How To:

Diagnose Depression in Cancer Settings

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Useful Abbreviations

HADST	– Hospital anxiety and depression scale – total score
HAM-D	– Hamilton Depression Rating Scale
MADRS	– Montgomery-Åsberg Depression Rating Scale
BDI	– Beck Depression Inventory
SDS	– Zung Self-rating Depression Scale
CES-D	– Centre for Epidemiologic Studies Depression Scale

1. Overview of Clinical Depression

1.1 Introduction

Depression is a serious condition characterised by persistent low mood, loss of interest, low motivation and social withdrawal (in some combination). Despite considerable work on neurobiological aspects no foolproof diagnostic or classificatory system has been agreed. Most define a threshold of severity of clinical significance in order to separate normal sadness from clinical depression. However, for the most part this threshold is arbitrary. A related unresolved question is whether depression should be classified using dimensions or categories. Categories distinguish cases from non-cases, whilst dimensions help identify a spectrum of severities.[1]

Figure 1. Meta-analytic rates of emotional complications of cancer
Adapted from Mitchell AJ. (2007) Pooled results from 38 analyses of the accuracy of distress thermometer and other ultra-short methods of detecting cancer-related mood disorder. J Clin Oncol 25:4670-4681.

Clinical depression (or major depressive disorder) is typically a relapsing remitting illness that rarely occurs as a solitary episode. Even depressions treated in primary care tend to be recurrent, chronic and co-morbid.[2][3][4] 85% of those presenting with a major depressive episode will have at least one more episode in their life time.[5][6] The chances of hospitalisation over ten years is between 30-60%.[7] The median number of episodes reported from long-term studies is four and 25% of sufferers endure six or more episodes.[8] Depression is also a complication of cancer that deserves to be taken serious. It is linked with lower quality of life, partner distress, and in some case accelerated mortality.[9][10][11]

1.2 Prevalence of Depression, Anxiety and Distress in Cancer

Despite much debate I think it is fair to conclude their is no universal rate of depression in cancer but rather different rates depending on background risk factors such as stage disease.[12][13][14][15][16] A number of rating scales have been used to estimate rates although a semi-structured psychiatric interview remains the gold standard (see below). For example, Sharpe's group in Edinburgh (2007) surveyed 3071 patients using a touch-screen adaptation of the HADS. 22% had distress (defined by a total HADS score ≥15), 23% had anxiety and 16% depression. Zabora and colleagues (2001) used the original BSI, and found prevalence rates of 35% for distress, 24% anxiety and 19% depression.[17] Carlson and colleagues (2004) used the shorter BSI-18 in 2776 patients. Pooling data from these two studies shows that individuals with lung, brain and pancreatic cancer tend to suffer most distressed but differences between cancers are relatively modest.[18] The mean level of distress from the BSI studies was 37.8% almost identical to that found by Fallowfield et al 2001 in 2297 patients using the General Health Questionnaire (GHQ12) (36.4%).[19]

