



MEASURING ONCOLOGY NURSING-SENSITIVE PATIENT OUTCOMES: MEASUREMENT SUMMARY

DEPRESSION

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Diagnostic and Statistical Manual-IV Criteria for Major Depressive Disorder

The individual must have the presence of either depressed mood or anhedonia (loss of interest or pleasure in nearly all activities), plus an additional four of the following symptoms: (a) insomnia or hypersomnia, (b) fatigue/loss of energy, (c) significant weight/appetite change (increase or decrease), (d) psychomotor agitation or retardation, (e) feelings of worthlessness or guilt, (f) reduced concentration, ability to think or indecisiveness, and (g) recurrent thoughts of death or suicide. The symptoms must persist for most of the day, nearly every day for at least two consecutive weeks. The episode must be accompanied by clinically significant distress or impairment in social, occupational, or other important areas of functioning (American Psychiatric Association, 2000).

Table(s) of Tools to Measure Oncology Nursing-Sensitive Outcome: Depression

The two common ways to assess for depression are clinical interview (e.g., Structured Clinical Interview for the Diagnostic and Statistical Manual, 4th edition [DSM-IV] [SCID], Diagnostic Interview Schedule [DIS] and written self-report measures (e.g., Beck Depression Inventory [BDI], Hospital Anxiety and Depression Scale [HADS], and Center for Epidemiologic Studies–Depression [CES-D]). Clinical interviews long have been viewed as the gold standard for identifying the prevalence, clinical diagnosis, and potential treatment of depression because of their rigorous criteria. Common structured interviews include the Structured Clinical Interview for the Diagnostic and Statistical Manual (DSM) (First, et al., 1997), Research Diagnostic Criteria (Massie & Popkin, 1998), Diagnostic Interview Schedule (Robins et al., 1981), and Schedule for Affective Disorders and Schizophrenia (SADS) (Endicott & Spitzer, 1978). Unstructured interviews often use the DSM or Endicott criteria. Although a diagnosis can be determined only through interview, an interview may be less useful for oncology nurses in busy practices.



The use of self-report measures for screening has a number of advantages, such as ease of administration, scoring of the tool by individuals who have not had extensive training, and the speed in which they can be completed by patients. Further, self-report screening tools can provide a relatively quick, gross assessment of depression before a direct clinical interview is obtained, quantify the severity of the depression, and can identify changes over time (Trask, 2004). A clinical evaluation should be scheduled for those who score above the established cut-off scores on screening tools for depression. For these reasons, the following tables include written self-report screening tools specifically designed to measure depression; the tools have evidence of reliability, validity, sensitivity, and specificity in patients with cancer. Reliability refers to the consistency of the responses, and criterion validity refers to its correlation with an accepted standard (e.g., clinical interview such as the SCID). Sensitivity is the ability to correctly identify those who are depressed, and specificity is the ability to correctly identify those who are not depressed. The table does not include items or subscales from other multidimensional symptom or quality-of-life scales such as Symptom Distress Scale, Brief Symptom Inventory, or Functional Assessment of Cancer Therapy. Should an interview approach be preferred, readers should look at Trask's excellent review of clinical interview scales.

Four different approaches to assessing depression in patients with cancer are used commonly: inclusive, etiologic, substitutive, and exclusive (Newport & Nemeroff, 1998; Trask, 2004). These approaches reflect how depression is defined and measured. The inclusive approach uses all the symptoms of depression, regardless of whether they are secondary to medical illness. Most screening tools of depression use the inclusive approach. In contrast, the etiologic approach counts only symptoms that are not the result of physical illness. The advantage of the etiological approach is higher specificity, but a major disadvantage of this approach is that many patients with cancer and depression may be missed. Further, this approach does not take into account that many groups (e.g., elders, minorities) use somatic symptoms to describe depression. The substitutive approach replaces symptoms that may be related to cancer (e.g., fatigue) and includes additional psychological symptoms. The advantage to this approach is similar to the inclusive approach; however, it requires use of assessment tools not readily available in the literature with little evidence to support the tools' reliability and validity. Finally, the exclusive approach eliminates two common symptoms of depression (fatigue and weight/appetite changes). This approach increases specificity but decreases sensitivity. In comparing these approaches, the recommendation is for the inclusive approach. This allows for maximum sensitivity in assessing depression in patients with cancer.

The major bibliographic databases (Medline[®], CINAHL[®], Cancerlit, and PsychInfo) were used to identify studies using a measure of depression in patients with cancer. Keywords searched included cancer and depression assessment, cancer and depression measurement, psychiatric rating scales and cancer, cancer and mood, and

cancer paired with the scales reviewed such as the BDI, CES-D, HADS, Profile of Mood States (POMS), and Geriatric Depression Scale (GDS). The HADS was the most frequently used measure, followed by the POMS, CES-D, BDI, and GDS.

Table A contains a description of the tools: name, author/year, domains or factors, number of items, scaling, scoring and language. Table B contains the psychometric properties of the tools: name, populations, reliability and validity, sensitivity, clinical utility, and comments. Note that many studies compared several tools or compared tools to the clinical interview (the gold standard). The results of these comparisons are listed under validity.

