SOMATIC COMPLAINTS IN OLDER ADULTS:

AGING PROCESS OR SYMPTOMS OF DEPRESSION

A Senior Honors Thesis

by

Ruth Anne Gentry

Submitted to the Office of Honors Programs
& Academic Scholarships
Texas A&M University
In partial fulfillment of the requirements of the

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RESEARCH FELLOWS

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Group: Psychology

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ABSTRACT

Somatic Complaints in Older Adults:

Aging Process or Symptoms of Depression? (April 2001)

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This study examined the efficacy of somatic symptoms on a new measure of depression designed specifically for older adults. Resent research has shown somatic symptoms to be accurate predictors of depression in older adults, yet they have been excluded from measures assessing depression in older adults. Somatic symptoms have been omitted because of the problem of distinguishing specific symptoms related to depression in older adults, than symptoms that reflect physical decline due to aging or illness. The purpose of this present study was to test the reliability and validity of a new depression measure that does not exclude somatic symptoms. Two studies were conducted, a preliminary study which examined the reliability of the new measure. Based on those results, the scale was modified for the primary study, which re-assessed the scale reliability and examined scale validity. Participants in the primary study were older adults living in nursing homes and in the community. They were given the new

scale of depression along with two commonly used measures of depression, the Geriatric Depression Scale (GDS) and the Beck Depression Inventory-II (BDI-II). Somatic items were reliable as indicated by high item-scale correlations, and the new scale had concurrent validity as indicated by significant correlations with the BDI-II and GDS. The results refute the assumption that somatic symptoms of depression are poor indicators of depression in the elderly, and suggest caution when omitting somatic symptoms of depression from measures designed specifically for older adults. The controversy of excluding somatic symptoms when assessing depression in older adults should be resolved by distinguishing somatic symptoms of depression from symptoms due to declining health or aging.

DEDICATION

I want to thank my parents, Martha and Ron Gentry, for their support and love they have given me throughout my college years. I especially want to thank the person who has supported me the most and my best friend, B.J. Rager. He has been patient with me through all the times I just "didn't have time" while always being so understanding. I can not thank him enough for the support he has given me for so many years.

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I want to acknowledge my advisor, Dr. Margaret Norris, for all the time and effort she has put into this project with me. Without her this project would not have been possible. I thank her for allowing me to work with her on evaluating the new Older Adult Scale she designed. She was not only my teacher this year, but my mentor and I thank her for all the kind patience she had for me through out my frustrations.

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INTRODUCTION

The 20th century experienced a rapid explosion in the number of people living to be older than 65 years of age, and this rise in older adults will be minimal compared to the increase expected of the "baby-boom" generation in future decades. A high standard of living, better medical treatment, and a decrease in the mortality rate have resulted in more people living into their old age. With the increase in the elderly population, there will also be more people developing psychiatric problems late in life. Depression is one of the most frequently occurring psychiatric problems among the elderly (Berger, Small, Forsell, Winblad & Backman 1998), and the upcoming baby-boomers are expected to have an even higher risk of depression than the current population of older adults (Klerman & Weissman, 1989).

The increase in psychiatrically ill older adults in expected to rise by 275%, from 4 million in 1970 to 15 million in 2030 (Jeste, Alexopoulos, Bartels & Cummings 1999). Depression in the elderly is often difficult to diagnose because neither the health care provider nor the older adult may recognize its symptoms in the context of the many physical problems. The diagnosis and treatment of depression in the elderly is most often made in primary care settings in which detection is frequently poor. For example, in a recent study general practitioners identified depression in only 51% of depressed patients (Crawford, Prince, Menezes & Mann, 1998). Therefore, more research is needed in the

area of geriatric depression to improve diagnostic methods used by clinicians treating older patients.

Because older adults experience many physical problems that are common in late life, health care providers often conclude that depression is a normal consequence of these health problems. In addition to declining health, older adults may experience reduced income, less autonomy, loss of loved ones, and increasing attentiveness to one's own mortality. With these problems related to the aging process, it could easily be assumed that older adults are more depressed than other age groups. However, it has not been established that the elderly have a higher rate of depression (Zemore & Eames, 1979). Trying to clearly diagnose depression in older adults has been challenging because differences in the symptomatology of depression between younger and older people exist (Oxman, Barrett, Barrett, & Gerber, 1990; Gottfries, 1998; Newmann, Engel, & Jensen, 1991). There are recognized symptoms of depression that vary across the life span with older adults exhibiting more somatic symptoms of depression than younger adults (Bolla-Wilson & Bleecker, 1989).

Although researchers may agree that older adults have different symptoms of depression, the controversy lies in pinpointing which symptoms are specifically related to depression rather than physical decline. Sad mood, the typical signature of depression, may be less prominent than somatic symptoms of depression in older adults. Somatic symptoms include sleep and appetite disturbances, anhedania, loss of interest, and fatigue. In older adults these somatic symptoms may coexist with other illnesses and disabilities causing somatic complaints to be signs of physical decline, but also

indicators of depression. Nevertheless, it has been reported that multiple somatic items evaluating diminished energy, sleep disturbances and health worries were valid indicators of depression in the elderly (Norris & Woehr, 1998). The dilemma facing physicians today is to distinguish somatic symptoms of depression from somatic complaints due to illness and the normal aging process.