In 2007 our group looked at meta-analytic rates of distress, depression and anxiety using both self-report and semi-structured interview (figure 1). There was a 38% rates of anxiety and 20% depression by self-report although these rates were 18% and 13% at interview. We can conclude from these studies that whilst most individuals suffer distress whilst coping with cancer, most do not develop (clinical) syndromal depression. Nevertheless when depression is present, every effort should be made to detect, and treat it.
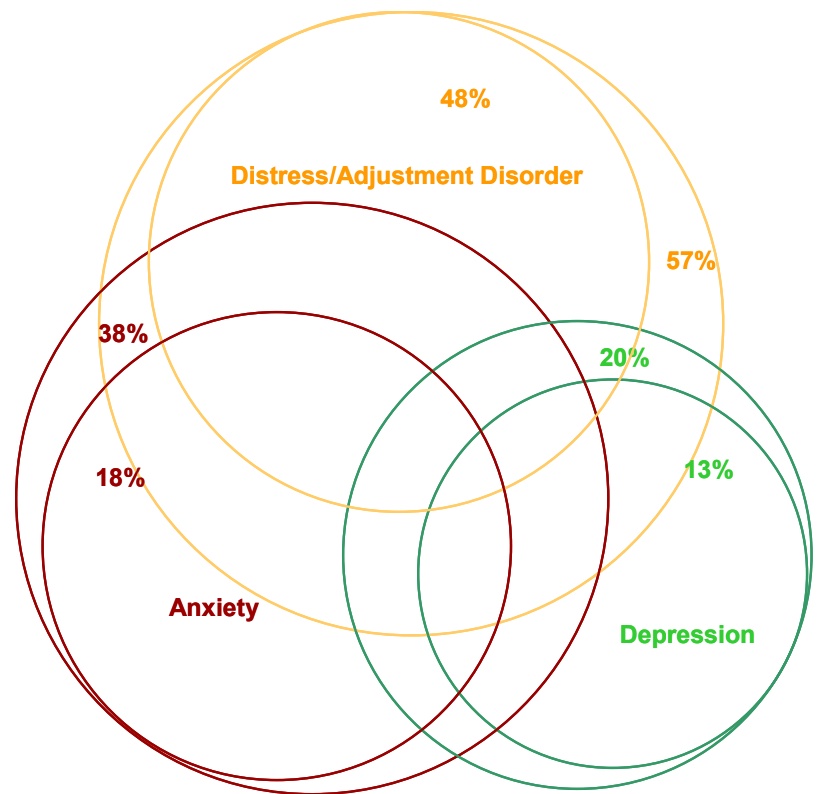
1. 3 Looking Beyond Depression in Cancer

It is important to recognize that many patients who struggle emotionally don't meet criteria for DSMIV major depression. This has led both to the development of the concept of distress as the 6th vital sign[20] (and hence ultra-short screens) and also to a more precise delineation of mood disorders including minor and subsyndromal variants.[21] Each method serves a different purpose. Those who want to identify and classify emotional disorders as accurately as possible might use a structured psychiatric interview. Those wanting to detect emotional difficulties as simply as possible might use one or two simple questions (ultra-short screens).

The long standing debate about how common is depression (or anxiety) in cancer has also been refined. Cancer is not a homogenous condition, with significant differences between the early and late stages. Sufferers with early cancer, typically those undergoing first episode chemotherapy have a low to moderate risk of emotional complications[22] whereas those in the late stages, such as those with metastases have a high risk of emotional complications.[23] Research is beginning to examine whether screening methods should differ for low and high prevalence settings. In addition new research has attempted to examine what methods might best distinguish major from those without major depression, major+minor depression from those with subsyndromal symptoms alone and healthy controls and those with any form of depressive symptoms from those without.

2. Importance of Symptoms of Depression in Cancer

2.1 Symptoms in ICD10 and DSMIV

In ICD-10 two "typical" symptoms are required from the following three: *depressed mood, loss of interest, and decreased energy*. A minimum of four symptoms are required in total to qualify as mild depression, with five symptoms qualifying as moderate depression. To qualify as a severe depressive episode all three typical symptoms must be present plus at least four other symptoms. In DSM-IV either depressed mood or loss of interest is required for a diagnosis of a major depressive disorder and a total of 5 of a list of 9 symptoms are required (table 2). In theory assigning special significance to core features reduces false-positive diagnoses in those patients who manifest five of the nine criteria but without low mood or lost interest.