Table A. Description of Tools

Name of Tool	Author and Year	Domains or Factors	# of Items	Scaling	Scoring	Language
Beck Depression Inventory (BDI)	Beck et al., 1961	Behavioral, cognitive, and somatic components of depression; focuses on negative attitudes of the patient toward self	21	Subjects are instructed to indicate their response to a specific item from 0 (I do not feel like a failure) to 3 (I feel like a complete failure).	Summed; higher scores indicates more depression; scores range from 0–63; typical cut-off score is > 10, indicative of depression.	Available in many languages (> 25), including Spanish, Chinese, Dutch, and Portuguese.
Beck Depression Inventory –Short Form (BDI-SF)	Beck & Beck, 1972	Behavioral, cognitive, and somatic components of depression; focuses on negative attitudes of the patient toward self	13	Subjects are instructed to indicate their response to a specific item from 0 (I do not feel like a failure) to 3 (I feel like a complete failure).	Summed, higher scores indicates more depression; scores range from 0–39; typical cut-off score is > 8, indicative of depression.	Available in many languages, including Spanish, Chinese, Dutch, and Portuguese.
Center for Epidemiological Studies-Depression Scale (CES-D)	Radloff, 1977	Frequency of depressive symptoms Four factors: negative affect/mood, positive mood or well-being;	20	Subjects instructed to indicate on a 0 (rarely or none of the time—less than a day) to 3 (most of the time—5–7 days) scale the	Summed; higher score indicates more depression; scores range 0–60; typical cut-off score is \geq 16,	Many 1 languages (> 25), including Spanish, Chinese, Korean, Dutch, and

Name of Tool	Author and Year	Domains or Factors	# of Items	Scaling	Scoring	Language
		somatic; interpersonal		frequency of depression rated in the past week	indicative of depression.	German.
Center for Epidemiological Studies-Depression Scale –Short Form (CES-D-SF)	Kahout et al., 1993 Stommel et al., 1993	Frequency of depressive symptoms Four factors: negative affect/mood, positive mood or well-being; somatic; interpersonal	15 11	Subjects instructed to indicate on a 0 (rarely or none of the time—less than a day) to 3 (most of the time—5–7 days) scale the frequency of depression rated in the past week	Summed; higher score indicates more depression; scores range 0–45 for the 15-item version and 0–33 for the 11-item version.	English
Depression Questionnaire for Children (DQC)	De Wit, 1987	Frequency of depressive symptoms; contains nine subscales measuring affective, motivational, secondary, and previous depressive symptoms	87, plus 20 dummy questions not related to depression	Subjects are instructed about whether they have the symptom listed.	Summed; higher scores indicate greater depression; scores range from 0–87.	English, Dutch
Hamilton Anxiety and Depression Scale (HADS)	Zigmond & Snaith, 1983	Severity of depression and anxiety	14; 7 items for each subscale	Subjects are instructed to indicate from 0–3 severity.	Summed; subscales range from 0–21; cut-off of > 8 is indicative of depression.	Many (> 30) languages, including English, Spanish; Swedish, German, French, Dutch, and Arabic.
Geriatric Depression Scale (GDS)	Yesavage, Brink, Rose et al., 1982	Positive and negative affective domains of depression	30-item	Subjects are instructed to indicate yes or no for each item.	Summed; scores range from 0–30; cut-off for long form is > 12.	English
Geriatric Depression Scale –	Yesavage, Brink, Rose	Positive and negative affective domains of	15 item short form	Subjects are instructed to indicate yes or no for each	Summed; scores range from 0–15. Cut-off is > 5.	English

Name of Tool	Author and Year	Domains or Factors	# of Items	Scaling	Scoring	Language
Short Form (GDS-SF)	et al., 1982	depression		item.		
Profile of Mood States (POMS)	McNair, Lorr, & Droppleman, 1971/1992	Six subscales: tension-anxiety, depression-dejection, anger-hostility, vigor-activity, fatigue-inertia, confusion-bewilderment	65 adjective rating scales	Subjects are instructed to indicate on a 0 (not at all) to 4 (extremely) scale the extent to which an adjective described their feelings over the past week.	Summed; higher scores indicate greater overall level of mood disturbance. Scores range from 0–148. Each subscale can be summed with a range of 0–28.	English, Spanish, Dutch
Profile of Mood States-short form (POMS-SF)	Shacham, 1983	Six subscales: tension-anxiety, depression-dejection, anger-hostility, vigor-activity, fatigue-inertia, confusion-bewilderment	37 adjective rating scales	Subjects are instructed to indicate on a 0 (not at all) to 4 (extremely) scale the extent to which an adjective described their feelings over the past week.	Summed; higher scores indicate greater overall level of mood disturbance. Scores range from 0–260. Each subscale can be summed with a range of 0–44.	English
Zung Self-rating Depression Scale (ZSDS)	Zung, 1965	Frequency of symptoms of depression	20	Subjects are instructed to indicate from 1–4 how they felt within the past week; higher number indicates a more unfavorable response.	Summed and ranges from 20–80. The raw score is converted into a percentage (termed the SDS index) (e.g., if raw score is 40, the SDS index would be 50 [50% of 80, the total possible]).	English
Brief Zung Self-rating Depression Scale (ZSDS)	Dugan, McDonald, Passik, Rosenfeld,	Frequency of symptoms of depression	11	Subjects instructed to indicate from 1–4 how they felt within the past week; higher number indicates a	Summed and ranges from 11–44. The raw score is converted into the SDS index similar to	English

Name of Tool	Author and Year	Domains or Factors	# of Items	Scaling	Scoring	Language
	Theobald, & Edgerton, 1998			more unfavorable response.	the ZSDS.	

