 is considered small, but statistically significant.

Table 8

Regression Analysis: Prediction of Social Anxiety Scores (SCS-SA) in Young Adults (N = 99)

Predictors	R	$R^2$	R <sup>2</sup> Increase	Std. Beta	p
BSI-D	.325	.106*		.261	.018
IBT-1	.389	.152*	.046	.224	.042

Note. BSI-D = Depression subscale of Brief Symptom Inventory. IBT-1 = Demand for Approval subscale of IBT. \*p < .05. \*\*p < .01.

## Cognitive Components of Social Anxiety for Elderly

Multiple regression analysis yielded the optimal combination of independent variables to best predict social anxiety in the elderly sample. For the elderly sample, the irrational belief "Demand for Approval" and the Public Self-Consciousness (SCS-P) scores best predicted levels of social anxiety. The results of the multiple regression analysis are seen in Table 9. The  $R^2$  of .476 for the combination of SCS-P and IBT-1 is in the high end of moderate and accounts for a considerable amount of the variance (48%) for social anxiety levels in the elderly participants.

## Somatization and Social Anxiety

The relationship between social anxiety and somatization was not found to be statistically significant for the elderly or young adults (Table 10). The larger young adult sample may lead to a disparity in power over the smaller elderly adult sample.

Table 9

Regression Analysis: Prediction of Social Anxiety Scores (SCS-SA) in Elderly (N = 50)

Predictors	R	$R^2$	R <sup>2</sup> Increase	Std. Beta	P
SCS-P	.604	.365**	<del></del>	.553	.000
IBT-1	.389	.476**	.111	.306	.006

Note. SCS-P = Public Self-Consciousness subscale of Self-Consciousness Scale. IBT-1 = Demand for Approval subscale of IBT. \*p < .05. \*\*p < .01.

Table 10

Pearson Correlations Between Somatization and Social Anxiety Scores:

Young Adult (N = 50), Elderly (N = 50)

		SCS	S-SA	SA	<b>AS</b>
		r	Sig	r	Sig
Elderly	BSI-S	.188	.192	.201	.163
Young Adult	BSI-S	.257	.072	.201	.163

In order to control for sample size differences in calculating bivariate correlations, 50 young adult scores were chosen for bivariate correlational analysis.

## Social Anxiety Measures

With respect to the two specific measures of social anxiety, there were no significant differences between the elderly and young adult samples. Lack of difference is illustrated in Table 11, in which the mean scores for the elderly and young adults were tested using a one-way ANOVA procedure.

However, the young adult sample did score significantly higher on the Interpersonal Sensitivity subscale of the Brief Symptom Inventory (BSI-I). The BSI-I

Table 11

Comparisons of Elderly (N = 50) and Young Adults (N = 99) on Measures of Social Anxiety

Measure	Mean	SD	df	F	Sig.
SCS-SA					
Elderly	6.84	4.3769	1,147	3.126	.079
Young Adult	8.23	4.6177			
SAD					
Elderly	63.06	17.9721	1,147	0.024	.876
Young Adult	62.40	7.0939			

was used to establish convergent validity for the two measures of social anxiety. The BSI-I (see Table 7) is moderately correlated with SCS-SA and IBT-1, but is less related to SAS (Table 12).

Social Anxiety and Depression: Cognitive Specificity

The construct of social anxiety was shown to be significantly related to depression in the young adult sample, but not in the elderly adult sample. As seen in Table 13, the measures of social anxiety (SAD and SCS-SA) were significantly correlated with the Brief Symptom Inventory-Depression (BSI-D) for the young adult sample, but not for the elderly sample. It is possible that the smaller elderly sample size yielded smaller power and consequently attenuated the correlation between depression and social anxiety. However, the multiple regression analysis seen in Table 9 demonstrated the significant predictive relationship between depression and social anxiety for the young adult sample, and not the elderly sample.

Table 12

Pearson r Correlations Between Measures of Social Anxiety,
Interpersonal Sensitivity and Demand for Approval:
Elderly (N = 50), Young Adult (N = 99)

Measure	SCS-SA	SAS	BSI-I	IBT-I
Elderly				·
SCS-SA		.701**	.443**	.461**
SAS		_	.280*	.478**
BSI-I		_	_	.462**
IBT-1	_		_	_
Young Adult				
SCS-SA		.610**	.430**	.351**
SAS	_	-	.280**	.332**
BSI-I	_	-	****	.456**
IBT-1		_		

p < .05. p < .01.

Table 13

Cognitive Specificity Indicators: Correlations of Social Anxiety and Depression Scores

	Young Adults $(N = 99)$		Elderly $(N = 50)$		
	SCS-SA	SAD	SCS-SA	SAD	
BSI-D					
Pearson r	.331	.370	.278	.155	
p value	.001	.000	.051	.283	

In order to explore cognitive specificity, a similar approach to Johnson et al. (1992) was taken. Johnson et al. found that when participants were assigned to groups of high, medium, and low social anxiety, that certain depressive cognitions

underlie both depression and social anxiety. For the present study, participants were classified as higher or lower social anxiety based on a median split. Scores of 63 and above were categorized as "higher SA" and 62 and below as "lower SA." The analysis yielded statistically significant findings. For the young adults, the higher SA group had statistically significant higher depression scores, and for the lower SA group the depression scores were statistically significant lower (Table 14). However, for the elderly, there were no statistically significant differences, thus indicating that social anxiety and depression are more discrete constructs; that is, they appear to operate independently. In order to further confirm the cognitive specificity, the same analyses were run using the SCS-SA, with similar results (Table 12).

Table 14

Cognitive Specificity of Social Anxiety: BSI-D Scores for High and Low Social Anxiety

Social Anxiety Estimate	Young Adults BSI-D (N = 99)			Elderly BSI-D (N = 50)		
	Mean	F	Sig.	Mean	F	Sig.
High SCS-SA (≥8)	6.90	12.96	.001 <sup>a</sup>	3.25	3.972	.052
Low SCS-SA (≤7)	3.60			1.73		
High SAD (≥64)	6.22	5.62	0.20 <sup>a</sup>	2.72	.979	.327
<b>Low SAD</b> (≤63)	4.00			1.96		

<sup>&</sup>lt;sup>a</sup>Significance at conservative Bonferonni p value, with .05 convention divided by number of comparisons .05/2 = .025.