The three most common symptoms of major depression in young and middle-aged adults are sleep disturbance, loss of energy, and appetite change; all of which are somatic complaints (Buchwald & Rudick-Davis, 1998). Despite this knowledge, the Geriatric Depression Scale (GDS) was developed to diagnose depression in older adults by excluding all somatic symptoms. It rests on the assumption that somatic symptoms reflect the normal aging process or confounds due to illness, and thus are poor indicators of depression for elderly adults. However, by eliminating somatic symptoms, the GDS may under-diagnose depression in the elderly because somatic complaints have recently been shown to be valid symptoms of depression in older adults (Norris & Woehr, 1998; Norris, Snow-Turek & Blankenship, 1995; Koenig et al., 1993). This research examined the efficacy of somatic symptoms of depression by testing the reliability and validity of individual items on a new measure of depression designed specifically for older adults

Preliminary Study

METHOD

Participants

Participants were 69 young adults and 53 older adults. The young adults were collected from an introductory psychology class at a large university in Texas. The young adults received partial class credit for participating in the study. The older adults were obtained from a senior organization in the community. The young participants ranged in age from 18 to 29 ($\underline{X}$ = 20, $\underline{SD}$ = 1.8). The age range for older adults was 64 to 86 ($\underline{X}$ = 74, $\underline{SD}$ = 5.6). There were 46 males and 76 females who participated in this part of the study.

Measures

Older Adult Depression Scale (OADS) The OADS is the newly designed scale with the purpose of measuring depression in older adults. (See Primary Study for full description).

Procedure

Both young and older adults were given the original version of the OADS (see Appendix A) to assess reliability as measured by item-scale consistency. All the participants were tested in large groups, taking the OADS individually. All the participants were provided informed consents, participated voluntarily, and were debriefed about the study.

RESULTS

Item-scale correlations were calculated on individual items on the OADS to evaluate item consistency (see Table 1). The alpha computed for the scale was high (.87) indicating all the items together make up a consistent and reliable measure. Individual items with item-scale correlations greater than .3 were considered to have good discrimination (Nunnally & Bernstein, 1994). Four of the six items with low scale correlations were psychological, "hopeful about the future" ($\underline{r}$ = .2), "glad to be alive" ($\underline{r}$ = .25), "prefer to be alone" ($\underline{r}$ = .21), and "people like you" ($\underline{r}$ = .09). The somatic items with low scale correlations were "sleep too much" ($\underline{r}$ = .24), and "feel best in the mornings" ($\underline{r}$ = .19). The range of scores on the OADS for older adults was from 0 to 23 ($\underline{X}$ = 6.2, $\underline{SD}$ = 5.0) and the range for young adults was from 1 to 26 ($\underline{X}$ = 6.8, $\underline{SD}$ = 5.1). The difference in age between young and old adults was not significant on the OADS ($t(120) = .71$, $p = .47$). Age differences were also nonsignificant in comparing somatic ($t(120) = .12$, $p = .91$) and psychological items ($t(120) = 1.32$, $p = .19$). When comparing individual items for older adults, somatic items ($\underline{X}$ = 3.7, $\underline{SD}$ = 3) were on average slightly more endorsed than psychological items ($\underline{X}$ = 2.5, $\underline{SD}$ = 2.4). The difference in endorsement between somatic and psychological items by older adults was significant ($t(52) = 3.64$, $p < .001$). Somatic items were also endorsed at a higher rate by young adults ($t(68) = 2.56$, $p < .01$).

Table 1. Item-Total Correlation of First Version of Older Adult Depression Scale

1. Do you feel hopeful about the future?	***.2***
2. Are you interested in many of your normal activities?	.55
3. Do you feel sad much of the time?	.51
4. Do you have low energy or feel slowed down?	.33
5. Do you feel disappointed in yourself?	.56
6. Is your appetite good?	.35
7. Do you think your life has been successful?	.46
8. Do you feel tired or worn out?	.34
9. Are others pleased with you?	.36
10. Do you sleep too much?	***.24***
11. Do you criticize yourself too much?	.40
12. Is it fairly easy for you to make decisions?	.42
13. Are you glad to be alive now?	***.25***
14. Pleasure from doing things you used to enjoy?	.44
15. Do you cry more than you used to?	.40
16. Is your concentration as good as it used to be?	.49
17. Are you in a happy mood most days?	.58
18. Is it hard for you to start new activities or projects?	.50
19. Do you feel worthless?	.39
20. Is your sleep restless?	.37
21. Do you prefer to be with others than be alone?	***.21***
22. Do you feel best in the mornings?	***.19***
23. Do you worry about what will happen in the future?	.30
24. Is it an effort to do most things?	.50
25. Do you regret things that happened in the past?	.30
26. Is your life interesting and enjoyable?	.53
27. Do you feel lonely?	.48
28. Is it hard for you to get going?	.50
29. Do most people like you?	**.09**
30. Do you have positive outlook?	.54

SUMMARY

The preliminary study was conducted in order to evaluate the reliability of items on the OADS prior to the primary study, the main focus of this research. Data was collected from both young and older adults to obtain a large sample in order to run a reliability analysis on the OADS. The item-scale correlations revealed a high alpha for the OADS, indicating the OADS items make up a scale. The items that produced poor item-discrimination were subsequently modified to improve the scale for the primary study. Items with low item scale correlations were rewritten while keeping the somatic or psychological nature of items intact. Most of the items were revealed to be consistent with the overall measure of depression and, the OADS was found to be a reliable measure of depression. The mean scores for older and younger adults on the OADS were comparable, and age differences were found to be insignificant. Both age groups endorsed psychological and somatic symptoms of depression, but t-tests revealed somatic items were endorsed at a higher rate than psychological.

