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Measuring Symptoms of Depression:

Comparing the Cornell Scale for Depression in Dementia and the Patient Health

Questionnaire-9-Observation Version

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Abstract

The purpose of this study was to extend available psychometric data on the Patient Health Questionnaire-9-Observation Version (PHQ-9-OV) by comparing it with the Cornell Scale for Depression in Dementia (CSDD) in a new sample of long-term care residents. Data were collected post intervention in a quasi-experimental storytelling study across six communities. The sample ($N = 54$) was 87% women with mean age of 84.5, mean CSDD score of 3.96, and mean PHQ-9-OV score of 4.22. Prevalence of depressive symptoms by CSDD criteria was 20.4% and by PHQ-9-OV criteria was 40.7%. The CSDD and PHQ-9-OV were well correlated ($r_s = 0.78$, $p < 0.0001$). Neither scale was significantly correlated with depression diagnosis nor antidepressant agent use. Both measures demonstrated adequate reliability. The PHQ-9-OV item scoring and established cut-off points designate a lower threshold than the CSDD to detect clinically significant depressive symptoms. Further study is needed to determine the sensitivity of the PHQ-9-OV in identifying treatment effects.

Depression adversely affects the physical, cognitive, and psychosocial functioning of many long-term care (LTC) residents and is associated with greater pain and weight loss, higher rate of hospitalization, and increased morbidity and mortality (Bartels et al., 2003; Gruber-Baldini et al., 2005; Phillips, Rantz, & Petroski, 2011; Thakur & Blazer, 2008; Watson, Garrett, Sloane, Gruber-Baldini, & Zimmerman, 2003). Recent prevalence estimates suggest that clinically significant depressive symptoms or depressive disorders affect 20% to more than 50% of LTC residents with dementia (Baller et al., 2010; Jongenelis et al., 2004; Payne et al., 2002; Teresi, Abrams, Holmes, Ramirez, & Eimicke, 2001; Zubenko et al., 2003). This is important in LTC settings, where Alzheimer's disease or other dementia affects an estimated 47% to 67% of residents (Alzheimer's Association, 2011).

Despite the evident prevalence of depression in LTC settings, symptoms of depression often go undetected and undiagnosed, particularly in residents with dementia (Baller et al., 2010; Davidson, Koritsas, O'Connor, & Clarke, 2006). First, consensus on the most valid method to assess and diagnose depression in dementia is lacking; thus, diagnostic criteria differ among experts (Starkstein, Mizrahi, & Power, 2008). In fact, the National Institute of Mental Health (NIMH) convened a workgroup in 2000 to address this issue (Olin, Katz, Meyers, Schneider, & Lebowitz, 2002). Second, symptoms that accompany dementia overlap with those of depression (e.g., anxiety, apathy, irritability, disinhibition), and symptoms of depression often mimic symptoms of other comorbid illnesses (Hendrix,

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Sakaue, Karabatsos, & Daigle, 2003; Kallenbach & Rigler, 2006). Pain symptoms in particular, commonly magnified by depression, may camouflage underlying depression (Kerber, Dyck, Culp, & Buckwalter, 2005). Third, few depression screening instruments are designed to assess depression in dementia (Starkstein et al., 2008). Not surprisingly, nursing staff often lack competency at recognizing symptoms of depression, with success rates ranging from 42% to 65% (Brühl, Luijendijk, & Muller, 2007).

BACKGROUND

Underrecognition of depression in LTC has prompted numerous studies in which depression screening tools were compared and interventions to improve depression detection were tested. Many studies have compared the Minimum Data Set Depression Rating Scale (MDS DRS) to other well-validated instruments, such as the Geriatric Depression Scale (GDS, Sheik & Yesavage, 1986), the Cornell Scale for Depression in Dementia (CSDD, Alexopoulos, Abrams, Young, & Shamoian, 1988), and the Hamilton Depression Rating Scale (HDRS, Hamilton, 1960) (Anderson, Buckwalter, Buchanan, Maas, & Imhof, 2003; Hendrix et al., 2003; Kerber et al., 2005; Koehler et al., 2005). Although the MDS DRS can be quickly completed with previously collected MDS data, the tool has limited clinical value because of repeatedly low correlations and sensitivities with other validated instruments (Anderson et al., 2003; Koehler et al., 2005). Educational interventions that incorporated validated research instruments (i.e., the GDS and CSDD) have shown improved depression recognition rates among LTC staff and general practitioners (Davidson et al., 2006; Eisses et al., 2005). Moreover, the latter two studies demonstrated increased treatment rates following depression screening training.