Table 1 Comparison of depression symptoms in ICD-10 and DSM-IV

ICD-10	DSM-IV major/minor depressive disorder
Depressed mood*	Depressed mood by self-report or observation made by others*
Loss of interest*	Loss of interest or pleasure*
Reduction in energy*	Fatigue/loss of energy
Loss of confidence or self-esteem	Worthlessness/excessive or inappropriate guilt
Unreasonable feelings of self-reproach or inappropriate guilt	
Recurrent thoughts of death or suicide	Recurrent thoughts of death, suicidal thoughts or actual suicide attempts
Diminished ability to think/concentrate or indecisiveness	Diminished ability to think/concentrate or indecisiveness
Change in psychomotor activity with agitation or retardation	Psychomotor agitation or retardation
Sleep disturbance	Insomnia/hypersomnia
Change in appetite with weight change	Significant appetite and/or weight loss

2.2 Severity in ICD10 / DSMIV

Both ICD-10 and DSM-IV classify clinically significant depressive episodes as mild, moderate and severe based on the number, type and severity of symptoms present and degree of functional impairment. Table 2 shows the number of symptoms required by each diagnostic system which are less specific DSM-IV. The prescriptive symptom counting approach of ICD-10 tends to lend itself to using symptom counting alone to determine severity (see section 5 below). Both ICD-10 and DSM-IV have a time specifier of a minimum of 2 weeks duration.

Table 2 Number of symptoms required in ICD-10 and DSM-IV

	ICD-10 depressive episode	DSM-IV major depression	DSM-IV Minor depression	DSM-IV susyndromal depression
Very Mild (subclinical)	1-3		Core plus 0 or 1	No core symptoms
Mild	4	Core plus 2 (five total)		
Moderate	5-6	6 symptoms		
Severe	7+	7+ symptoms		

Both ICD10/DSMIV also recommend an assessment of severity and functional impairment to ascertain diagnosis and severity

As ICD-10 requires only 4 symptoms for a diagnosis of a mild depressive episode, it can identify more people as having a depressive episode compared with DSM-IV. One study in primary care in Europe identified 2 to 3 times more people as depressed using ICD-10 criteria compared with DSM-IV (11.3% v 4.2%) (Wittchen et al., 2001).[24] However another study in Australia (Andrews et al 2008)[25] found similar rates using the two criteria (6.8% v 6.3%) but slightly different populations were identified (83% concordance) which appears to be related to the need for only one of 2 core symptoms for DSM-IV but 2 out of 3 for ICD-10.

Traditionally the minimum duration of persistent symptoms for major depression is 2 weeks and for chronic depression (or dysthymia) 2 years. These are conventional without good empirical basis.[26] Longer duration predict episode length and longer illness predicts future episode.[27] I propose the following 12 cells attempt to classify clinic forms of depression (table 3).

Table 3. A Simplified Depression Nosology

Severity	Duration < 2weeks	Duration 2 – 52 weeks	Duration > 1 year
Very Mild (subclinical)	Brief subsyndromal symptoms of depression	Subsyndromal symptoms of depression	chronic subsyndromal symptoms of depression
Mild	Brief Mild Depression	Mild Depressive Episode	Chronic Mild Depression
Moderate	Brief Moderate Depression	Moderate Depressive Episode	Chronic Moderate Depression
Severe	Brief Severe Depression	Severe Depressive Episode	Chronic Severe Depression

2.3 The Issue of Somatic Symptoms

Some authors have proposed modifications to existing mood scales (or invented custom scales) expressly for the purpose of identifying depression linked with comorbid medical illness. For example the Edinburgh Postnatal Depression Scale (EPDS),[28] the Beck Depression Inventory Fast-Screen for Medical Patients,[29] the Geriatric Depression Scale (GDS), and the Hospital Anxiety and Depression Scale (HADS) intentionally omit most somatic symptoms in favour of cognitive questions (see appendix) and are touted as being superior to measures that include such symptoms.[30] Most commonly fatigue, loss of appetite and weight changes have been omitted.[31] In this approach somatic symptoms are assumed to contaminate a diagnosis of co-morbid depression and hence suspected to cause an over-diagnosis if they were included.[32] The assumption that standard approaches to the assessment of depression produce upwardly biased estimates and that these alternative approaches work better, however, is based on face validity rather than empirical evidence of bias or of improved performance with alternative approaches.[33] There are few examples of empirical studies that have tested the contribution of somatic symptoms by measuring diagnostic accuracy using two versions of a scale or tool, one with somatic symptoms and one without somatic symptoms. Chochinov et al (1994) compared results from semi-structured diagnostic interviews in 130 patients receiving palliative care.[34] Diagnoses according to the Research Diagnostic Criteria (RDC) were compared with diagnoses made according to Endicott's revised criteria (which replace somatic symptoms with non-somatic alternatives). The authors found that removing somatic symptoms may reduce apparent prevalence but they did not look diagnostic accuracy. Dugan et al (1998) analyzed the Zung SDS both with and without somatic items and reported 5% more false-positives when measuring depression in cancer with somatic items.[35] Dugan et al concluded that the inclusion of somatic items might cause an overestimate in depression prevalence rates although this was not tested directly.