Cognitive Specificity of Social Anxiety: General Anxiety and Social Anxiety

A secondary research issue was Schroeder's (1995) contention that social anxiety and anxiety may not be distinct constructs. In Tables 15 and 16, the bivariate

correlations between general anxiety and social anxiety for both the elderly and young adult participants are displayed. The correlations indicate a small, yet statistically significant relationship between social anxiety and general anxiety in the young adults, but not for the elderly. Due to the significant relationship between the BSI-A and the SCS-SA for the young adults, a partial correlation analysis was employed to measure the correlation, while controlling for depression levels (BSI-D). Depression levels were controlled to partial out the variance explained by depression levels. The results of the partial correlation analysis then provided more power to investigate the relationship between social anxiety and general anxiety. When controlling for depression, social anxiety was not found to be significantly related to general anxiety for either the elderly or young adults.

### Reliability Estimates

With the exception of the IBT-2 scale, the primary independent and dependent measures provided adequate reliability coefficients for the young adult and elderly population, as measured by coefficient alpha (Table 17). Due to the number of

Table 15

Cognitive Specificity Indicators: Correlations of Social Anxiety and BSI-A Scores

	Young Adults (N = 99)		Elderly $(N = 50)$		
	SCS-SA	SAD	SCS-SA	SAD	
BSI-A					
Pearson r	.286	.257	.190	.142	
p value	.004**	.010**	.187	.327	

<sup>\*\*</sup>p < .01.

Table 16 Partial Correlations of Social Anxiety and BSI-A Scores: Controlling for BSI-D

	Young Adults (N = 99)		Elderly $(N = 50)$		
	SCS-SA	SAD	SCS-SA	SAD	
BSI-A					
Pearson r	.130	.010	.214	.072	
<i>p</i> value	.246	.928	.870	.621	

Table 17 Reliability of Primary Dependent and Independent Measures for Young Adults and Elderly

Measure	Existing Literature: Young Adults Alpha	Elderly Alpha
FNE	.90**	.85**
SAD	.95	.97 (.96** <sup>a</sup> )
SCS-SA	.79**/.78** <sup>a</sup>	.77**
SCS-P	.84**	.84**
IBT-1	.73**	.69**
IBT-2 <sup>b</sup>	.35	.14
IBT-6	.72**	.71**
BSI-D	.82** <sup>c</sup>	.83**, .77** <sup>a</sup>
BSI-S	.82** <sup>c</sup>	.86**
BSI-I	.84** <sup>c</sup>	.84**, .84** <sup>a</sup>

<sup>&</sup>lt;sup>a</sup>blpha coefficient based on replacement of missing values.
<sup>c</sup>IBT-2 omitted from analysis due to lack of reliability.

Reliability coefficients calculated from current study sample.

\*\*p < .01.

missing values for the SAD (19 out of 1,400 total questions), replacement values were calculated utilizing the linear trend method, in which the existing series is regressed on an index variable scaled 1 to 5. Missing variables are then replaced by their predicted values. The resultant alpha coefficient reliability estimates for the SAD with and without replacement of missing values were very close in value (.96, .97). The IBT-2 scale yielded a very low alpha coefficient for the elderly populations (.14) and was consequently removed from the analysis.

These reliability estimates provide some valuable and important substantiation for use of the scales with the healthy and cognitively intact elderly sample. In general, reliability scores in the range of .70–.80 are considered adequate for most research (Kaplan & Sacuzzo, 1993). The coefficients either exceed or approximate that standard, with the exception of the IBT-2. The elderly norms provided by this investigation for the respective scales can be considered more accurate than previously published given the adequate reliability estimates.

## Validity Estimates

The SCS-SA was utilized as the dependent variable in this study, with the other social anxiety measure (SAD) scores being used to calculate convergent validity for the elderly sample. The BSI-I (Interpersonal Sensitivity) is considered similar to social anxiety and was used as an additional instrument to establish convergent validity. The current study found strong evidence for convergent validity of the SCS-SA for use with both the elderly and young adult sample (Table 18). The SCS-SA was found to correlate significantly with the SAD for the young adult sample, r(99) = .61, p < .01, and the elderly adult sample, r(50) = .70, p < .01. The

SCS-SA and SAD had low correlations with the BSI-I for the young adult and elderly samples (Table 18).

Table 18

Convergent Validity of Social Anxiety Measures:
Pearson Correlation Coefficients

	Young Adult Participants (N = 99)		Elderly Participants $(N = 50)$			
	SCS-SA	SAD	BSI-I	SCS-SA	SAD	BSI-I
SCS-SA	1.00	.610**	.430**	1.00	.701**	.443**
SAD		1.00	.280*		1.00	.280*
BSI-I			1.00			1.00

p < .05. \*\*p < .01.

When the correlations between the social anxiety measures are examined, the correlations are strikingly similar for both groups of participants. The similarity of convergent validity is consistent with the equivalent reliability and indicates appropriateness for use with the elderly. These data provided valuable information in determining that the SCS-SA was measuring a very similar construct with the elderly and with college students.

## Sample Norm Comparisons

In order to provide a context of the scores in relation to previous investigations, data in Table 19 are provided for the scales used in this study. The BSI subtests are not listed because extensive norms for the elderly were available based on a sample size 585 persons over the age of 60 years (Hale et al., 1984). It is

important to note that for the current study the young adults scored significantly higher on all of the listed measures, with the exception of the SCS-SA (Table 7).