Recent research in which the performance of five depression screening tools was compared against psychiatrist-performed diagnostic interviews demonstrates continued effort by geriatric experts to identify practical and valid depression screening tools for LTC (Watson, Zimmerman, Cohen, & Dominik, 2009). Of the five measures compared against the gold-standard diagnostic interview, Watson et al. (2009) found that measures based on resident interview, the GDS, and the Patient Health Questionnaire 2-item version (PHQ-2, Kroenke, Spitzer, & Williams, 2003), offered superior sensitivity and specificity over measures based on caregiver observation. In the latter study, participants' level of cognitive functioning did not preclude assessment by interview. In the case of older adults with poorer cognitive functioning and/or communication difficulties, caregiver observation may be required (Davidson et al., 2006). Considering that formal psychiatrist evaluation is not readily available in many LTC settings, it is vital to identify valid and reliable instruments for depression detection in LTC residents, particularly for those affected by moderate or severe cognitive impairment.

The newest version of the MDS, version 3.0, instituted in October 2010, represents efforts by the Centers for Medicare & Medicaid Services (CMS, 2010) to improve, among other aspects of care, the detection of depressive symptoms in nursing home residents. As a standardized assessment tool of functioning and health whose completion relies on the daily observations of nursing staff, the MDS offers a unique opportunity to detect and monitor depressive symptoms in LTC residents, particularly those with limited ability to self-report symptoms. The MDS 3.0 replaced the historically poorly performing mood items in version 2.0 with two forms of the PHQ-9: (a) the PHQ-9 Resident Mood Interview, and (b) the Staff Assessment of Resident Mood (PHQ-9-Observation Version [OV]) for residents who are unable to complete the PHQ-9 Resident Mood Interview (Kroenke, Spitzer, & Williams, 2001; Saliba & Buchanan, 2008).

The PHQ-9 is derived from the Primary Care Evaluation of Mental Disorders, an instrument based on diagnostic criteria from the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*, third edition, revised (American Psychiatric Association [APA], 1987), and the *DSM*, fourth edition (*DSM-IV*, APA, 1994) that are specific to disorders most common to primary care: depressive, anxiety, alcohol, somatoform, and eating disorders (Spitzer, Kroenke, & Williams, 1999). The PHQ-9 has demonstrated high internal consistency and test-retest reliability as well as criterion and construct validity in large general medical populations and better diagnostic accuracy than the GDS in elderly primary care patients (Kroenke et al., 2001; Phelan et al., 2010). Validated against a structured mental health professional interview, PHQ-9 scores of 10 or greater have optimal sensitivity (88%) and specificity (88%) for detecting major depression (Kroenke et al., 2001). National testing of the MDS 3.0 mood items (PHQ-9 Resident Mood Interview and PHQ-9-OV) found acceptable agreement between both versions of the PHQ-9 and the respective criterion measures. The PHQ-9 Resident Mood Interview demonstrated acceptable agreement with the Modified Schedule for Affective Disorders ($\kappa = 0.685$) in a sample of nursing home 362 residents, and the PHQ-9-OV correlated well ($r = 0.63$) with the CSDD in a sample of 48 residents with severe cognitive impairment who could not be interviewed (Saliba & Buchanan, 2008).