> **Box 1. Approaches to Somatic Symptoms When Diagnosing Depression**
>
> **Inclusive** The inclusive approach uses all of the symptoms of depression, regardless of whether they may or may not be secondary to a physical illness.
>
> **Etiologic** This counts a symptom of depression only if it is clearly not the result of the physical illness. In reality it is difficult to attribute accurately.
>
> **Substitutive** the substitutive approach replaces symptoms that may be related to the physical illness (e.g., fatigue) with additional cognitive symptoms (e.g., indecisiveness, hopelessness, pessimism)
>
> **Exclusive** This eliminates two common symptoms of depression (i.e., fatigue and appetite/weight changes) that are frequently the result of a physical illness and uses only the other symptoms of depression

Further specific somatic symptoms may have special significance. Ehrt et al (2007) found that depressed patients with Parkinson's disease had less loss of energy, but more concentration problems than depressed control subjects.[36] Leentjens et al (2001) found that two somatic symptoms (early morning awakening and reduced appetite) had good discriminative properties for depression in Parkinson's disease. Akechi et al (2003) used data from 220 cancer patients with major depression to examine the inter-correlations among the DSM-IV somatic and nonsomatic symptom criteria as well as whether the presence of an individual somatic symptom could discriminate the severity of major depression. Appetite changes and a diminished ability but not sleep disturbance and fatigue were significantly associated with nonsomatic symptoms. These associations were consistent after adjusting for physical functioning and pain.[37]

Recently our group has examined the significance of somatic symptoms in a meta-analysis (currently unpublished). We found evidence that somatic symptoms still have diagnostic significance in 1. those with depression and comorbid physical illness and 2. those with depression in late-life. Therefore contrary to the prevailing convention we do not recommend indiscriminately ignoring or removing somatic symptoms from methods to assess depression.

3. Eliciting Symptoms of Depression in Cancer

3.1 In Primary Care

A number of studies have monitored the ability of clinicians to look for depression. Deveugele and colleagues (2004) analysed 2095 consultations from 168 GPs using the Roter interaction analysis system.[38] Clinicians differed markedly in their psychosocial and emotional communication. Badger et al (1994) found that two communication behaviors that predicted successful recognition of depression, namely the proportion of the interview devoted to emotional issues and the use of broad open-ended psychosocial questions.[39] Carney and co-workers (1999) found that GPs who recognized depression asked twice as many questions about feelings and affect compared with those who did not.[40] Regarding individual symptoms Ani et al (2008) examined the ability of clinicians to recognize specifici DSMIV symptoms of depression.[41] The agreement between depression symptoms and physician clinical assessment was very low (kappas 0.001–0.101) with most agreement for suicidal ideation. Of the DSM symptoms of depression, clinicians looked for 1.low mood 2. insomnia and 3. fatigue but rarely worthlessness, guilt, psychomotor change and suicidal thoughts. Further, Miller and colleagues (2002) found that when unassisted, clinicians evaluated an average of only 32% of DSMIV criteria for MDD. Even psychiatrists, who usually remember to ask about low mood, enquire about loss of interest pleasure in only 8% of evaluations for depression (Miller et al, 2002)[42] General practitioners only consider low mood or loss of interest to be useful in detecting depression in 54% and 36% of cases, respectively (Krupinski and Tiller, 2001).[43]