Table B. Psychometric Properties of Tools

Name of Tool	Populations	Reliability and Validity	Sensitivity	Clinical Utility	Comment
Beck Depression Inventory (BDI)	<p>Used with mixed cancer populations (e.g., breast, lymphoma, head and neck, prostate): 42 adolescents with cancer and their 34 mothers and 27 fathers, plus 173 adolescent controls (Allen et al., 1997); 245 mixed diagnoses (Berard et al., 1998); 99 women with breast cancer (Ozalp et al., 2003); 89 women with breast cancer (Steven et al., 2002); and 45 men with prostate cancer (Pirl et al., 2002)</p> <p>Used cross-culturally in studies in US, Europe and Africa (e.g., Allen et al.; Berard et al.)</p> <p>Used with both genders and different ethnic groups (white, African American, Hispanic, etc.) (e.g., Berard et al.; Steven et al.)</p>	<p>Average internal consistency reported across studies is ≥ 0.82 adolescent, ≥ 0.84 adult, ≥ 0.80 senior adult; average test-re-test is > 0.72 (Yin & Fan, 2000); internal consistency ≥ 0.76 across groups with and without cancer (Allen et al.)</p> <p>Construct and criterion validity supported through numerous studies; compared to HADS (Berard et al.; Love et al., 2004), SCID (Love et al.; Pirl et al.; Stephen et al.), STAI (Allen et al.; Ozalp et al.)</p>	Excellent sensitivity 95% when cut-off of 16 was used (Berard et al.)	Easy to use	Documents the high correlations between depression and anxiety (Allen et al.; Love et al.; Ozalp et al.)
Beck Depression Inventory-Short form (BDI-SF)	Used with 450 mixed cancer diagnoses (McLachlan et al., 2001); 227 women with breast cancer (Love et al.)	Average internal consistency reported was > 0.84 (Love et al.); 0.59 (Yin & Fan).	Very good; reported at 95% when cut-off score was 5 (Love et al.).	Easy to use	

Name of Tool	Populations	Reliability and Validity	Sensitivity	Clinical Utility	Comment
	<p>Used cross-culturally in studies in the United States, Europe, Africa, and New Zealand</p> <p>Used with both genders, different ethnic groups (white, African American, Hispanic, etc.)</p>	<p>Construct and criterion validity supported the BDI-SF compared to EORTC QLQ-30 (McLachlan et al.).</p>			
<p>Center for Epidemiological Studies-Depression Scale (CES-D)</p>	<p>Used with mixed cancer diagnosis populations: 155 long-term survivors plus 120 references (Schroevvers et al., 2004); 117 women with breast cancer and healthy controls (Hann et al., 1999); 48 women with breast cancer and 48 partners (Badger et al., 2005); 250 mixed diagnoses (Visser & Smets, 1998); 200 patients with colorectal cancer (Vernon et al., 1997); 211 patients with lung cancer (Kurtz et al., 2002); 78 older adults (Schein & Koenig, 1997); and 80 women with breast disease and 80 controls (Andrykowski et al., 1996)</p> <p>Used with both genders, different ethnic groups, (e.g., Badger et al., 2000, 2005; Vernon et al.), and older adults (e.g., Kurtz et al.; Schroevvers, et al.)</p>	<p><i>Reliability</i> Internal consistency > 0.85 across numerous studies for both white and minority populations (e.g., Schroevvers et al., Badger et al., 2000, 2005; Carpenter et al.; Visser & Smets; Vernon et al.); older adults (Schein & Koenig, Kurtz et al.) Test-retest reliability adequate (Hann et al.)</p> <p><i>Validity</i> Construct and criterion validity were supported through numerous studies, with Medical Outcomes Study (MOS) (Hann et al.; Kurtz et al.), Structured Clinical Interview for Diagnosis (SCID) (Schein & Koenig), Rotterdam Symptom Checklist (RSCL)</p>	<p>Very good, consistent with BDI; moderate sensitivity with older adults (Schein & Koenig)</p>	<p>Easy to use</p>	