Because use of the PHQ-9-OV in nursing home residents began only recently, psychometric data are limited. Thus, the purpose of this study was to extend available psychometric data on the PHQ-9-OV by comparing it with the CSDD in a new sample of LTC residents. The current study evolved from a quasi-experimental study that tested a storytelling intervention, TimeSlips™, in LTC residents with dementia and routinely measured depressive symptoms with the CSDD (Phillips, Reid-Arndt, & Pak, 2010, 2010).

METHOD

Sample

The sample for the current study consisted of LTC residents with dementia who were enrolled in an intervention study that tested the effects of a storytelling intervention on communication, behavioral and psychological symptoms, and quality of life. The design, implementation, and analysis of the original intervention study are described in detail elsewhere (Phillips et al., 2010). The sample used in the current study consisted of both treatment and control participants, with CSDD and PHQ-9-OV assessments collected 1 week post intervention.

Resident eligibility for the parent study was limited to residents who (a) were 60 and older, (b) had a dementia diagnosis or current treatment with a cholinesterase inhibitor, (c) had a Mini-Mental State Examination (MMSE, Folstein, Folstein, & McHugh, 1975) score of 11 but <24, (d) spoke English, and (e) did not have severe hearing or visual impairment or a terminal illness. Administrators of the six LTC communities that participated in the parent study identified a total of 178 potentially eligible participants; of these, 124 agreed to follow-up contact. Of those 124 residents, 26 subsequently declined participation, and 42 did not meet eligibility criteria (reasons included unexpected illness or hospitalization, lack of dementia diagnosis, and MMSE score outside target range). Of the 56 participants who met eligibility criteria and enrolled in the parent study, 54 remained in the study at the time both the CSDD and PHQ-9-OV data were collected. Data included in the current study were collected from 54 residents across four nursing homes and two assisted living communities. Nursing staff members ($N = 23$) enrolled in the study as staff informants were asked to provide data on residents but not on themselves.

Procedures

The parent study protocol was approved by the university Institutional Review Board (IRB) and the administrators of the four nursing homes and two assisted living communities. Pfizer Inc. provided permission via e-mail communication to use the PHQ-9-OV. Under an IRB-approved waiver of the consent process, family members and resident participants provided verbal assent for the primary study. In accordance with state law, only court-appointed legal guardians are permitted to sign informed consent documents, but this restriction did not apply to any participants in the current study. Staff informants provided written informed consent.

Data collection points for the primary study occurred at baseline (Week 0), 1 week post intervention (Week 7), and 4 weeks post intervention (Week 10). The principal investigator (PI, L.J.P.), trained in the use of the CSDD, interviewed both the resident and the staff member (licensed practical nurse or nursing assistant) most involved in the care of the respective resident to complete the CSDD. At Week 7 data collection, the PI interviewed the same staff member for both the CSDD and the PHQ-9-OV.

Measures

CSDD—Developed from a review of the literature on geriatric depression and from a questionnaire answered by 11 geriatric psychiatrists, the CSDD (Alexopoulos et al., 1988) is used to rate symptoms of depression in individuals with dementia. CSDD ratings are intentionally based on behavioral observations to overcome threats to validity inherent in self-reports by individuals with impairments of concentration, memory, or judgment. The time frame evaluated for most of the 19 items is the previous week. The characteristics of the CSDD are summarized in Table 1. Internal consistency reliability has ranged from 0.76 to 0.84 (Alexopoulos et al., 1988; Kurlowicz, Evans, Strumpf, & Maislin, 2002). Internal consistency reliability in the current study was acceptable (Cronbach's alpha coefficient = 0.75). The CSDD is the most common measure of depression in dementia populations and has performed well when compared against psychiatrist-diagnosed depression ($r = 0.83$) and the HDRS ($r = 0.96$) (Alexopoulos et al., 1988; Burrows, Morris, Simon, Hirdes, & Phillips, 2000; Hamilton, 1960). At a cut-off point of 7, the CSDD has shown good sensitivity (90%) and specificity (75%) for detecting research diagnostic criteria for major depression when administered by a clinician (Vida, Des Rosiers, Carrier, & Gauthier, 1994). Of note, because scores greater than 7 are indicative of depression, physicians of participants in the primary study were informed whenever CSDD scores reached 8 or greater (Hendrix et al., 2003; Watson et al., 2003).