3.2 In Cancer Care

Only a few studies have examined how cancer professionals look for depression or anxiety. Lawrie et al (2004) examined 134 doctors working palliative medicine.[44] 73% said they routinely assessed patients for depression but 50% said they never used a formal method, 10% used a simple one question test ("are you depressed?") and 27% used HADS. Mitchell and colleagues (2008) found that 63.3% of multidisciplinary cancer clinicians "always or regularly" screened for distress/depression whereas 36.7% only occasionally asked about emotional problems or relied on patients mentioning a problem first.[45] Only 5.9% of all staff reported using a formal questionnaire with the majority (62.2%) relying on their own clinical judgement. About one third attempted to remember and use one, two or three simple questions. The main barriers to screening in this sample were lack of time, lack of training on screening methods and low personal skills or confidence about diagnosis. In a national survey of oncologists practicing in the United States 65.0% reported screening patients for distress routinely, but only 14.3% used a screening instrument.[46] Independent predictors for screening patients for distress included availability of mental health services, knowledge of NCCN guidelines, experience, lack of time, uncertainty about identifying distress, and female gender of the practitioner. Supporting evidence from primary care reinforces that most health professionals do not use a scale to diagnose or quantify depression and many do not ask about emotional issues routinely.

Box 2. Clinical Questions Enquiring About Depression

<u>Low mood</u>
How are you feeling, how is your mood?
Do you become tearful easily?
<u>Loss of interest (Anhedonia)</u>
Have you lost interest in things that were usually enjoyable?
Are you still enjoying the things you used to?
<u>Motivation / Participation</u>
Are you able to keep your hobbies and work going?
Do you find it hard to get going in the morning?
Do you find if tough to see jobs through right now?
<u>Concentration:</u>
How is your concentration?
Can you read the paper or watch TV and take it in?
<u>Irritability</u>
Are you more snappy than usual?
Do you easily loose your temper with those around?
<u>Anxiety</u>
Do you get easily worry and panicky?
Do you feel often on edge, unable to relax?
<u>Guilt</u>
Do you find yourself blaming yourself or regretting things you've done?
<u>Worthlessness</u>
Have you lost your confidence?
<u>Do you feel</u> you have little to offer compared to others?
Are you hard on yourself?
<u>Hopelessness</u>
Do you feel uncertain about the future?
Do you sometimes feel life is not worth living?

3.3 Tips for Eliciting Symptoms of Depression

Firstly be aware of the likely rate of depression in your clinical setting. Is this is a high risk setting where the prevalence of depression in high? Or a low risk setting? In a high prevalence setting you should be expecting to see depression much of the time. In a low prevalence settings you should be watching out for occasional cases amongst many people without mood disorder. In general, maintain a high index of suspicion especially where there are "red flags" such as tearfulness, isolation, trouble sleeping. However don't be hyper-vigilent or else too many false positives may occur. In all patients it is reasonable to ask generic questions such as "how are you feeling?" or "how are you coping at the moment?". If there is a positive response, or if the patient has persistent concerns or in the face of clear distress move on to ask about symptoms of depression (box 2). Even without a scale, a positive answer to either low mood or loss of interest is enough to suspect possible depression and warrants further questions. At the end of an appointment, if the diagnosis is not clear ask "is this out of the ordinary for you" and "are things generally getting better or worse at the current time". Don't be afraid to see the patient again in order to clarify a diagnosis. If depression appears to be present, ask the patient if they want help with these emotional concerns.