Name of Tool	Populations	Reliability and Validity	Sensitivity	Clinical Utility	Comment
		(Schroevers et al.), Profile of Mood States (POMS), STAI (Andrykowski et al.; Hann et al.) PANAS (Badger et al.), with Hospital Anxiety and Depression Scale (HADS), BDI, and Schedule for			
Center for Epidemiological Studies-Depression Scale (CES-D) <i>(Continued)</i>		Affective Disorders and Schizophrenia (SADS) (Katz et al., 2004). Four factor solutions found with longer version: depressed affect, positive affect, somatic and retarded activity, and interpersonal well-being (Carpenter et al.)			
Center for Epidemiological Studies-Depression Scale –Short Form (CES-D-SF)	Used with mixed cancer populations: 708 patients with mixed diagnoses and 504 caregivers (Stommel et al., 1993); 832 women representing six populations, including 99 women with breast cancer and 179 women with benign breast disease (Carpenter et al., 1998) Used with both genders and different ethnic groups (Stommel et al.; Carpenter et al.)	<i>Reliability</i> Internal consistency was comparable to longer versions (Stommel et al.), > 0.83 for the longer version and > 0.68 for the shorter version (Carpenter et al.). <i>Validity</i> Construct and criterion validity supported through factor analysis, found four factor solution, highly correlated with longer version (Stommel et al.); single factor solution found in Carpenter's	Not known	Easy to use	15 item scale is reported to have less gender bias (Stommel et al.) Supports use of 11-item version (Carpenter et al.)

Name of Tool	Populations	Reliability and Validity	Sensitivity	Clinical Utility	Comment
Depression Questionnaire for Children (DQC)	Used with 84 children with leukemia, lymphoma, or solid tumors (Grootenhuis & Last, 2001)	<p>et al. study</p> <p><i>Reliability</i> Internal consistency was reported at 0.91 for 8- to 12-year-old children and 0.92 for 13- to 18-year-olds. (Grootenhuis & Last, 2001)</p>	Not known	Takes 20 minutes	
DQC (Continued)		<p><i>Validity</i> Strong correlation reported between anxiety and depression</p>			
HADS	Used with mixed cancer populations: 63 patients with mixed diagnoses admitted to hospice (Lees & Lloyd-Williams, 1999); 100 patients with mixed cancer diagnoses (Lloyd-Williams et al., 2001); 275 women with breast cancer (Payne et al., 1999); 568 patients with mixed diagnoses (Skarstein et al., 2000); 298 patients with mixed diagnoses (Sollner et al., 2001); 269 women with breast cancer (Hall et al., 1999); 456 patients with mixed diagnoses (Berard et al., 1998); 509 women with 285 controls (Lampic et al., 2001); 189 patients with mixed cancer diagnoses (Keller et al., 2004); 731 women with breast cancer (Osborne et al., 2003); 1,474 patients with mixed diagnoses (Smith et al., 2002); 303 women with breast cancer (Love et al., 2002); 132 patients with mixed diagnoses (Morasso et al., 2001); 517 women undergoing mammogram (Lampic et al.,	<p><i>Reliability</i> Internal consistency was > 0.83. (Bishop & Warr; Lloyd-Williams et al.; Skarstein et al., Osborne et al, 2003, 2004; Bjelland et al., 2002, Lampic et al., 2002).</p> <p><i>Validity</i> Construct and criterion validity were supported through numerous studies comparing the HADS to the BDI and SCID, etc. (Berard et al., Ciarmelli & Poli; Keller et al.; Morasso et al.; Payne et al.), to the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire</p>	Good (70%) to very good (95%) when using a cut-off of 11 (Morasso et al.) or when reducing cut-off score from traditional 11 to 9 (73%) (Lloyd-Williams et al.). Using a lower cut-off for moderate (13–18) and severe (>18) resulted in 80.2% sensitivity (Sollner et al.). Using a lower threshold for establishing a case of depression or anxiety (>8) increases sensitivity (81%) (Berard et al.; Bishop & Warr; Hall et al.;	Easy to use, short	Most frequently used instrument in the literature

Name of Tool	Populations	Reliability and Validity	Sensitivity	Clinical Utility	Comment
	<p>2002); 100 patients with mixed diagnoses (Ciarmelli & Poli, 2001); and 68 women with breast cancer (Bishop & Warr, 2003)</p> <p>Used with both genders; multiple ethnic groups (e.g., Lloyd-Williams et al.; Skarstein et al., 2000; Smith et al.)</p>	<p>33 (Skarstein et al.), to the Distress Thermometer (Trask et al.), and to the Psychological Distress Inventory (Morasso et al.)</p> <p>Factor analysis supported</p>	<p>Keller et al.; Love et al.)</p>		
<p>HADS (Continued)</p>	<p>Used with older adults (e.g., Skarstein et al.; Smith et al.; Sollner et al.)</p>	<p>two factor solutions (anxiety and depression) (e.g., Bjelland et al.; Lloyd-Williams et al.; Smith et al.)</p>			
<p>Geriatric Depression Scale (GDS)</p>	<p>Used with mixed cancer populations: 37 mixed cancer diagnosis (Chen et al., 2002), 82 women with breast cancer (Wu & McSweeney, 2004), 77 mixed cancer diagnoses (Respini et al., 2003), and with healthy old-old adults in primary care (Watson et al., 2004).</p> <p>Used with both genders (Chen et al.; Respini et al.; Watson et al.; Wu & McSweeney)</p>	<p><i>Reliability</i> Average internal consistency reliability reported > 0.94; split-half 0.94 (Watson et al.)</p> <p><i>Validity</i> Construct and criterion validity supported with comparison to other instruments (CES-D and SCID) (Watson et al.), FSI (Respini et al.), FACT-G (Chen et al.) and predictive validity with Cancer related fatigue distress scale (Wu & McSweeney)</p>	<p>Poor; reported at 60% for major depression and less than 50% for minor depression; when cut point decreased to 9, sensitivity was good at 80% (Watson et al.).</p>	<p>Easy to use</p>	<p>Developed specifically for older adults (> 65 years) but rarely used in cancer research</p>
<p>POMS</p>	<p>Used with mixed cancer populations: 428 bone marrow transplant recipients (Baker et al., 2002); 100 women with breast cancer (Koopman et al., 2001); 78 patients with</p>	<p><i>Reliability</i> Internal consistency reported above 0.80 (Baker et al.; Koopman et al.)</p>	<p>Good; consistent with CES-D (Baker et al.)</p>	<p>Fairly easy to use; has multiple</p>	