PHQ-9-OV—The PHQ-9-OV (Saliba & Buchanan, 2008) is derived from the PHQ-9, a self-administered, 9-item questionnaire on which respondents rate the frequency with which they have experienced symptoms of depression over the past 2 weeks (Spitzer et al., 1999). The characteristics of the PHQ-9-OV are summarized in Table 1. For the MDS 3.0, the PHQ-9 is administered via resident interview rather than self-report to facilitate response in a vulnerable population (Saliba & Buchanan, 2008). In cases where three or more items are incomplete on the PHQ-9 Resident Mood Interview, an informed staff member is asked to rate how often over the past 2 weeks a resident has experienced the problems or behaviors listed in the PHQ-9-OV. The PHQ-9-OV includes the nine signs and symptoms of depression found in the PHQ-9, plus an additional irritability item—being short tempered/easily annoyed—a behavior that may indicate an underlying mood disorder in individuals with cognitive impairment. Furthermore, the PHQ-9-OV instructs staff to notify the responsible staff or provider if suicidal statements or actions are observed. Excellent agreement among raters of the PHQ-9-OV (kappa range = 0.873 to 0.923) during

preliminary testing of the MDS 3.0 has been reported (Saliba & Buchanan, 2008). Cronbach's alpha coefficient for the PHQ-9-OV was 0.76 in the current study.

Data Analysis

All data were compiled using double data-entry verification and analyzed using SAS/STAT[®] version 9.2. Due to the ordinal-level data of the CSDD and PHQ-9-OV, only Spearman correlations (r_s) were computed to estimate associations between those scales and other variables. Using the cut-off points for the PHQ-9-OV as reference lines along the Y axis and the cut-off points for the CSDD as reference lines along the X axis, bubble plots were constructed to display each participant's joint score. Kruskal-Wallis tests were performed to compare the mean of the CSDD and PHQ-9-OV scores across each of four cells formed by crossing depression diagnosis (*yes* or *no*) and antidepressant agent use (*yes* or *no*). In the current study, participants who were prescribed a drug in the following categories met the criteria for antidepressant agent use: serotonin-norepinephrine reuptake inhibitors, selective serotonin reuptake inhibitors (SSRIs), alpha-2 antagonists, dopamine reuptake inhibitors, serotonin antagonist and reuptake inhibitors (SARIs), tricyclic antidepressant agents (TCAs), or monoamine oxidase inhibitors (MAOIs). No participants were prescribed TCAs or MAOIs, although 2 were prescribed trazodone (Desyre[®], Oleptro[®]), a SARI, in addition to another antidepressant agent. In the case of both participants, trazodone was prescribed in low doses (25 to 50 mg daily) and thus was not considered to be their primary antidepressant medication.

RESULTS

The mean age of the 54 resident participants was 84.5 ($SD = 7.5$ years, range = 65 to 99). Most of the participants were women (87%, $n = 47$) and Caucasian (98%, $n = 53$), reflecting the LTC population in central Missouri. The average educational level was 13.2 years ($SD = 3.4$), and the average length of stay in LTC was 2.4 years ($SD = 2.1$). The majority of the participants were widowed (65%, $n = 35$), although 15% were married ($n = 8$), 15% were divorced or separated ($n = 8$), and 5% ($n = 3$) were never married. In this sample of LTC residents with dementia, the mean MMSE score was 15.1 ($SD = 4.1$).