Primary Study

METHOD

Participants

Participants were 72 older adults divided into two groups: community-dwelling and institutionalized adults. The community participants resided in either private homes or a retirement home for independent living. The community participants were recruited through a senior citizen organization in the community and a retirement home. To obtain a diverse representation of the institutionalized adults, participants were included from three different nursing home facilities. A list of cognitively-intact participants were provided by the social services department at the facility. Participants were then asked for their consent to participate in a study evaluating mood in older adults.

The age range for community-dwelling participants was from 62 to 92 years ($\underline{X}$ = 75, $\underline{SD}$ = 9.1) and for institutionalized participants the age range was from 57 to 93 years ($\underline{M}$ = 78, $\underline{SD}$ = 9.6). There were 53 female participants and 19 male participants with education levels ranging from second grade to college degree. Fourteen percent of the sample had less than 9 years of education, 41% had some high school education or graduated from high school, and 45% had some college education or were college graduates. Activities of daily living (ADLs) were accessed for institutionalized adults to examine individual levels of functioning. The ADL score indicates the number of activities the older adults receives assistance with (e.g., going to the bathroom, getting

dressed, managing money, etc). Higher the ADL scores indicate more assistance is provided to the older adult. The ADLs range was from 0 to 10 ($\underline{X}$ = 7.4, $\underline{SD}$ = 2.5).

Measures

Geriatric Depression Scale (GDS) (see Appendix B). The GDS is a 30-item depression measure designed specifically for older adults. The GDS is recognized as a favorable measure of depression for older adults due to its uncomplicated yes-no format. Items include cognitive and affective symptoms of depression with the exclusion of somatic symptoms. The cutoff score of 11 or greater indicates depressive symptomatology (Brink, Yesavage, Lum, Heersema, Adey, &Rose, 1982).

Beck Depression Inventory II (BDI-II) (see Appendix C). The BDI-II is a 21-item scale divided into two subsets of items: items 1 through 15 are psychological and items 16 through 21 are somatic. The BDI-II is one of the most widely used measures of depression assessing cognitive, affective, behavioral, and somatic symptoms (Norris & Woehr, 1998). The total score is the sum of the rating levels (0, 1, 2, 3) endorsed on each item. The conventional cutoff score of 11 was used to classify participants as depressed or non-depressed for BDI-II analyses (Norris & Woehr, 1998).

Older Adult Depression Scale (OADS) (see Appendix D). The OADS is a newly designed 30-item scale intended specifically for assessing depression in older adults. The OADS was a modified version of the original scale used in the preliminary study based on item-scale correlations. The OADS is designed to tap a range of both psychological and somatic symptoms of depression. Even items are somatic and odd items are

cognitive or psychological indices of depression. OADS incorporates the strengths of both the BDI-II and GDS by including somatic symptoms of depression, while having the yes-no format found to be easier for older adults to comprehend. A cutoff score of 12 was used to classify depression in participants. This cutoff score of 12 was chosen because the conventional cutoff score for the GDS is 11 and, on average, older adults scored a point higher on the OADS compared to the GDS.

Procedure

The community-dwelling adults answered the depression measures individually in large groups. The institutionalized older adults were all tested individually and participants either read the items themselves or the experimenter read the questions to them. All participants were given an informed consent form, debriefing form, and participated voluntarily. The order of the OADS, GDS, and BDI-II were counterbalanced to eliminate order effects.

RESULTS

Item Analyses

Two item analyses, item-scale correlations and hit rates, were calculated. Item-scale correlations were conducted in order to examine the consistency of individual items, with items scoring .3 or greater recommended as a marker for discriminating items (Nunnally & Bernstein, 1994). Item-scale correlations provide a measure of item discrimination by indicating the consistency and reliability of an item in relation to the total measure. Positive, negative, and total hit rates were also calculated to examine the efficiency of individual items to classify depression. Positive hit rate is the probability of depression given the endorsement of a particular item. Negative hit rate is the probability of non-depression given the item is not endorsed. The total hit rate is a combination of both positive and negative hit rates. Total hit rates improve the efficiency of diagnosis if the item exceeds the base rate of depression. The base rate is the percentage of participants who scored above the cutoff for depression.

Scale Correlations

Two scale analyses were conducted in the form of scale-correlations and means. Scale correlations were calculated to further evaluate how individual items on the OADS related to overall depression and how the scale as a whole related to existing measures of depression. The mean or average score on the OADS was calculated between community-dwelling and nursing home adults to examine group differences.