Name of Tool	Populations	Reliability and Validity	Sensitivity	Clinical Utility	Comment
	<p>mixed cancer diagnoses (Dimeo et al., 1997); and 35 patients with mixed cancer diagnoses (Wright et al., 2002)</p> <p>Both genders (Baker et al., Dimeo et al.; Wright et al.)</p>	<p><i>Validity</i> Construct and criterion validity established with comparison with other instruments (e.g., CES-D) (Baker et al.), Hopkins Symptom Distress scale</p>		subscales	
POMS (Continued)		(Koopman et al.), Revised Symptom Checklist-90 (Dimeo et al.), HADS (Wright et al.)			
Profile of Mood States-short form (POMS-SF)	Used with 428 bone marrow transplant recipients with mixed cancer diagnoses and both genders (Baker et al.); 126 men with prostate cancer (Ullrich et al., 2003).	<p><i>Reliability</i> Reliability reported above 0.78 (Baker et al., Shacham; Ullrich et al.)</p> <p><i>Validity</i> Construct and criterion validity established with comparison with other depression instruments, e.g., CES-D, Bradburn PANAS (Baker et al., Ullrich et al; Divergent and discriminant validity supported (Baker et al.)</p>	Not known	Fairly easy to use; has multiple subscales	
Zung Self-rating Depression Scale (ZSDS)	Used with mixed cancer populations: 1,109 mixed cancer diagnoses (Dugan et al., 1998), 180 mixed cancer diagnoses (Hwang et al., 2003); 1,109 mixed cancer diagnoses (Passik et al., 2000); and 60 mixed	<p><i>Reliability</i> Internal consistency reported > 0.84 (Dugan et al.; Hwang et al.; Passik et al., 2001).</p>	Excellent (100%) when using normal-moderate cutoff scores (>48); very good (92.6%) when	Easy to use	

Name of Tool	Populations	Reliability and Validity	Sensitivity	Clinical Utility	Comment
	<p>diagnoses (Passik et al., 2001)</p> <p>Used with both genders (Dugan et al., 1998; Hwang et al., 2003; Passik et al., 1998, 2000, 2001)</p> <p>Used with those older than 60 years (Passik et al., 2000, 2001)</p>	<p><i>Validity</i> Construct and criterion validity established with other screening instruments (Dugan et al.; Hwang et al.; Passik et al., 2001)</p>	<p>using normal-mild cut-off scores (>40) (Passik et al., 2001)</p>		
<p>ZSDS (Continued)</p>	<p>et al., 2000, 2001)</p>	<p>Factor analysis conducted with four-factor solution: cognitive, manifest depressive mood; somatic-non-eating; somatic-eating (Passik et al., 2000).</p>			
<p>Brief Zung Self-rating Depression Scale (ZSDS)</p>	<p>Used with mixed cancer populations: 1,109 mixed cancer patients; 60 mixed diagnosis (Passik et al., 2000, 2001)</p> <p>Used with both genders (Dugan et al., Hwang et al) and those older than 60 years (Dugan et al.; Passik et al., 2001)</p>	<p><i>Reliability</i> Internal consistency reported at 0.84 (Dugan et al.)</p> <p><i>Validity</i> Construct and criterion validity with other screening instruments established (e.g., mini international neuropsychiatric interview (MINI) and with ZSDS (Passik et al., 2001)</p> <p>Highly correlated with ZSDS at 0.92 (Dugan et al.)</p>	<p>Very good, similar to the longer version (Passik et al., 2001)</p>	<p>Easy to use</p>	

7. References Related to Specific Instruments to Measure Depression

- Endicott, J. & Spitzer, R.L. (1978). A Diagnostic Interview: the schedule for affective disorders and schizophrenia. *Archives of General Psychiatry*, 35, 837-844.
- First, M.B., Spitzer, R.L., Gibbon, M., & Williams, J.B.W. (1997). Structured clinical interview for DSM-IV Axis I Disorders-Patient Edition (SCID-I/P), Version 2.0, 4/97 Version). New York: Biometrics Research Department.
- Massie, M.J., & Popkin, M.K. (1998). Depressive Disorders (pp.518-540). In J. Holland (Ed.), *Psycho-oncology*. New York: Oxford University Press.
- Newport, D.J., & Nemeroff, C.B. (1998). Assessment and treatment of depression in the cancer patient. *Journal of Psychosomatic Research*, 45,215–237. [PubMed Abstract](#)
- Robins, L.N., Helzer, J.E., Croughan, J., & Ratcliff, K.S. National Institute of Mental Health Diagnostic Interview Schedule: Its history, characteristics and validity. *Archives of General Psychiatry*, 38, 381-389.
- Trask, P.C. (2004). Assessment of depression in cancer patients. *Journal of the National Cancer Institute Monographs*, 32, 80–92. [PubMed Abstract](#)