The prevalence of mild depressive symptoms based on a CSDD score ≥ 8 was 20.4% ($n = 11$), whereas a prevalence based on a PHQ-9-OV score ≥ 5 was 40.7% ($n = 22$). Of these 11 apparently incongruent cases, however, only 2 had a PHQ-9-OV score ≥ 10 , the score at which the PHQ-9 is most sensitive and specific for major depression (Kroenke et al., 2001). As depicted on the bubble plot in the Figure, all participants with mild to severe depressive symptoms on the CSDD were detected as *mild* or greater on the PHQ-9-OV, but 11 individuals considered to have no depressive symptoms on the CSDD had depressive symptoms of mild or greater severity on the PHQ-9-OV. Moreover, using a PHQ-9-OV cut-off point ≥ 10 lessens the gap between CSDD and PHQ-9-OV scoring because the prevalence of definite depressive symptoms on the PHQ-9-OV drops from 40.7% to 13%.

Also noteworthy were the disparate scores for 2 residents, the first of whom had a CSDD score of 2 and PHQ-9-OV score of 18 and the second of whom had a CSDD score of 17 and PHQ-9-OV score of 6. In the case of the first resident, several highly frequent, and therefore high scoring PHQ-9-OV behaviors or symptoms were either not included on the CSDD (i.e., trouble concentrating and overeating) or were rated as mild on the CSDD (i.e., retarded movements). However, the case of the second resident was most remarkable because the resident developed an acute suicidal ideation requiring hospitalization the day before data collection. In this case, the relatively low PHQ-9-OV score reflected the short duration of symptoms, and the CSDD score was calculated with only the caregiver interview.

A chart diagnosis of depression was present in 48.1% ($n = 26$) of residents, and 53.7% ($n = 29$) of residents had been prescribed an antidepressant agent. Kruskal-Wallis tests revealed no significant differences in mean CSDD ($p = 0.46$) or PHQ-9-OV scores ($p = 0.55$) of participants when they were categorized according to depression diagnosis and use of antidepressant agents. The mean CSDD and PHQ-9-OV scores for each of the four groups are presented in Table 2. The lowest mean scores for both the CSDD and the PHQ-9-OV were found in residents not taking an antidepressant agent, whether or not they had a diagnosis of depression. For the overall sample, the mean CSDD score was 3.96 ($SD = 4.1$), and the mean PHQ-9-OV score was 4.22 ($SD = 4.9$).

The CSDD and PHQ-9-OV were strongly correlated ($r_s = 0.78$, $p < 0.0001$). The correlation between the CSDD and the MMSE was weak but significant ($r_s = -0.27$, $p < 0.05$); the correlation between the PHQ-9-OV and the MMSE was not significant ($r_s = -0.18$, $p = 0.18$). Neither scale was significantly correlated with depression diagnosis (CSDD: $r_s = 0.01$, $p = 0.92$; PHQ-9-OV: $r_s = 0.12$, $p = 0.40$) or antidepressant agent use (CSDD: $r_s = 0.21$, $p = 0.12$; PHQ-9-OV: $r_s = 0.19$, $p = 0.16$). Separate correlational analyses in which the two outlier cases described above were excluded did not show substantially different results.

DISCUSSION

This study examined the PHQ-9-OV and the CSDD as measures of depressive symptoms in LTC residents with dementia. Consistent with the extant literature, the prevalence of current depressive symptoms varied according to the particular screening instrument. Although both the CSDD and the PHQ-9-OV demonstrated adequate and comparable internal consistency reliability, the prevalence of depressive symptoms based on PHQ-9-OV scores ≥ 5 was twice the prevalence based on CSDD scores ≥ 8 . On the one hand, the PHQ-9-OV item scoring and established cut-off points designate a somewhat lower threshold than the CSDD to detect clinically significant depressive symptoms. On the other hand, as a scale with more items and different weightings, the CSDD and its higher cut-off point for depression appear to accommodate low levels of multiple symptoms that do not reach the threshold for depression in individuals with dementia. Although a PHQ-9-OV cut-off point of ≥ 5 may err on the side of higher sensitivity and lower specificity for detecting any depressive symptoms, this is desirable in LTC settings where the goal of screening is to identify residents who may need further diagnostic evaluation by a skilled health care provider (Brown, Raue, Halpert, Adams, & Titler, 2009). The efficiency of the PHQ-9-OV is particularly suited to LTC staff with current familiarity of residents' symptoms and behaviors.