Table 19

Norms of Independent and Dependent Measures:
Present Study and Existing Literature

Measure	Young	Adults	Elderly	
	Mean	SD	Mean	SD
Brief FNE				
McNeil (1999)				
98 Undergraduates	<b>37</b> .6	11.0		
50 Elderly Adults			29.3	8.4
Leary (1983)				
150 Undergraduates	35.7	8.1		
SCS-SA				
McNeil (1999)				
99 Undergraduates	8.2	4.6		
50 Elderly Adults			6.8	4.4
Smari et al. (1995)				
396 Middle-aged Women	7.3	3.9		
Scheier & Carver (1985)				
213 Undergraduate Men	8.8	4.3		
85 Undergraduate Women	8.6	4.7		
SCS-P				
McNeil (1999)				
99 Young Adults	13.7	4.2		
50 Elderly Adults			9.6	3.5
Scheier & Carver (1985)				
213 Undergraduate Men	13.5	4.2		
85 Undergraduate Women	14.2	4.7		
Smari et al. (1995)	- · · <del>-</del>			
396 Middle-aged Women	11.8	4.5		
IBT-1				
McNeil (1999)				
99 Young Adults	29.6	6.6		
50 Elderly Adults	•		26.5	5.1
Lichtenberg (1992)				
122 Participants, ages 18–89	27.74	NA		
Lohr & Bonge (1982)		* ** *		
897 Undergraduates	30.6	6.5		

Table 19—Continued

Measure	Young A	Adults	Elderly	
	Mean	SD	Mean	SD
IBT-6				
McNeil (1999)				
99 Young Adults	36,4	7.5		
50 Elderly Adults			31.2	6.0
Lohr & Bonge (1982)				
897 Undergraduates	34.0	.59		
IBT-2ª				

<sup>&</sup>lt;sup>a</sup>IBT-2 omitted from analysis due to lack of reliability.

#### **CHAPTER IV**

#### **DISCUSSION**

#### Summary

In the present study, the underlying cognitive elements of social anxiety in elderly and young adult populations were explored using well-recognized self-report cognitive measures related to social anxiety: The Fear of Negative Evaluation Scale (FNE), the Self-Consciousness Scale (SCS), and the Irrational Beliefs Test (IBT). Regression analyses were employed to investigate the statistical differences between the elderly and young adults on cognitive measures of social anxiety and to identify the cognitive components of social anxiety for both samples. The Social Anxiety subscale of the Self-Consciousness Scale was used as the dependent variable, and the Social Avoidance and Distress scale was used to provide convergent validity. The Brief Symptom Inventory (BSI) was also administered. The Somatization subscale (BSI-S) was administered to test for somatic predictiveness of social anxiety with the elderly population. The Depression subscale (BSI-D) was utilized as a variable in the analysis of the cognitive components of social anxiety between the elderly and young adult sample. It was found that social anxiety levels for the young and elderly adults had no statistically significant differences. Somatization scores for the young adult sample were more predictive of social anxiety than for the elderly sample. In comparison to elderly adults, young adults reported statistically significant higher levels of the cognitive components of social anxiety. However, it was discovered that the cognitive components explained a greater amount of the variance in social anxiety scores for the elderly adult participants than that of the young adult participants. In addition, cognitive specificity of social anxiety was confirmed for this sample of elderly adults, while the young adult sample's scores on depression and anxiety exhibited statistically significant correlations. Discussion concerning the results of the investigation is presented and integrated with the current literature. Implications for clinical applications and future research are also provided.

#### **Description of Findings**

#### Hypothesis 1

The cognitive components of the elderly participants were expected to be lower than those of the undergraduate participants. This hypothesis was primarily based on two studies mentioned earlier. Sallis and Lichstein (1982) suggested that somatic components were more predictive of anxiety in the elderly, while cognitive components were generally more predictive of anxiety in young adults. Also, Smith et al. (1994) had reported a reduction in anxiety as individuals age, based on 123 elderly participants, ranging from 60–97 years. Nearly every measure yielded significantly lower scores for the elderly compared to young adults. The High Self-Expectations subscale (IBT-2) was the only cognitive predictor without a statistically significant difference between the elderly and young adults. Hypothesis 1 was supported, as the elderly reported lower levels on the measures of the cognitive components of social anxiety.

#### Hypothesis 2

The cognitive components of fear of negative evaluation, self-consciousness, and irrational beliefs were anticipated to be less predictive of social anxiety for the elderly sample than for the young adult sample. That is, there were predicted to be statistically significant lower relationships between the cognitive predictors and social anxiety scores in the elderly when compared to the younger sample. As mentioned prior, the cognitive factors were generally more predictive of social anxiety in the elderly, as indicated by a greater amount of the variance being explained by the cognitive predictors when multiple regression analysis was conducted. However, regression analyses indicated two cognitive factors (2/5) as significantly predicting social anxiety for both the elderly and young adults. It is possible that the multicollinearity between the cognitive predictors, while less than the recommended .80 (Grimm & Yarnold, 1995), did truncate the number of predictive cognitive factors. Hypothesis 2 was not supported, as the cognitive components of social anxiety appear to be more predictive of social anxiety in the elderly.

#### Hypothesis 3

The greater somatic loading of anxiety in the elderly postulated by Sallis et al. (1982) was speculated to be reflected in the present study by a significant correlation between social anxiety (SCS-SA, SAD) and somatization scores (BSI-S) for the elderly, but not the young adult sample. In addition, it was hypothesized that somatization scores would be at significantly higher levels in the elderly. The results obtained in this study were contrary to this prediction, as somatization scores for the young adults were found to be at the same level, but more related to social anxiety

than somatization scores for the elderly. Thus, the proposal that somatization would be more highly correlated with social anxiety in the elderly than young adults was disconfirmed.

#### Hypothesis 4

Levels of social anxiety were predicted to be not statistically significantly different for the two samples, both with and without depression scores being employed as covariates. This hypothesis was confirmed, and more detailed analyses were carried out to explore the issue of cognitive specificity of social anxiety for both the elderly and young adults. Therefore, the results of this study are consistent with the prediction that levels of social anxiety would not be statistically significantly different, both with and without controlling for the construct of depression.

#### Hypothesis 5

Social anxiety scores were predicted to have statistically significant correlations with depression scores of young adults, but not a statistically significant correlation with depression scores in elderly adults. The hypothesis was confirmed, as both measures of social anxiety had statistically significant correlations with depression scores in young adults, and neither measure of social anxiety correlated significantly with depression scores of the elderly adults.

#### **Additional Findings**

Based on the literature, a concern prior to the conducting of this investigation was that the elderly may have difficulty with Likert-style scales. Reliability and convergent validity estimates obtained for the elderly on the measures are high

enough to provide support for the use of Likert scales with the elderly (Tables 17 and 18). It is possible that the use of Likert scales did not yield unreliable and invalid results because this sample was screened for cognitive impairment through various means (independent living skills, MMSE, and referrals from other residents) and was more representative of a healthy elderly population. The suggestion of Merriam and Dimmock (1985) concerning the potential unreliability and invalidity of using Likert scales with elderly samples was not confirmed by the results of this study.