Item Consistency. Item-scale correlations were calculated on the OADS, BDI-II, and GDS to identify items inconsistent with the total measure.

Older Adult Depression Scale (see Table 2). The computed alpha on the OADS was high (.87), indicating the items as a whole are consistent and make for a reliable scale. Items observed to have the highest item-scale correlations were somatic, "interest in activities" (r = .50), "effort to do things" (r =64), "hard for you to get going" (r =60), and "life interesting" (r =. 54). When comparing the first version of the OADS to the second version, five of the six items with low item scale-correlations had increased scores on the second version, following modification of these items on the first version. Nevertheless, poor item discrimination was observed on five OADS items, "are others pleased with you"(r = .14), "easy to make decisions" (r = .22), "concentration good" (r = .19), "feel better in mornings" (r = .02), and "people criticize you" (r = .15).

Geriatric Depression Scale (see Table 3). The computed alpha was high (.85) indicating scale reliability. Item-scale correlations indicated low item discrimination on nine of the thirty items on the GDS, revealing more items with lower scale-correlations than OADS.

Beck Depression Inventory-II (see Table 4). Alpha computed was high (.84), again, indicating scale reliability. All the somatic items (#15-21) had high item-scale correlations of .3 or higher.

Item Classification Efficiency. The positive, negative, and total hit rates were conducted for individual OADS and BDI-II items to examine the efficiency of

classifying depression by each item. Hit rates were not calculated on the GDS due to its lack of somatic symptoms which were our primary concern.

Older Adult Depression Scale (see Table 2). The calculated total hit rates revealed all OADS items performing better than the .29 base rate of depression. The average total hit rates for somatic items (TH = .74) was equivalent to the average of psychological items (TH = .73), indicating both somatic and psychological items were effective in classifying depression. When individual items were examined, three of the five items with highest total hit rates were somatic, "effort to do things" (TH = .85), "life interesting" (TH = .83), and "low energy, feel slowed down" (TH = .80). Among the psychological items, "optimistic about the future" (TH = .77), and "feel sad" (TH = .81).

Beck Depression Inventory-II (see Table 4) All the items on the BDI-II scored above the .13 base rate of depression. The average total hit rate of the psychological items (TH = .75) was higher compared to the somatic items (TH = .6). Nevertheless, the total hit rate was higher than the average of the base rate indicating these items improve diagnostic efficiency.

Scale Correlations. Correlations between the depression measures and subscales were calculated (see Table 5). Correlations between the OADS somatic and the OADS total (r = .93, p = .01) were significant, as well as the correlation between OADS somatic and BDI-II somatic (r = .71, p = .01). The OADS psychological items were also significantly correlated with the OADS total (r = .90, p = .01). When comparing the total OADS scale to existing depression measures, significant correlations were calculated

between OADS total and BDI-II total (r =.81, p = .01) and OADS total with GDS total (r = .80, p = .01).

Group Comparison

Means scores on the OADS were computed for the nursing home and community-dwelling older adults in order to compare the difference in depression scores between the two groups (see Table 6). As expected, the mean score for nursing home adults was higher (X = 11.4, SD = 6.0) than the mean for community-dwelling adults (X =5.7, SD = 3.9), and the difference was significantly higher ($t(70) = 4,65$, $p < .001$). Group differences between community and nursing home adults were also significant on the somatic items ($t(70) = 3.6$, $p < .001$), as well as the psychological items ($t(70) = 4.8$, $p < .001$). In addition, older community-dwelling adults endorsed more somatic items (X = 3.5, SD = 2.6) than psychological items (X = 2.2, SD = 2.2), and this difference was significant ($t(70) = 3.6$, $p < .001$). The nursing home adults also endorsed more somatic items (X = 6.2, SD = 3.6) than psychological (X = 5.2, SD = 3.0).

The mean score on the GDS (X = 10.3, SD = 5.7) among nursing home adults was very close to the OADS (X = 11.4, SD = 6.0), with the difference between the two measures being insignificant ($t(38) = 1.77$, $p = .08$). Means were not calculated on the GDS and BDI-II for community dwelling adults due to a small sample size. Highest possible scores are as follows: OADS (30), GDS (30), and BDI II (63), therefore, means were only compared on the OADS and GDS because their scales were comparable, whereas the BDI-II scale was not the same.