References for Beck Depression Inventory

- Allen, R., Newman, S.P., & Souhami, R.L. (1997). Anxiety and depression in adolescent cancer: Findings in patient and parents at the time of diagnosis. *European Journal of Cancer Care*, 33, 1250–1255.
- Beck, A.T., & Beck, R.W. (1972). Screening depressed patients in family practice: A rapid technique. *Postgraduate Medicine*, 52, 81–85.
- Beck, A.T., Ward, C.H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561–571.
- Berard, R.M.F., Boermeester, F., & Viljoen, G. (1998). Depressive disorders in an out-patient oncology setting: Prevalence, assessment, and management. *Psycho-Oncology*, 7, 117-120.
- Love, A.W., Grabsch, B., Clarke, D.M., Bloch, S., & Kissane, D.W. (2004). Screening for depression in women with metastatic breast cancer: A comparison of the Beck Depression Inventory Short Form and the Hospital Anxiety and Depression Scale. *Australian and New Zealand Journal of Psychiatry*, 38, 526–531.
- McLachan, S., Allenby, A., Matthews, J., Wirth, A., Kissane, D., Bishop, M., et al. (2001). Randomized trial of



- coordinated psychosocial intervention based on patient self-assessments versus standard care to improve the psychosocial functioning of patients with cancer. *Journal of Clinical Oncology*, 19, 4117–4125.
- Ozalp, G., Sarioglu, R., Tuncel, G., Aslan, K., & Kadiogullari, N. (2003). Preoperative emotional states in patients with breast cancer and postoperative pain. *Acta Anaesthesiologica Scandinavica*, 47, 26–29.
- Steven, J., Simpson, A., Carlson, L.E., Beck, C.A., & Patten, S. (2002). Effects of a brief intervention on social support and psychiatric morbidity in breast cancer patients. *Psycho-Oncology*, 11, 282–294.
- Pirl, W.F., Siegel, G.I., Goode, M.J., & Smith, M.R. (2002). Depression in men receiving androgen deprivation therapy for prostate cancer. A pilot study. *Psycho-oncology*, 11, 518–523.
- Yin, P., & Fan, X. (2000). Assessing the reliability of Beck Depression Inventory Scores: Reliability generalization across studies. *Education and Psychological Measurement*, 60, 201–223.

References for Center for Epidemiological Studies-Depression Scale (both versions)

- Andrykowski, M., Curran, S.L., Studts, J.L., Cunningham, L., Carpenter, J.S., McGrath, P.C., et al. (1996). Psychosocial adjustment and quality of life in women with breast cancer and benign breast problems: A controlled comparison. *Journal of Clinical Epidemiology*, 49, 827–835.
- Badger, T., Segrin, C., Meek, P., Lopez, A.M., Bonham, E., & Sieger, A. (2005). Telephone interpersonal counseling for women with breast cancer: Symptom management and quality of life. *Oncology Nursing Forum*, 32, 273–279.
- Badger, T.A., Braden, C.J., & Mishel, M.H. (2000, April). *Depression and side effects of Mexican-American women with breast cancer*. Symposium presented at the 33rd Annual Communicating Nursing Research Conference, Western Institute of Nursing, Denver, CO.
- Carpenter, J.S., Andrykowski, M.A., Wilson, J., Hall, L., Rayens, M.K., Sachs, B., et al. (1998). Psychometrics for two short forms of the Center for Epidemiologic Studies–Depression Scale. *Issues in Mental Health Nursing*, 19, 481–494.
- Hann, D., Winter, K., & Jacobsen, P. (1999). Measurement of depression in cancer patients: Evaluation of the Center for Epidemiological Studies Depression Scale (CES-D). *Journal of Psychosomatic Research*, 46, 437–443.
- Katz, M.R., Kopek, N., Waldron, J., Devins, G.M., & Tomlinson, G. (2004). Screening for depression in head and neck cancer. *Psycho Oncology*, 13, 269–280.
- Kurtz, M.E., Kurtz, J.C., Stommel, M., Given, C.W., & Given, B. (2002). Predictors of depressive symptomatology of geriatric patients with lung cancer—A longitudinal analysis. *Psycho-Oncology*, 11, 12–22.