#### Summary of Results

It was hypothesized that the measures of cognitive components of the elderly sample would not correlate as highly with measures of social anxiety as those of the young adult sample. The cognitive component scores for the elderly did have weaker bivariate relationships with social anxiety measures than for the young adults. However, when multiple regression analysis was employed and the optimal combination accounting for the variance in social anxiety scores was computed, it was shown that the cognitive scores for the elderly were more predictive of social anxiety. The multiple regression results provided the combination of factors that best predicted social anxiety in the elderly, which included self-consciousness and demand for approval. Depression and demand for approval best explained the variance in social anxiety for the young adults.

Contrary to prediction, somatization was not significantly related to social anxiety for the young adults or the elderly. It is possible that the sample selection process and differences between social and general anxiety influenced these findings. These issues are discussed in the Explanations of Divergence section.

The elderly and young adult samples were found to have equivalent levels of social anxiety, based on the two measures of social anxiety used in the study. This finding was consistent with the existing literature on levels of social anxiety and young adults (Mueller & Ross, 1984). This finding is discussed in the Integration of Results section.

The issue of cognitive specificity, or discreteness of the social anxiety construct, was explored for both the elderly and young adult samples. The young adult sample demonstrated a significant relationship between social anxiety and depression. A significant correlation was also found for the young adult sample between social anxiety and general anxiety. The results of the young adult analysis were consistent with other investigators who have recently reported a lack of cognitive specificity for social anxiety (Sanz & Avia, 1994; Winton et al., 1995). The elderly did not manifest significant relationships between social anxiety and depression or anxiety, which is consistent with cognitive specificity. Young adults with high social anxiety levels had significantly higher reported depression than young adults with lower social anxiety levels. Elderly adults with high and low social anxiety levels did not report significantly different levels of depression. Overall, social anxiety does not appear to be significantly related to depression for the elderly sample, but social anxiety and depression appear to be significantly related for the young adult sample. In other words, cognitive specificity or discreteness of social anxiety was evidenced for the elderly and not the young adult sample.

The instruments employed in this investigation were found to be generally reliable for the elderly adult sample, with the exception of the High Self-Expectations subscale of the Irrational Beliefs Test. Reliability estimates for young adults on the independent and dependent measures were cited from existing literature. Overall, the

measures also demonstrated adequate convergent validity with other similar measures for both the elderly and young adult sample.

#### Integration of Findings With Literature

The finding that social anxiety levels are generally equal for elderly and young adults is consistent with the research results of Mueller and Ross (1984). However, this current study provided increased sample size and statistical power, as well as convergent validity of social anxiety instruments. This current investigation was also consistent with the Mueller and Ross study in finding that there are higher levels of public self-consciousness for young adults compared to elderly adults. An interesting point is that the elderly participants who volunteered for this study were referred by either other residents or the management. While it is difficult to determine, this selection bias may have yielded individuals less socially anxious and more willing to engage in the necessary evaluation.

The High Self-Expectations subscale (IBT-2) was reported by Lohr and Bonge (1982) as relatively low in internal consistency. The present investigation yielded an even lower alpha coefficient for the elderly participants and confirmed the unreliability of the IBT-2 for elderly adult participants. The BSI is a well recognized measure, with solid reliability and validity estimates for various age ranges, thus reliability estimates were not computed for the purposes of this study. Reliability estimates for all other primary measures were found to be nearly equivalent for the elderly compared to young adult's reliability estimates cited in the existing literature.

Results obtained supported the statements made by Powers et al. (1992) that the elderly have fewer worries about social events, and that worry is not a prominent characteristic of the elderly person's psychological functioning. Worry (IBT-6) was not found to predict social anxiety in this elderly adult sample.

Overall, the norms for the measures utilized for this study were consistent with the existing norms in the literature for the young adults and available elderly norms. Inspection of scores did indicate that the samples chosen for this study did not demonstrate drastically different norms from those in other studies, thus providing additional reliability confirmation (Table 17).

### **Explanations of Divergence**

For this investigation, somatization was not predictive of social anxiety in the elderly participants, while it was significantly predictive of social anxiety for the young adult participants. This finding is contrary to the literature suggesting that anxiety is somatically laden for elderly adults (e.g., Morin & Colecchi, 1995; Shiekh, 1996). This finding may be a product of the differences between the construct of social anxiety and general anxiety. Authors have indicated that somatic factors may be more predictive of anxiety in the elderly (Sallis & Lichstein, 1982; Sheikh, 1986). In the present study, anxiety and social anxiety were not significantly related for the elderly; thus, any speculation of somatic factors predicting social anxiety is apparently not warranted. Another explanation for this discovery is that the population chosen was selected because of good health (i.e., independent living skills and cognitive screening), which may have truncated scores on somatization and resulted in equivalent means on BSI-S. Also, the BSI-S items query levels of distress related to somatic symptoms, not the presence of somatic symptoms (Appendix G). While a young adult population would intuitively seem less inclined to have somatic

problems, it may be that the elderly population is more habituated to the presence of physical difficulties.

Chacko, Molinari, Marmion, Adams, and Moffic (1984) proposed that the elderly may simply downplay their personal feelings or withhold information about their emotional state. Their conclusion is not consistent with this present study, because the results of this investigation indicate that elderly adults appear to be willing to divulge social anxiety on equivalently (compared to young adults) reliable and valid measures of social anxiety (SCS-SA and SAD), although the present study does not rule out the possibility that elderly underreporting may occur for measures not employed in this study.

#### Contributions to Psychometric Literature

The findings of the present study do make valuable contributions to the literature in psychology. Specifically, establishing a set of norms for cognitive measures of social anxiety for use with elderly adults was achieved. Also, the study provided reliability and validity for cognitive measures of social anxiety for use with the elderly adult population. Therefore, the findings of this study will assist in conducting future research by identifying instruments to measure social anxiety that are reliable and valid for use with the elderly. The measures used in this study could be used for empirical validation of treatment outcome and other psychological research endeavors with the elderly adult population. Results from the study also have implications for psychological treatment and implementing research with elderly residential population, which will be further discussed in the Research Process and Practical Applications sections.