TABLE 2. *Item Analysis for the Second Version of Older Adult Depression Scale*

Item	Item-scale correlations	+H	-H	TH
Somatic items				
2. Interest	.50	.67	.81	.78
4. Energy	.48	.42	.96	.80
6. Appetite	.40	1.0	.77	.76
8. Tiredness	.47	.53	.88	.74
10. Sleep	.40	.52	.80	.72
12. Decisions	***.20***	.43	.78	.67
14. Pleasure	.32	.55	.81	.74
16. Concentration	***.19***	.34	.77	.53
18. New activities.	50	.57	.88	.76
20. Restless sleep	.49	.57	.84	.75
22. Mornings	***.02***	.35	.73	.63
24. Effort	.64	.70	.90	.85
26. Interesting life	.60	.80	.84	.83
28. Get going	.54	.53	.88	.74
30. Outlook	.50	.73	.79	.78
Psychological Items				
1. Future hopeful	.40	.61	.86	.77
3. Sadness	.47	.77	.81	.81
5. Disappointment	.45	.75	.80	.80
7. Life successful	.35	.75	.77	.76
9. Others pleased	***.14***	.50	.72	.71
11. Criticize self	.47	.55	.80	.74
13. Active life	.48	.44	1.0	.63
15. Cry	.30	.56	.79	.74
17. Happy mood	.48	.86	.77	.78
21. Prefer to be alone	.30	.41	.78	.64
23. Future worry	.32	.48	.78	.70
25. Past regrets	.30	.44	.85	.65
27. Loneliness	.50	.58	.85	.77
29. People criticize	***.16***	.55	.75	.72

Note: Item-scale correlations < .30 are bolded.

TABLE 3. *Item Analysis for GDS*

Item	Item-Scale correlations
1. Satisfied with life	.46
2. Lowered interest in activities	.40
3. Life empty	.58
4. Bored	.43
5. Hopeful about the future	***.25***
6. Bothered by thoughts in head	.44
7. In good spirits	.30
8. Afraid something bad going to happen	***.22***
9. Happy most of the time	.56
10. Helpless feelings	.34
11. Restlessness	.38
12. Stay in room vs. going out	.33
13. Worry about the future	.48
14. Problems with memory	***.22***
15. Wonderful to be alive	.40
16. Downhearted and blue	.55
17. Worthless feelings	.50
18. Worry about the past	.44
19. Exciting life	.30
20. Start new projects	.48
21. Full of energy	.43
22. Feel hopeless	.43
23. Others better off than you	***.24***
24. Upset over little things	.35
25. Feel like crying	***.29***
26. Trouble concentrating	***.20***
27. Enjoy mornings	***.07***
28. Avoid social gatherings	.60
29. Make decisions	***.10***
30. Mind clear	**.07**

Note: Item-scale correlations < .3 are bolded. Hit rates were not calculated on the GDS since it excludes somatic items.

TABLE 4. *Item Analysis for the BDI-II*

Item	Item-Scale Correlations	+H	-H	TH
Psychological Items				
1. Sadness	.38	.31	.95	.60
2. Discouragement	.55	.44	.94	.77
3. Past failure	***.12***	.36	.86	.74
4. Loss of pleasure	.44	.34	.93	.70
5. Feel guilty	.38	.36	.88	.72
6. Punished	.58	.7	.95	.90
7. Self-Dislike	.51	.56	.9	.83
8. Blame self	.46	.4	.91	.74
9. Suicide	.44	1.0	.79	.83
10. Crying	***.20***	.33	.86	.83
11. Feel irritated	.50	.4	1.0	.72
12. Lost of interest	.37	.4	.86	.77
13. Indecisiveness	.34	.30	.87	.66
14. Worthlessness	.55	.33	.90	.68
Somatic Items				
15. Energy loss	.43	.21	.86	.40
16. Sleeping patterns	.33	.29	.88	.62
17. Irritability	.37	.38	.88	.74
18. Appetite changes	.43	.47	.97	.79
19. Concentration	.30	.25	.84	.64
20. Tiredness	.48	.21	.85	.38
21. Sex	.38	.23	.86	.51

Note: Item-scale correlations < .30 are bolded.

TABLE 5.

Scale Correlations

	1.	2.	3.	4.	5.	6.
1. ODS-T	-	.81	.83	.9	.93	.77
2. GDS-T	-	-	.80	.82	.68	.65
3. BDI-T	-	-	-	.85	.69	.83
4. ODS-P	-	-	-	-	.67	.69
5. ODS-S	-	-	-	-	-	.71
6. BDI-S	-	-	-	-	-	-

$p < .001$ for all correlations

1. ODS-T = Older Adult Depression Scale total
2. GDS-T = Geriatric Depression Scale total
3. BDI-T = Beck Depression Inventory total
4. ODS-P = Older Adult Depression Scale psychological items
5. ODS-S = Older Adult Depression Scale somatic items
6. BDI-S = Beck Depression Inventory somatic items

TABLE 6.

Group Means

	OADS Mean	GDS Mean	BDI Mean
Nursing-Home	11.4	10.3	12.5
Community-Dwelling	5.7	-	-

Note: GDS and BDI-II means are not reported for community dwelling adults due to their small sample size. Scales of GDS and BDI-II are comparable (possible scores range from 0-30). Scale of BDI-II is different (possible scores range from 0-63).

CONCLUSION

The present study evaluated the evidence for excluding somatic symptoms when accessing depression in older adults by examining a new measure of depression designed specifically for an elderly population. The inclusion of somatic items on depression measures has been a debated issue because of the difficulty in distinguishing symptoms associated with physical decline or aging from symptoms of depression. As expected, the results show somatic items to be related to depression in older adults and the newly designed OADS scale to be a reliable measure.