The CSDD and the PHQ-9-OV correlated well with one another. As a more concise scale, however, the PHQ-9-OV does not include the following dementia-specific mood signs that are included on the CSDD: anxiety, lack of reactivity to pleasant events, agitation, multiple physical complaints, weight loss, diurnal variation of mood, pessimism, and mood-congruent delusions. Several of these omitted symptoms are included in the NIMH provisional criteria for depression in Alzheimer's disease (AD), which extended *DSM-IV* criteria by the inclusion of irritability and social isolation or withdrawal and the modification of loss of interest with decreased positive affect or pleasure in response to social contacts and usual activities (Olin et al., 2002). In addition, the NIMH workgroup criteria require only three symptoms for the diagnosis of depression, as opposed to the five required by the *DSM-IV* criteria and do not require that the symptoms occur nearly every day. Although the validity of the NIMH criteria was supported in a study of 101 AD patients, the debate over the diagnostic accuracy of *DSM-IV* criteria for depression in AD continues (Teng et al., 2008). A recent study of 971 AD patients found that all nine *DSM-IV* criteria for major depression were significantly associated with the cluster of patients diagnosed with major

depression, whereas the criterion of irritability was not (Starkstein, Dragovic, Jorge, Brockman, & Robinson, 2011). Even and Weintraub (2010) provided further discussion about whether distinct symptom profiles of depression in AD are warranted.

In this study, individuals taking an antidepressant agent did not have significantly lower mean depression scores on either screening instrument. While beyond the scope of this study to offer an explanation about this phenomenon, it should be mentioned that among residents taking an antidepressant agent, only the mean PHQ-9-OV score was clinically elevated (i.e., score = 5) and only in residents with a depression diagnosis. In none of the depression diagnosis or antidepressant agent use groups was the mean CSDD score clinically elevated (i.e., score = 8). Consistent with recommendations generated from recent systematic reviews and meta-analyses of antidepressant treatment for geriatric depression and depression in AD, most participants in the current study with a diagnosis of depression were receiving antidepressant medication (Shanmugham, Karp, Drayer, Reynolds, & Alexopoulos, 2005; Thompson, Herrmann, Rapoport, & Lanctôt, 2007; Wilson, Mottram, Sivananthan, & Nightingale, 2001).

Limitations of this study include the sample's homogeneity and small size ($N = 54$). Although participants were from one region of central Missouri, because the CSDD and the PHQ-9 have been translated into many other languages and validated in multiple populations, concerns about the cross-cultural validity of either instrument are negligible (Lin & Wang, 2008; Pfizer, n.d.; Schreiner & Morimoto, 2002). In addition, lacking the gold-standard diagnostic interview by a mental health professional, sensitivity, specificity, and concurrent validity of either instrument in this sample could not be estimated. Finally, the manner in which the depression screening instruments were completed in the current study differs from the process used in nursing homes. For each resident who participated in the study, the PI interviewed the nursing staff member who knew the participant best. In clinical practice, staff members completing the MDS may not be directly involved with resident care, resulting in inaccurate estimates of depressive symptoms.

Research comparing LTC nurses' PHQ-9-OV ratings on the MDS 3.0 against results of a diagnostic criterion measure is needed to provide concurrent validity for the PHQ-9-OV in practice. In addition, further study is needed to determine the sensitivity of the PHQ-9-OV in identifying treatment effects. Instruments such as the CSDD and the HDRS have repeatedly detected treatment effects in trials of SSRIs for treatment of depression in AD (Lyketsos et al., 2000, 2003; Nyth et al., 1992). Future treatment studies should compare effects detected by the PHQ-9-OV against effects detected by instruments with well-established validity and reliability.

CONCLUSION

Both the CSDD and the PHQ-9-OV reliably measured depressive symptoms in this sample of LTC residents with dementia. Because the PHQ-9-OV rates the frequency but not the severity of symptoms, new but severe symptoms may be overlooked if the PHQ-9-OV score is considered in isolation. However, the directive to notify the responsible staff or provider in the case of suicidal ideations protects residents from this potential oversight.