#### Implications of Findings

#### Cognitive Theoretical Implications

Overall, the results of this study indicate greater cognitive specificity for social anxiety with the elderly adult participants compared to young adult participants. The results were consistent with the reported results of Winton et al. (1995) and Sanz and Avia (1994), in that depression and social anxiety were not found to be discrete constructs for young adults. The results of the present study suggest that depression tends to be more predictive of social anxiety levels in young adults. When the samples were analyzed separately, it was found that young adults' depression levels are significantly higher in the higher social anxiety group, while the elderly adults' depression levels did not differ between higher and lower social anxiety scores.

Based on this study's results, the cognitive specificity question can be extended to general anxiety for the young adult participants. Schroeder (1995) questioned the usefulness of using discrete concepts for anxiety and social anxiety, suggesting they are highly related concepts. The results obtained in this study confirm Schroeder's contention for the young adult sample, because strong correlations between general anxiety and social anxiety were found. However, when controlling for depression scores, anxiety and social anxiety were not significantly related for the young adults (Table 16), which further suggests that depression and social anxiety are highly interrelated for young adults.

The elderly sample yielded disparate results in comparison to the young adult sample when measuring the relationship between social anxiety and general anxiety. Social anxiety was not found to be related to general anxiety for the elderly, which is

consistent with the lack of a significant relationship between depression and social anxiety for the elderly and provides further evidence of a discrete social anxiety construct. The results of this study are also consistent with the research of Carstensen and Fremouw (1988) with elderly nursing home residents, finding a nonsignificant correlation between social anxiety and depression. The notion that anxiety and social anxiety are indistinguishable does not appear to be confirmed for the elderly adult participants.

#### Social Anxiety Differences in Elderly and Young Adults

Interestingly, while nearly every other measure indicated higher levels for the young adult sample, the levels of social anxiety were not significantly different. It is possible that the instruments used in this study are in part explanatory of the equivalent levels of social anxiety. The SCS-SA and SAD are instruments that require the subject to speculate on social situations and their feelings and do not measure the affective experience of social anxiety. One feasible proposition is that the SCS-SA and SAD measure predispositions, or predicted social anxiety, as evidenced by items 21 and 22 of the SCS-SA: "Large groups make me nervous" and "It's hard for me to work when someone is watching me." These measures query reactions to situations not currently being experienced, and the scores on the measures were not found to differ significantly for the elderly and young adults. However, the measures of dysphoria, including depression and general anxiety, are clearly more elevated in the young adult population (Table 7). One can speculate that there are similar levels of social anxiety in social situations, as indicated by equivalent SCS-SA and SAD scores, but that the elderly and young adult samples have different social demands on them. For the elderly, it is possible that those who are more socially anxious have

greater opportunity to avoid others or not assert themselves (Furnham & Pendleton, 1983) and prevent the potential hopeless or worthless feelings (depression) that may be engendered by perceived social failure. In addition, the elderly participants in this study were all retired from full-time employment. Therefore, they may have more socially acceptable opportunities to avoid potentially threatening situations, while the young adults in this study were all enrolled in college classes and thrust into a greater number of potentially threatening social situations. For the undergraduate student, connecting interpersonally is an imperative component in class presentations, relations with faculty, and networking with potential employers. There is also a constant evaluation process for students inherent in the grading system that may engender increased dysphoria. Overall, social anxiety may be experienced at the same levels between elderly and young adults, but the resulting depression and general anxiety are more characteristic of young adults, possibly due to higher social demands.

While it is not possible to make causal inferences based on correlational data, the relationship between social anxiety, depression, and anxiety is rather pervasive. One criteria for a Major Depressive Episode is social avoidance, and the comorbidity of Social Phobia and Dysthymic Disorder (long-term low level depression) is estimated to be above 20% (Hope & Heimberg, 1993). Extrapolating from the results of this investigation, social anxiety may result in depression and general anxiety when there is a higher level of social demands. Further investigations would need to include clinical populations of elderly and young adults, as well as utilization of social experimental procedures to better gauge social anxiety.

#### Cognitive Predictors of Social Anxiety in Elderly and Young Adults

The demand for approval is considered a hallmark cognitive component of social anxiety (Leary, 1983). The results of this study confirm the salience of the demand for approval within social anxiety for both elderly and young adults. The importance of approval appears to generalize across age, which is consistent with the previously mentioned study conducted by Monti et al. (1986). Essentially, it is so important for individuals to be liked by others that the result is a constant striving and concern by the socially anxious individual to perform socially in ways that will gain approval. When accompanied by self-consciousness, appearance and impression issues may become more enhanced. The results of this study suggest that self-consciousness and demand for approval are salient components of social anxiety in the elderly, while depression and demand for approval are most predictive for young adults.

Theoretical postulations and speculation need to be developed in order to attempt explanation of cognitive differences in social anxiety for the elderly and young adults. The primary concern is how to explain the large self-consciousness component in predicting elderly social anxiety, while self-consciousness levels are statistically significantly lower in the elderly. The depression predictor is somewhat more clear for the young adult population and is consistent with extant literature concerning a lack of cognitive specificity.

Socially anxious young adults believe it is important to be accepted by others, but a large part of their thinking may be characterized by negative or depressive thoughts such as worthlessness and hopelessness (BSI-D, Items 35 and 50). Thus, social anxiety may arise out of a bleak and negative view of their situation and a

concomitant desire to be accepted by others. For the young adults, it may not be that the levels of self-consciousness are unimportant, but that they are subsumed under the demand for approval and depression factors.

While levels on SCS-P reported by the elderly generally tend to be lower, it may be that the levels of public self-consciousness in the elderly are underreported. However, the SCS was reported to not correlate with a measure of social desirability, thus contraindicating an underreporting hypothesis (Leary, 1983). The regression equation does indicate that SCS-P accounts for the majority of the variance of social anxiety in the elderly. It may be that for some elderly adults, self-consciousness about loss of physical functioning, changes in physical appearance, and normal age-related cognitive changes all contribute to social anxiety. Conceptualizations of social anxiety require modifications for the elderly, including sensitivity to normal changes and concerns.

#### Research Process

The experience of carrying out research with the elderly retirement center was both challenging and enlightening. Traversing the obstacles of access, connection, recruitment, and follow-up often seemed herculean. Developing and writing the proposal for research involved consultation with doctoral committee members. It was important to structure the research protocol in order to maintain consistency with legal and ethical parameters, such as privacy and competency. In order to ensure that the elderly adults were able to provide consent to participation in the study, it was determined that elderly individuals would be cognitively intact and possess independent living skills. Because of the safeguards of this study preventing protected populations from participating, the assurance of anonymity, and the use of

questionnaires for data collection, the proposal was granted "Exempt" status by the Human Subjects Institutional Review Board without a need for further revisions (Appendix A).