- Radloff, L.S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385–401.
- Schein, R.L., & Koenig, H.G. (1997). The Center for Epidemiological Studies-Depression (CES-D) Scale: Assessment of depression in the medically ill elderly. *International Journal of Geriatric Psychiatry, 12*, 436–446.
- Schroevers, M.J. Ranchor, A.V., & Sanderman, R. (2004). The role of age at the onset of cancer in relation to survivors' long-term adjustment: A controlled comparison over an eight-year period. *Psycho-Oncology, 13*, 740–752.
- Stommel, M., Given, B.A., Given, C.W., Kalaian, H.A., Schulz, R., & McCorkle, R. (1993). Gender bias in the measurement properties of the Center for Epidemiological Studies Depression Scale (CES-D). *Psychiatry Research, 49*, 239–250.
- Vernon, S.W., Gritz, E.R., Peterson, S.K., Amos, C.I., Perz, C.A., Baile, W.F., et al. (1997). Correlates of psychologic distress in colorectal cancer patients undergoing genetic testing for hereditary colon cancer. *Health Psychology, 16*, 73–86.
- Visser, M.R.M., & Smets, E.M.A. (1998). Fatigue, depression and quality of life in cancer patients: How are they related. *Supportive Care in Cancer, 6*, 101–108.

References for Depression Questionnaire for Children

- Grootenhuis, M.A., & Last, B.F. (2001). Children with cancer with different survival perspectives: Defensiveness, control strategies, and psychological adjustment. *Psycho-Oncology, 10*, 305–314.
- De Wit, A.M. (1987). *Depressievragenlijst voor kinderen (DVK-KDVK), handleiding en testmateriaal*. Amersfoort-Leuven, the Netherlands: Acco.

References for Geriatric Depression Scale (both versions)

- Chen, H., Cantor, A., Meyer, J., Corcoran, M.B., Grendys, E., Cavanaugh, D., et al. (2002). Can older cancer patients tolerate chemotherapy? A prospective study. *Cancer, 97*, 1107–1114.
- Respini, D., Jacobsen, P.B., Thors, C., Tralongo, P., & Balducci, L. (2003). The prevalence and correlates of fatigue in older cancer patients. *Critical reviews in Oncology Hematology, 47*, 273–279.
- Watson, L.C., Lewis, C.L., Kistler, C.E., Amick, H.R., & Boustani, M. (2004). Can we trust depression screening

- instruments in healthy 'old old' adults? *International Journal of Geriatric Psychiatry*, *19*, 278–285.
- Wu, H., & McSweeney, M. (2004). Assessing fatigue in persons with cancer: An instrument development and testing study. *Cancer*, *101*, 1685–1695.
- Yesavage, J.A., Brink, T., Rose, T.L., Lum, O., Huang, V., Adey, M., et al. (1982). Development and validation of a geriatric depression screening scale: a preliminary report. *Journal of Psychiatric Research*, *17*, 37–49.

References for Hospital Anxiety and Depression Scale

- Berard, R.M.F., Boermeester, F., & Viljoen, G. (1998). Depressive disorder in an out-patient oncology setting: Prevalence, assessment, and management. *Psycho-Oncology*, *7*, 112–120.
- Bishop, S.R., & Warr, D. (2003). Coping, catastrophizing and chronic pain in breast cancer. *Journal of Behavioral Medicine*, *26*, 265–281.
- Bjelland, I., Dahl, A.A., Haug, T.T., & Neckelmann, D. (2002). The validity of the Hospital Anxiety and Depression Scale: An updated literature review. *Journal of Psychosomatic Research*, *52*, 69–77.
- Ciarmella, A., & Poli, P. (2001). Assessment of depression among cancer patients: The role of pain, cancer type and treatment. *Psych- Oncology*, *10*, 156–165.
- Hall, A., Hern, R.A., & Fallowfield, L. (1999). Are we using appropriate self-report questionnaires for detecting anxiety and depression in women with early breast cancer? *European Journal of Cancer*, *35*, 79–85.
- Keller, M., Sommerfeldt, S., Fischer, C., Knight, L., Riesbeck, M., Lowe, B., et al. (2004). Recognition of distress and psychiatric morbidity in cancer patients: A multi-method approach. *Annals of Oncology*, *15*, 1243–1249.
- Lampic, C., Thurfjell, E., Bergh, J., Carlsson, M., & Sjoden, P. (2002). Life values before versus after a breast cancer diagnosis. *Research in Nursing and Health*, *25*, 89–98.
- Lampic, C., Thurfjell, E., Bergh, J., & Sjoden, P. (2001). Short- and long-term anxiety and depression in women recalled after breast cancer screening. *European Journal of Cancer*, *37*, 463–469.
- Lees, N. & Lloyd-Williams, M. (1999). Assessing depression in palliative care patients using the visual analogue scale: A pilot study. *European Journal of Cancer Care*, *8*, 220–223.
- Lloyd-Williams, M., Friedman, T., & Rudd, N. (2001). An analysis of the validity of the Hospital Anxiety and Depression Scale as a screening tool in patients with advanced metastatic cancer. *Journal of Pain and Symptom Management*, *22*, 990–996.
- Love, A.W., Kissane, D.W., Bloch, S., & Clarke, D.M. (2002). Diagnostic efficacy of the Hospital Anxiety and Depression Scale in women with early stage breast cancer. *Australian and New Zealand Journal of Psychiatry*, *36*, 246–250.