When examining the reliability of the OADS, item analyses revealed a high alpha for the OADS, comparable to the alpha of the BDI-II and GDS. First, the high alpha observed on the OADS indicates the measure is reliable. Second, the alpha of the OADS was essentially the same as the alphas observed on the BDI-II and GDS, suggesting the measure is just as efficient in measuring for depression. The scale correlations revealed the OADS is strongly related to current measures of depression, the BDI-II and GDS.

The evaluation of individual items on the OADS show the highest item-scale correlations were calculated for somatic items, "effort to do things," "hard to get going" and "life interesting." These findings suggest that these somatic items are consistent and valid indices of depression in older adults. However, several OADS somatic items had poor item discrimination, ("easy to make decisions," "concentration good," and "feel better in the mornings") along with the psychological items ("are others pleased with you," and "people criticize you.") For future purposes these items may need further modifications to increase their reliability and consistency with the OADS. If item

discrimination on these items could be increased, then the overall alpha of the scale would also increase, strengthening the reliability of the OADS. Overall, most of the somatic and psychological items on the OADS were consistent with overall reports of depression. Item scale correlations on the BDI-II also revealed all the somatic items to be reliable indices of depression. The GDS had several items indicating poor item discrimination, more than the BDI-II and OADS. This indicates the GDS has fewer reliable items when compared to the OADS and BDI-II.

The classification efficiency of the OADS was examined using total, positive, and negative hit rates. The total hit rates on OADS items all scored above the .29 base rate of depression. The BDI-II also faired as well with all its items scoring above the .13 base rate of depression. Therefore, both the BDI-II and the OADS items were found to be high in diagnostic efficiency. Both somatic and psychological items on the OADS were equivalent in terms of classification, indicating somatic items are classifying depression as well as the psychological items. Past findings show the original BDI somatic items of "work inhibition," "weight loss," and "loss of interest in sex" are unreliable discriminators for depression (Norris & Woehr, 1998). Loss of weight and sexual drive in older adults may be indicators of physical decline that occurs from aging or poor health. Overall, these results advocate the importance of using caution in discarding somatic items from depression measures when diagnosing older adults.

Several individual somatic items on the OADS had high total hit rates such as "effort to do things, "life interesting," and "low energy, feel slowed down." These findings are consistent with past research that diminished energy represented in many

somatic complaints ("feeling tired," "everything is an effort," and "full of energy") are common indicators of depression in older adults (Norris & Woehr, 1998). On the other hand, contradictory research has found the somatic item "loss of energy" to be a poor discriminator of depression in the elderly (Koenig et. al, 1993) possibly because diminished energy could result from the complications of physical illness or due to aging. In this study, item analyses suggest diminished energy is an accurate index of depression.

As expected, the nursing home residents scored much higher on the OADS than community dwelling older adults. This difference may be due to several reasons, including the loss of autonomy and independence in nursing home residents, as well as declining health, reduced activity, loss of one's home, reduced personal relationships, and so forth. The equivalent scores obtained on the OADS and GDS suggest item endorsement on the OADS is not due to declining health or aging because lower scores on the GDS, which omits somatic items, were not revealed. Therefore, the comparable mean scores for nursing home adults on both measures suggests item endorsement is due to something other than health factors and aging.

As hypothesized, this study found somatic symptoms to be reliable and valid indices of depression in older adults as assessed by BDI-II and the OADS. This study directs implications for future research in the area of geriatric depression in comparing older adults who vary in health status, in their level of depression symptomatology, and differences in living status. In addition, depressed older and younger adults should be compared to further address age differences in depressive symptoms. More work is

needed to examine the effects of declining health and aging on somatic symptoms of depression. This study, as well as several others (Norris et. al, 1995; Norris & Woehr, 1998), suggest somatic symptoms should not be eliminated when assessing depression in older adults. By omitting all somatic items from depression measures, there is a serious risk of under-diagnosing depression in older adults. The importance of further research in geriatric mental health is crucial to the future of older adults, because clinicians need to be able to distinguish somatic symptoms of depression from symptoms due to declining health or aging.

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Appendix A. First Version of Older Adult Depression Scale

1. Do you feel hopeful about the future?	Yes	No
2. Are you interested in many of your normal activities?	Yes	No
3. Do you feel sad much of the time?	Yes	No
4. Do you have low energy or feel slowed down?	Yes	No
5. Do you feel disappointed in yourself?	Yes	No
6. Is your appetite good?	Yes	No
7. Do you think your life has been successful?	Yes	No
8. Do you feel tired or worn out?	Yes	No
9. Are others pleased with you?	Yes	No
10. Do you sleep too much?	Yes	No
11. Do you criticize yourself too much?	Yes	No
12. Is it fairly easy for you to make decisions?	Yes	No
13. Are you glad to be alive now?	Yes	No
14. Do you still get pleasure from doing things you used to enjoy?	Yes	No
15. Do you cry more than you used to?	Yes	No
16. Is your concentration as good as it used to be?	Yes	No
17. Are you in a happy mood most days?	Yes	No
18. Is it hard for you to start new activities or projects?	Yes	No
19. Do you feel worthless?	Yes	No
20. Is your sleep restless?	Yes	No
21. Do you prefer to be with others rather than being alone?	Yes	No
22. Do you feel best in the mornings?	Yes	No
23. Do you worry about what will happen to you in the future?	Yes	No
24. Is it an effort to do most things?	Yes	No
25. Do you regret things that happened in the past?	Yes	No
26. Is your life interesting and enjoyable?	Yes	No
27. Do you feel lonely?	Yes	No
28. Is it hard for you to get going?	Yes	No
29. Do most people like you?	Yes	No
30. Do you have positive outlook?	Yes	No

Appendix B GDS SCALE

ASE CIRCLE YES OR NO FOR THE WAY YOU'VE BEEN FEELING IN THE PAST WEEK.