One of the most prominent adversities was presenting the "gatekeepers," or the management of the senior residential centers, with my proposal to procure permission and official sanctioning. Certain protocol and approaches were helpful in facilitating these research goals. It was imperative to establish a degree of credibility with the management or ownership at each residential center. The manager from the Midwest senior residential center was familiar with a faculty member from my university, which basically opened the door for me. Following a thorough presentation of my proposal, I sought the assistance of the manager to co-present my research to a general meeting for the residents. The initial research involved myself and an advanced female doctoral student with exceptional interpersonal skills. As most of the residents were female. I believe the gender balance of the research team was helpful in establishing trust and facilitating recruitment. The Southern residential senior center began with a phone call to the owner and a brief presentation of the proposal. Once the owner was apprised of the safeguards of the study (legally competent, independent living skills), she was comfortable in referring me to the Health and Wellness director. The director was then able to inform the residents of my research project both formally and informally.

Following the initial obstacles, the more laborious steps began. Meetings with residents were coordinated to introduce the study, present the informed consent document, and administer the MMSE. The research required a high degree of schedule flexibility. Maintaining adherence to security protocol was important, such as signing in at the front desk. Patience was important, as a number of residents

required changes in the schedule for various reasons. Also, many of the elderly residents were willing to participate if they were able to talk about the research and the idea behind it.

There is a natural tendency to focus on numbers in quantitative research and ignore the importance of the personal contact. Conventional research protocol common for college students is not necessarily viable with the elderly in residential centers. The primary recruiting tool for the elderly was word of mouth. Establishing rapport with one resident yielded nearly half of my elderly resident sample. One resident in particular told me in so many words that psychological instruments were invalid and primarily worthless, because you "can't know the real person." I simply related to her that in a lot of ways tests have been misused and that we are simply looking for trends in the data. I let her know that I respected her opinion, but that I was still interested in her responses. I left that day thinking she would probably never complete her survey. To my surprise, she completed the survey and left it at the front desk for me to pick up. Haste and impatience are very counterproductive in working with elderly individuals in residential centers. When the elderly adults were approached as individuals with experience and acquired wisdom, their responses were consistently positive. It must be communicated to them that the researcher respects them enough to explain the research ideas to them individually.

#### **Applied Implications**

As this current study is augmented with further research, cognitive treatment models for the elderly can be tailored more to thoughts and beliefs relevant to social anxiety. Inherent to social anxiety is a tendency toward reticence, and elderly adults come from a generation less open to psychological treatment. Thus, elderly adults are

not likely to disclose problems with social anxiety. Psychological treatment gains in general can be stifled by failing to disclose due to pervasive problems with social anxiety. Accessing social support (including counselors) and interpersonal relationships are imperative in the mental health of elderly. Therefore, treating social anxiety in the elderly may include focusing on a set of cognitive distortions disparate from that of a population of younger adults. Assuming a certain set of cognitive variables that are based on young adults may limit treatment efficacy and prevent adequate assessment. Therefore, the tentative postulations provided by this study include the necessity of focusing on self-consciousness and demand for approval in therapy when treating social anxiety in the elderly.

Group therapy is used effectively to treat social anxiety problems. Group cognitive-behavioral therapy (CBGT) has been found to be effective in the treatment of social anxiety in nonelderly samples (Hope & Heimberg, 1993). Potential modifications of CBGT in the treatment of social anxiety need to reflect some of the differences in social context for the elderly. While the elderly social context may include fewer demands for interaction, behavioral social skills groups may still provide an opportunity to enhance interpersonal comfort. Especially in residential homes where social isolation is more prevalent, social skills groups would be beneficial. Additionally, if age-related physical and cognitive limitations are primary factors in self-consciousness and social anxiety for the elderly, the universality of group therapy may provide an effective treatment modality. Universality, or commonality of experience, is considered to be a primary therapeutic factor in group therapy (Yalom, 1995). Elderly group participants would also have the opportunity of assisting one another in cognitive reframing and problem-solving of difficult social experiences. Lindesay (1995) reported significant improvement for elderly individuals

with anxiety disorders treated with cognitive therapy, but no specific studies focusing on group therapy for social anxiety in the elderly were located. Future research could include group therapy in the treatment of social anxiety in the elderly.

The use of objective measures provides a useful means for the elderly to communicate their difficulties. The conclusions of this study are consonant with the notion that psychological instruments can be both reliable and valid for elderly and young adults alike. Establishing norms, reliability, and validity for standardized instruments for use with the elderly is essential and consistent with the APA ethical guidelines.

Psychology can provide some unique contributions to mental health care for the elderly. Standardized psychological assessment is a unique role for psychology, and its applications to the elderly are in their formative stages. The utilization of valid and reliable assessment instruments with elderly populations, such as those employed in this study, can provide manifold benefits. Ben-Porath (1997) enumerates some of the advantages standardized psychological assessment offers mental health treatment as (a) consistency, (b) validity, and (c) systematic assessment of therapeutic outcome. Standardized instruments equip the practitioner with a consistent set of questions that can prevent many subjective confounds. Psychological instruments provide superior validity, in that there can be established correlations with other instruments (convergent validity) and other criterion measures, such as behavioral rating scales. Also, clinical interviews have been found to yield less valid data when compared with standardized testing procedures (Grove & Meehel, 1996). Lastly, in the era of managed care, standardized testing can provide empirical grounded information to inform treatment planning and demonstrate therapeutic efficacy. Each of the above advantages is germane to treatment with the elderly. The need for assessment

strategies becomes particularly prominent as mental health professionals are increasingly called upon to offer clinical judgments regarding an older person's retirement, nursing home placement, or the management of his or her day-to-day affairs (Morin & Colecchi, 1995)

#### Limitations

#### Design and Internal Validity

One limitation for internal validity is the recruitment design. First of all, there was a selection bias, in that the elderly participants who participated were either referred by other residents or the management, which most likely yielded the more socially adept individuals. The college students were able to complete the battery during class time and the completion of the research involved no additional commitment. For the elderly, each subject was required to go through an individual administration of the MMSE, as well as completion of the battery. The differential administration procedures and recruitment techniques may have implications for levels of social anxiety, and the potential does exist for an underestimation of social anxiety levels in the elderly.