- Morasso, G., Costantini, M, Viterbori, P., Bonci, F., Del Mastro, L., Musso, M., et al. (2001). Predicting mood disorders in breast cancer patients. *European Journal of Cancer*, 37, 216–223.
- Osborne, R.H., Elsworth, G.R., & Hopper, J.L. (2003). Age-specific norms and determinants of anxiety and depression in 731 women with breast cancer recruited through a population-based cancer registry. *European Journal of Cancer*, 39, 755–762.
- Osborne, R.H., Elsworth, G.R., Sprangers, M.A.G., Oort, F.J., & Hopper, J.L. (2004). The value of the Hospital Anxiety and Depression Scale (HADS) for comparing women with early onset breast cancer with population-reference women. *Quality of Life Research*, 13, 191-206.
- Payne, D.K., Hoffman, R.G., Theodoulou, M., Dosik, M., & Massie, M.J. (1999). Screening for anxiety and depression in women with breast cancer: Psychiatry and medical oncology gear up for managed care. *Psychosomatics*, 40, 64–69.
- Skarstein, J., Aass, N., Fossa, S.D., Skovlund, E., & Dahl, A.A. (2000). Anxiety and depression in cancer patients: Relation between Hospital Anxiety and Depression Scale and European Organization for Research and Treatment of Cancer Core Quality of Life Questionnaire. *Journal of Psychosomatic Research*, 49, 27–34.
- Smith, A.B., Selby, P.J., Velikova, G., Stark, D., Wright, E.J., Gould, A., et al. (2002). Factor analysis of the Hospital Anxiety and Depression scale from a large cancer population. *Psychology and Psychotherapy: Theory, Research and Practice*, 75, 165–176.
- Sollner, W., DeVries, A., Steixner, E., Lukas, P., Sprinzi, G., Rumpold, G., et al. (2001). How successful are oncologists in identifying patient distress, perceived social support and need for psychosocial counseling? *British Journal of Cancer*, 84, 179–185.
- Trask, P., Paterson, A., Riba, M., Brines, B., Griffith, K., Parker, P., et al. (2002). Assessment of psychological distress in prospective bone marrow transplant patients. *Bone Marrow Transplantation*, 29, 917–927.
- Zigmond, A.S., & Snaith, R.P. (1983). The hospital anxiety and depression scale. *ACTA Psychiatric Scand*, 67, 361-370.

References for Profile of Mood States (both versions)

- Baker, F., Denniston, M., Zabora, J., Polland, A., & Dudley, W.N. (2002). A POMS short form for cancer patients: Psychometric and structural evaluation. *Psycho-Oncology*, 11, 273–281.
- Dimeo, F., Stieglitz, R.D., Novelli-Fischer, U., Fetscher, S., Mertelsmann, R., & Keul, J. (1997). Correlation between physical performance and fatigue in cancer patients. *Annals of Oncology*, 8, 1251–1255.



- Koopman, C., Angell, K., Turner-Cobb, J.M., Kreshka, M.A., Donnelly, P., McCoy, R., et al. (2001). Distress, coping and social support among rural women recently diagnosed with primary breast cancer. *Breast Journal*, 7, 25–33.
- McNair, D.M., Lorr, M., Dropplemann, L.F. (1971/1992). *Profile of Mood States (revised)*. San Diego, CA: EDITS/Educational and Industrial Testing Service.
- Shacham, S. (1983). A shortened version of the Profile of Mood States. *Journal of Personality Assessment*, 47, 305–206.
- Ullrich, P.M., Carson, M.R., Lutgendorf, S.K., & Williams, R.D. (2003). Cancer fear and mood disturbance after radical prostatectomy: Consequences of biochemical evidence of recurrence. *Journal of Urology*, 169, 1449–1452.
- Wright, S., Courtney, U., & Crowther, D. (2002). A quantitative and qualitative pilot study of the perceived benefits of autogenic training for a group of people with cancer. *European Journal of Cancer Care*, 11, 122–130.

References for Zung Self-Rating Depression Scale (both versions)

- Dugan, W., McDonald, M.V., Passik, S.D., Rosenfeld, B.D., Theobald, D., & Edgerton, S. (1998). Use of the Zung Self-Rating Depression Scale in cancer patients: Feasibility as a screening tool. *Psycho-Oncology*, 7, 483–493.
- Hwang, S.S., Chang, V.T., & Kasimis, B.S. (2003). A comparison of three fatigue measures in veterans with cancer. *Cancer Investigation*, 21, 363–373.
- Passik, S.D., Dugan, W., Rosenfeld, B., Theobald, D.E., & Edgerton, S. (1998). Oncologists' recognition of depression in their patients with cancer. *Journal of Clinical Oncology*, 16, 1594–1600.
- Passik, S.D., Kirsch, K.L., Donaghy, K.B., Theobald, D.E., Lundberg, J.C., Holtsclaw, E., et al. (2001). An attempt to employ the Zung Self Rating Depression Scale as a 'lab test' to trigger follow-up in ambulatory oncology clinics: criterion validity and detection. *Journal of Pain and Symptom Management*, 21, 273–281.
- Passik, S.D., Lundberg, J.C., Rosenfeld, B., Kirsch, K.L., Donaghy, K., Theobald, D., et al. (2000). Factor analysis of the Zung Self-Rating Depression Scale in a large ambulatory oncology sample. *Psychosomatics*, 41, 121–127.
- Zung, W.W.K. (1965). A self-rating depression scale. *Archives of General Psychiatry*, 12, 60–78.