ARE YOU BASICALLY SATISFIED WITH YOUR LIFE?	YES/NO
HAVE YOU DROPPED MANY OF YOUR ACTIVITIES AND INTERESTS?	YES/NO
DO YOU FEEL THAT YOUR LIFE IS EMPTY?	YES/NO
DO YOU OFTEN GET BORED?	YES/NO
ARE YOU HOPEFUL ABOUT THE FUTURE?	YES/NO
ARE YOU BOTHERED BY THOUGHTS YOU CAN'T GET OUT OF YOUR HEAD?	YES/NO
ARE YOU IN GOOD SPIRITS MOST OF THE TIME?	YES/NO
ARE YOU AFRAID THAT SOMETHING BAD IS GOING TO HAPPEN TO YOU?	YES/NO
DO YOU FEEL HAPPY MOST OF THE TIME?	YES/NO
DO YOU OFTEN FEEL HELPLESS?	YES/NO
DO YOU OFTEN GET RESTLESS AND FIDGETY?	YES/NO
DO YOU PREFER TO STAY AT HOME, RATHER THAN GOING OUT AND DOING NEW THINGS?	YES/NO
DO YOU FREQUENTLY WORRY ABOUT THE FUTURE?	YES/NO
DO YOU FEEL YOU HAVE MORE PROBLEMS WITH MEMORY THAN MOST?	YES/NO
DO YOU THINK IT IS WONDERFUL TO BE ALIVE NOW?	YES/NO
DO YOU OFTEN FEEL DOWNHEARTED AND BLUE?	YES/NO
DO YOU FEEL PRETTY WORTHLESS THE WAY YOU ARE NOW?	YES/NO
DO YOU WORRY A LOT ABOUT THE PAST?	YES/NO
DO YOU FIND LIFE VERY EXCITING?	YES/NO
IS IT HARD FOR YOU TO GET STARTED ON NEW PROJECTS?	YES/NO
DO YOU FEEL FULL OF ENERGY?	YES/NO
DO YOU FEEL THAT YOUR SITUATION IS HOPELESS?	YES/NO
DO YOU THINK THAT MOST PEOPLE ARE BETTER OFF THAN YOU ARE?	YES/NO
DO YOU FREQUENTLY GET UPSET OVER LITTLE THINGS?	YES/NO
DO YOU FREQUENTLY FEEL LIKE CRYING?	YES/NO
DO YOU HAVE TROUBLE CONCENTRATING?	YES/NO
DO YOU ENJOY GETTING UP IN THE MORNING?	YES/NO
DO YOU PREFER TO AVOID SOCIAL GATHERINGS?	YES/NO
IS IT EASY FOR YOU TO MAKE DECISIONS?	YES/NO
IS YOUR MIND AS CLEAR AS IT USED TO BE?	YES/NO

BDI-II

Appendix C

Date: _____

ne: _____ Marital Status: _____ Age: _____ Sex: _____

upation: _____ Education: _____

ructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and
i pick out the **one statement** in each group that best describes the way you have been feeling during the **past two**
ks, including today. Circle the number beside the statement you have picked. If several statements in the group
m to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one
ement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

. Sadness

0 I do not feel sad.
1 I feel sad much of the time.
2 I am sad all the time.
3 I am so sad or unhappy that I can't stand it.

. Pessimism

0 I am not discouraged about my future.
1 I feel more discouraged about my future than I used to be.
2 I do not expect things to work out for me.
3 I feel my future is hopeless and will only get worse.

. Past Failure

0 I do not feel like a failure.
1 I have failed more than I should have.
2 As I look back, I see a lot of failures.
3 I feel I am a total failure as a person.

. Loss of Pleasure

0 I get as much pleasure as I ever did from the things I enjoy.
1 I don't enjoy things as much as I used to.
2 I get very little pleasure from the things I used to enjoy.
3 I can't get any pleasure from the things I used to enjoy.

Guilty Feelings

0 I don't feel particularly guilty.
1 I feel guilty over many things I have done or should have done.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6. Punishment Feelings

0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7. Self-Dislike

0 I feel the same about myself as ever.
1 I have lost confidence in myself.
2 I am disappointed in myself.
3 I dislike myself.

8. Self-Criticalness

0 I don't criticize or blame myself more than usual.
1 I am more critical of myself than I used to be.
2 I criticize myself for all of my faults.
3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes

0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

10. Crying

0 I don't cry anymore than I used to.
1 I cry more than I used to.
2 I cry over every little thing.
3 I feel like crying, but I can't.