Another significant limitation for this study in terms of internal validity is the lack of standardized ordering of the measurement instruments. It is possible that the inconsistent ordering of the instruments for the young adults resulted in biased results. There is evidence from the literature, such as the report by Osberg (1995), that SCS scores can be affected by ordering. However, the generally equivalent internal reliability and convergent validity estimates for the elderly and young adults

seem to contraindicate significant bias due to ordering effects. Varying the order of the instruments systematically may have controlled effectively for ordering effects.

#### External Validity and Generalizability

Any generalizations to elderly individuals would have to be tenuous for those who do not fit the general demographic profile of this elderly sample. Of the 50 elderly individuals, only one African-American completed the questionnaires. However, the participants were not queried as to their self-identified ethnicity. Socioeconomic status was estimated based only on the subjective observation of the facilities. These limitations attenuate the generalizations that can be made to other populations of elderly individuals.

When considering the implications of differences in the elderly, it is important not to overstate or misconstrue the results. The cohort effect, or maturational change (age) being confounded with historical trends (Schaie, Campbell, Meredith, & Rawlings, 1988), is relevant to all conclusions drawn regarding elderly participants. Differences may be a product of developmental processes or even the effects of marginalization or discrimination based on ageistic assumptions. For example, the levels of social anxiety may be underreported by elderly adults due to the attitudes of mental health problems in the 1950s. Longitudinal studies and investigations into the attitudes and socialization of historical cohorts would certainly be valuable future research.

#### Analyses and Statistical Power

The sample size for this investigation was considerable in comparison to other comparable investigations with the elderly. The statistical power for one-way

ANOVAs used to examine differences between the elderly and young adult participants was above .93 and considered acceptable. However, the number of participants was at the lower end of suitability for utilizing regression analysis.

Another issue relevant to multiple regression analysis was the nonnormal distribution of the BSI-D. The lg10 statistical procedure was utilized and normalized the distribution of scores relatively well.

#### Measurement

With the exception of the BSI, the measurement instruments utilized for this investigation were generally normed with a college or young adult population.

Although limited reliability and validity data were reported for certain instruments, it is often difficult to predict reliability or validity of instruments for use with samples on which the instrument is not normed. Fortunately, reliability estimates for the elderly on the independent and dependent measures (with the exception of the IBT-2) were similar to those of the young adults. This study also established estimates of convergent validity for the primary instruments and other instruments measuring highly similar constructs. This investigation also provides some preliminary norms for healthy elderly populations on the FNE, SCS-P, SCS-SA, IBT-1, IBT-2 and the SAD.

#### **Future Directions**

In future investigations of social anxiety in the elderly, a multimethod experimental approach would be most effective. Davison and Zighelboin (1987) reported that young adults who tended to feel anxious during social situations expressed more irrational thoughts than did controls. This finding implies that the

actual process of social interaction may elicit more experientially valid cognitive constructs. Further bolstering the importance of behavioral experiments, Beidel et al. (1985) found that socially anxious individuals, when involved in a series of interpersonal tasks, reported fewer positive thoughts; their cognitions were more likely to be characterized as negative, and their thoughts were generally related to lack of social skills (Beidel et al., 1985). Also, including behavioral observations and rating scales within natural and experimental environments would aid in establishing additional ecological validity.

The question of cognitive specificity or discreteness of the social anxiety construct requires a great deal more investigation. The current investigation yielded some interesting statistical trends indicating greater discreteness of social anxiety for the elderly compared to young adults, but must still be considered tenuous due to the moderate sample. In the future, studies of cognitive specificity in the elderly should include larger sample sizes and cross-validate findings with other measurement techniques, such as behavioral observations and physiological measures (e.g., blood pressure, heart rate).

Correcting the limitations of this current study would be imperative in future investigations, especially if generalizations were to be made beyond a limited and circumscribed population of elderly adults. Admittedly, expanding this research would take a great deal more time and resources. Foremost is a larger and more diverse sample of elderly participants. Statistical conclusions and external validity are significantly attenuated without a larger sample. Recruitment of elderly males, the inclusion of racial and ethnic minorities, and recruitment of participants from disparate levels of socioeconomic status are all required to further generalize findings from social anxiety research. Additional demographic information would have been

valuable, such as marital status, education level, physical diagnoses, and prescribed medications, especially for the elderly.

While this investigation did yield some valuable information, the independent variables failed to explain a large amount of the variance in social anxiety levels, especially for the young adult participants. One possible construct to include in future research is self-esteem. Leary (1983) cited self-esteem as an integral etiological component of social anxiety. Self-esteem was not included in this investigation primarily because of its general lack of recognition in the psychological literature as a cognitive factor and the need to maintain brevity of the measurement battery to optimize completion rates.

Regardless of the specific age group under study, a pervasive tendency toward ageism still exists in society and consequently may taint gerontological research. The elderly are often seen as more dependent, less flexible, and resistant to change, and are thought to have untreatable disorders (Ferraro, 1990). Future research of social anxiety in the elderly could focus on ageism and marginalization of the elderly in society and could explore some of the ramifications of social avoidance and social anxiety. Of specific interest may be the internalization of ageistic assumptions and their interaction with social isolation.

# Appendix A

Approval Letter From the Human Subjects Institutional Review Board

Kalamazoo, Michigan 49008-3899

# WESTERN MICHIGAN UNIVERSITY

Date: 8 June 1998

Jeffrey McNeil, Student Investigator To:

From: Richard Wright, Chair

Re: HSIRB Project Number 98-05-18

This letter will serve as confirmation that your research project entitled "Cognitive Components of Social Anxiety: A Comparison of Elderly and Young Adults" has been approved under the exempt category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: 8 June 1999

## Appendix B

Approval Letter for Project Revisions From the Human Subjects Institutional Review Board

Human Subjects Institutional Review Board



Kalamazoo, Michigan 49008-3899

# WESTERN MICHIGAN UNIVERSITY

Date: 3 November 1998

To: Robert Betz, Principal Investigator

Jeffrey McNeil, Student Investigator for dissertation

From: Sylvia Culp; Chair Sylvin Relp

Re: Changes to HSIRB Project Number 98-05-18

This letter will serve as confirmation that the changes to your research project "Cognitive Components of Social Anxiety: A Comparison of Elderly and Young Adults" requested in your electronic mail message and FAX dated 27 October 1998 have been approved by the Human Subjects Institutional Review Board.