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Figure.

Bubble plot of score frequencies for the Cornell Scale for Depression in Dementia (CSDD) and Patient Health Questionnaire-9-Staff Observation Version (PHQ-9-OV). Note. Bubbles are proportionately sized and labeled with a number representing the frequency of participants having the respective CSDD and PHQ-9-OV scores.

TABLE 1

Summary of Characteristics of Depression Symptom Measures

Characteristic	Cornell Scale for Depression in Dementia ^a	Patient Health Questionnaire-9-Observation Version ^b
Method of administration	Clinician interview of caregiver and patient (discrepancies resolved with second caregiver interview); chart review for weight loss item.	Staff assessment of behaviors, signs, or symptoms of mood distress.
Time to complete	Caregiver interview = 20 minutes; resident interview = 10 minutes	Caregiver interview = 10 minutes
Time frame	Past week	Past 2 weeks
Number of items	19	10
Content	<ol style="list-style-type: none"> 1 Anxiety 2 Sadness 3 Lack of reactivity to pleasant events 4 Irritability 5 Agitation 6 Retardation 7 Multiple physical complaints 8 Loss of interest^c 9 Appetite loss 10 Weight loss^d 11 Lack of energy^c 12 Diurnal variation of mood 13 Difficulty falling asleep 14 Multiple awakenings during sleep 15 Early morning awakening 16 Suicide (i.e., feels life is not worth living, has suicidal wishes, or makes suicide attempts) 17 Poor self-esteem 18 Pessimism 19 Mood-congruent delusions 	<ol style="list-style-type: none"> 1 Little interest or pleasure in doing things 2 Feeling or appearing down, depressed, or hopeless 3 Trouble falling or staying asleep; sleeping too much 4 Feeling tired or having little energy 5 Poor appetite or overeating 6 . Indicating feeling bad about self, is a failure, or has let self or family down 7 Trouble concentrating on things, such as reading the newspaper or watching television 8 Moving or speaking so slowly that other people have noticed, or the opposite—being so fidgety or restless that resident has been moving around a lot more than usual 9 States that life isn't worth living, wishes for death, or attempts to harm self 10 Being short-tempered, easily annoyed
Scaling method	Items are rated as: a = unable to evaluate 0 = absent 1 = mild or intermittent 2 = severe	Frequency of positive symptoms: 0 = never or 1 day 1 = 2 to 6 days 2 = 7 to 11 days 3 = 12 to 14 days
Score range	0 to 38	0 to 30
Score interpretation	0 to 7 = no depression 8 to 12 = mild depression >12 = major depression (Watson et al., 2003)	0 to 4 = minimal depression 5 to 9 = mild depression 10 to 14 = moderate depression 15 to 19 = moderately severe depression 20 to 30 = severe depression

^aAlexopoulos, Abrams, Young, and Shamoian (1988).

^bA component of the Minimum Data Set, version 3.0.

^cSymptoms must have been present during the past week and have developed acutely (i.e., within the past month).

^dResponse based on individual's weight over past month with a score of 2 if weight loss >5 pounds in 1 month.

TABLE 2

Depression Scale Scores According to Depression Diagnosis and Antidepressant Agent Use

Depression Measure	Mean (SD)			
	Depression Diagnosis/ Antidepressant Agent Use (<i>n</i> = 19)	Depression Diagnosis/ No Antidepressant Agent Use (<i>n</i> = 7)	No Depression Diagnosis/ Antidepressant Agent Use (<i>n</i> = 10)	No Depression Diagnosis/No Antidepressant Agent Use (<i>n</i> = 18)
Cornell Scale for Depression in Dementia	4.05 (3.87)	3.29 (3.45)	5.70 (5.44)	3.17 (3.76)
Patient Health Questionnaire-9-Observation Version	5.37 (5.45)	3.00 (3.27)	4.90 (5.76)	3.11 (4.30)