_____ Subtotal Page 1

Continued on Back

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1. Agitation

0 I am no more restless or wound up than usual.
1 I feel more restless or wound up than usual.
2 I am so restless or agitated that it's hard to stay still.
3 I am so restless or agitated that I have to keep moving or doing something.

2. Loss of Interest

0 I have not lost interest in other people or activities.
1 I am less interested in other people or things than before.
2 I have lost most of my interest in other people or things.
3 It's hard to get interested in anything.

3. Indecisiveness

0 I make decisions about as well as ever.
1 I find it more difficult to make decisions than usual.
2 I have much greater difficulty in making decisions than I used to.
3 I have trouble making any decisions.

4. Worthlessness

0 I do not feel I am worthless.
1 I don't consider myself as worthwhile and useful as I used to.
2 I feel more worthless as compared to other people.
3 I feel utterly worthless.

5. Loss of Energy

0 I have as much energy as ever.
1 I have less energy than I used to have.
2 I don't have enough energy to do very much.
3 I don't have enough energy to do anything.

6. Changes in Sleeping Pattern

0 I have not experienced any change in my sleeping pattern.
1a I sleep somewhat more than usual.
1b I sleep somewhat less than usual.
2a I sleep a lot more than usual.
2b I sleep a lot less than usual.
3a I sleep most of the day.
3b I wake up 1–2 hours early and can't get back to sleep.

17. Irritability

0 I am no more irritable than usual.
1 I am more irritable than usual.
2 I am much more irritable than usual.
3 I am irritable all the time.

18. Changes in Appetite

0 I have not experienced any change in my appetite.
1a My appetite is somewhat less than usual.
1b My appetite is somewhat greater than usual.
2a My appetite is much less than before.
2b My appetite is much greater than usual.
3a I have no appetite at all.
3b I crave food all the time.

19. Concentration Difficulty

0 I can concentrate as well as ever.
1 I can't concentrate as well as usual.
2 It's hard to keep my mind on anything for very long.
3 I find I can't concentrate on anything.

20. Tiredness or Fatigue

0 I am no more tired or fatigued than usual.
1 I get more tired or fatigued more easily than usual.
2 I am too tired or fatigued to do a lot of the things I used to do.
3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

9 10 11 12 A B C D E

NOTICE: [illegible]

_____ Subtotal Page 2

_____ Subtotal Page 1

_____ Total Score

Appendix D. Second Version Older Adult Depression Scale

1. Do you usually feel optimistic about the future?	Yes	No
2. Are you interested in many of your normal activities?	Yes	No
3. Do you feel sad much of the time?	Yes	No
4. Do you have low energy or feel slowed down?	Yes	No
5. Do you feel disappointed in yourself?	Yes	No
6. Is your appetite good?	Yes	No
7. Do you think your life has been successful?	Yes	No
8. Do you feel tired or worn out?	Yes	No
9. Are others pleased with you?	Yes	No
10. Do you have trouble falling asleep?	Yes	No
11. Do you criticize yourself too much?	Yes	No
12. Is it fairly easy for you to make decisions?	Yes	No
13. Are you as active as you want to be?	Yes	No
14. Do you still get pleasure from doing things you used to enjoy?	Yes	No
15. Do you cry more than you used to?	Yes	No
16. Is your concentration as good as it used to be?	Yes	No
17. Are you in a happy mood most days?	Yes	No
18. Is it hard for you to start new activities or projects?	Yes	No
19. Do you feel worthless?	Yes	No
20. Is your sleep restless?	Yes	No
21. Do you usually prefer to be alone?	Yes	No
22. Do you feel better in the mornings?	Yes	No
23. Do you worry about what will happen to you in the future?	Yes	No
24. Is it an effort to do most things?	Yes	No
25. Do you regret things that happened in the past?	Yes	No
26. Is your life interesting and enjoyable?	Yes	No
27. Do you feel lonely?	Yes	No
28. Is it hard for you to get going?	Yes	No
29. Do people criticize you?	Yes	No
30. Do you have positive outlook?	Yes	No

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I have attended Texas A&M University for my entire college career. While at Texas A&M I have been enrolled in the honors program and been active in many campus activities. Since my freshman year I have been extremely involved in psychology club and Environmental Issues Committee of Student Government (E.I.C) I later became treasurer of E.I.C., social chair of psychology club, and presently I am president of Psi Chi, the National Honor Society in Psychology. I have also been involved in Replant, Liberal Arts Student Council, Alpha Phi Omega, and various other clubs. The honors I have obtained while at Texas A&M include Golden Key National Honor Society, National Society of Collegiate Scholars, Cap and Gown Honor society, Tau Kappa, Dean's List, Honors Scholar, and Who's Who among College Students. It is the work I do off campus with older adults that I enjoy the most. This past year I have been a health assistant to an elderly lady suffering from Alzheimer's Disease. I have also worked and volunteered in nursing home facilities assisting older adults suffering from the effects of stroke, dementia, muscular dystrophy, cerebral palsy, and Alzheimer's disease. This research project will be presented at the Southwestern Psychological Association conference in Houston and the Student Conference for Research and Creative Arts at the University of Houston Clear Lake.