The conditions and the duration of this approval are specified in the Policies of Western Michigan University.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: 8 June 1999

Approval Letter From Crossroads Village



May 15, 1998

RE: Study Investigating the Cognitive Components of Social Anxiety in the Elderly and College Students.

Dear Proposal Review Committee;

As manager of Crossroads Village, I am contacting you to express my support for the research Mr Jeff McNeil is proposing to complete at our facility. I have discussed the parameters of the proposed study and am in full support of each of them. I believe the objectives, steps and time tables contained in the proposal are reasonable and achievable. Mr. Jeff McNeil has outlined his research procedures and has my full participation.

I understand that Mr. Jeff McNeil's study will be carried out with subjects who are legally competent. I will assist Mr. Jeff McNeil in recruiting subjects, and will maintain contact with him throughout the project.

This research study is clearly appropriate for completion with our facility. If you have any questions or concerns regarding my support or involvement in this study, please call me at (616) 327-2100.

Sincerely.

Connie Jo Bowman

Manager

# Approval Letter From Brandon Wilde



October 26, 1998

Re: Study Investigating the Cognitive Components of Social Anxiety in the Elderly and College Students.

#### Dear Proposal Review Committee:

As Wellness Director of Brandon Wilde, I am contacting you to express my support for the research Mr. Jeff McNeii is proposing to complete at our facility. I have discussed the parameters of the proposed study and am in full support of each of them. I believe the objectives, steps, and timetables contained in the proposal are reasonable and achievable. Mr. Jeff McNeii has outlined his research procedures and has my full participation.

I understand that Mr. McNeil's study will be carried out with subjects who are legally competent. I will assist Mr. McNeil in recruiting subjects, and will maintain contact with him throughout the project.

This research study is clearly appropriate for completion with our facility. If you have any questions or concerns regarding my support or involvement in this study, please call me at (706) 868-3537.

Sincerely

Buck Dougherty
Weilness Director

BD:psn

# Appendix E

Copy of Informed Consent Document

College of Education
Counselor Education and Counseling Psychology

Kalamazoo, Michigan 49008-5195 616 387-5100

# WESTERN MICHIGAN UNIVERSITY

You are invited to participate in a research project entitled "Cognitive Components of Social Anxiety: A Comparison of Elderly and Young Adults." This study focuses on thoughts and ideas concerning yourself and your interpersonal interactions. The present study is being conducted by Jeff McNeil for his doctoral dissertation research, and is being supervised by the principal investigator, Dr. Robert Betz. Dr. Betz is a faculty member in the Department of Counselor Education and Counseling Psychology.

Participation in this study will require you to complete 5-6 questionairres measuring your thoughts and ideas, particularly about yourself and your interpersonal interactions. Completion of the questionnaires will take approximately 45 minutes. Your replies will be completely anonymous, so do not put your name anywhere on the form.

You may refuse to participate or quit at any time during this study. In no way will your decision on whether or not to participate in the present study effect your grade in this undergraduate class. Your completion of the aforementioned questionnaires indicate your implicit consent to participate in this study and your consent for use of the answers you supply. If you have any questions, you may contact Dr. Robert Betz at (387-5107), Jeff McNeil at (387-5100), the Human Subjects Institutional Review Board (387-8293) or the Vice President for Research (387-8298).



# Appendix F

Permission Letter for Reproduction of Brief Symptom Inventory Items



April 9, 1999

Cpt Jeff Mc Neil Outpatient Psychology EAMC Ft. Gordon, Ga 30905

Dear Cpt. Mc Neil

National Computer Systems, Inc., being the exclusive publisher and distributor of the BSI® (Brief Symptom Inventory) test, hereby grants you permission to reproduce up to five (5) items from the BSI test in your doctoral dissertation.

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If you have any questions, please call me at (612) 939-5114 or I-800-627-7271 x. 5114.

Sincerely,

Kathy Eback

**Product Support Specialist** 

Kathy Elack

Assessments

5605 Green Circle Drive Minnetonka, MN 55343 612-939-5000

Appendix G

Copy of Brief Symptom Inventory Items

# Brief Symptom Inventory®: Depression, Somatization and Interpersonal Sensitivity Items

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NOTE: Due to copyright restrictions, only 5 items may be presented.

Paraphrased Directions: The following is a list of problems people sometimes have. Please read each one and blacken the circle that best describes HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU IN THE PAST 7 DAYS INCLUDING TODAY.

#### Representative Items of the BSI-Depression Subscale

- 35. Feeling hopeless about the future.
- 0=Not at all, 1=A little bit, 2=Moderately, 3=Quite a bit, 4=Extremely
- 50. Feelings of worthlessness
- 0=Not at all, 1=A little bit, 2=Moderately, 3=Quite a bit, 4=Extremely

#### Representative Items of the BSI-Somatization Subscale.

- 29. Trouble getting your breath
- 0=Not at all, 1=A little bit, 2=Moderately, 3=Quite a bit, 4=Extremely
- 37. Feeling weak in parts of your body
- 0=Not at all, 1=A little bit, 2=Moderately, 3=Quite a bit, 4=Extremely

#### Representative Item of the BSI-Interpersonal Sensitivity Scale

- 42. Feeling very self-conscious with others
- 0=Not at all, 1=A little bit, 2=Moderately, 3=Quite a bit, 4=Extremely

Appendix H

Copy of Recruitment Flier

TO: ALL CROSSROADS RESIDENTS

FROM: Jeff McNeil

RE: Opportunity to be involved in a study with a Western

Michigan

University Student, and possibly win \$50.

I would like to invite all residents of Crossroads Village to participate in a study entitled "Cognitive Components of Social Anxiety: A Comparison of Elderly and Young Adults." This study will require a brief interview and in most cases filling out five questionnaires. Each participant who completes all of the questionnaires will be entered in a drawing to win \$50. All interested persons can either sign up on the sheet below, or tell me in person that you would like to be involved in this study. I appreciate your consideration and hope to speak with you in the future.

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