4. Barriers to Detecting Depression in Clinical Practice

4.1 Major Barriers

Three major barriers frequently interfere with clinicians ability to look for depression. These are as follows:

    A. Inadequate time with the patient (either in an individual consultation or over a sustained period)

    B. Low confidence and/or knowledge about what questions to ask

    C. Low index of suspicion, influencing when to ask the right questions.

These lead to several practical recommendations

    A. Time

1. Clinicians should spend a reasonable amount of time with the distressed patient

2. Clinicians should be prepared to see distressed patients on more than one occasion

3. Clinicians should be prepared to make a diagnosis after several appointments rather than instantaneously

    B. Confidence

4. Clinicians must recognize that many people present with physical symptoms[.47]

5. Clinicians should ask all new patients (who do no have insignificant reasons for consultation) about wellbeing

6. Clinicians should ask all patients who are distressed (and those at high risk of depression) about i. low mood ii. Loss of interest iii. Reduced motivation / participation

    C. Clinical Suspicion

7. Clinicians should be alert to distress in all patients with significant comorbidity

8. Clinicians should be alert to distress / depression in those with current psycho-social concerns, low social support and recent adverse life events (eg bereavement).

9. Clinicians should ask all patients with psychosocial concerns and particularly those in distress, if they want professional help at the current time.

4.2 Communication Practices

A number of authors have commented on suboptimal communication strategies from clinicians.[48] For example, clinicians appear to miss most cues and concerns and adopt behaviors that discourage disclosure.[49] [50] More sophisticated analysis with video-recording of consultations is revealing. In one of the best examples, Deveugele and colleagues (2004) analysed 2095 consultations from 168 GPs using the Roter interaction analysis system.[51] Clinicians differed markedly in their psychosocial and emotional communication. Some studies attempt to go further and uncover an explicit link with detection. In a seminal study from Marks et al (1979) a research psychiatrist made detailed observations on 2098 interviews carried out by 55 general practitioners.[52] The authors found it was possible to account for 67% diagnostic agreement using two factors 'interest and concern' and 'conservatism'. Badger et al (1994) found that two communication behaviors that predicted successful recognition of depression, namely the proportion of the interview devoted to emotional issues and the use of broad open-ended psychosocial questions.[53] Carney and co-workers (1999) found that GPs who recognized depression asked twice as many questions about feelings and affect compared with those who did not.[54] Doctor characteristics associated with *willingness to assess* were being aged over 35 years, having an interest in mental health, having had previous mental health training, being in part-time practice, seeing fewer than 100 patients per week, and working in regional centres. When primary care physician decisions for late-life depression were monitored a recorded treatment decision to occurs in about 5% of visits, a deferred or monitor only decision in about a third of visits and no decision made in about half of visits.[55]

Three recent observation studies have examined physician habits in relation to late-life depression. In a study based in nine primary care clinics involving 1,023 individuals, Fischer and colleagues (2003) found that physicians were only 6% as likely to ask older depressed patients about suicide risk, about one-fifth as likely to ask if they felt depressed compared with younger depressed patients.[56] Tai-Seale and colleagues (2005) observed 389 elderly patients and 33 physicians using video of their clinical interactions.[57] Physicians assessed depression in only 14% of the visits and used validated tools only three times. Depression assessment was more likely in visits that covered multiple topics contrary to the "crowding-out" hypothesis. Tai-Seale et al (2007) observed 35 primary care physicians interviewing 366 of their elderly patients. Discussion of mental health topics occurred in 22% of visits despite a high prevalence of depression. A typical mental health discussion lasted approximately 2 minutes.[58] Adelman and colleagues (2008) audiotaped 482 follow-up visits on three sites.[59] Depression was discussed in 7.3% of medical visits. Physicians raised depression in 41% of visits, patients raised depression in 48% of visits, and accompanying persons raised it in 10% of visits. Depression was raised almost exclusively in the first 2.5 years of the patient-physician relationship. Physicians with some geriatric training were more likely to discuss depression.

5. Assessment of Function Not Just Symptom Counts

ICD10 and DSMIV suggest a minimum number of symptoms which must be present to diagnose depression. Depression instruments have the advantage of not being dependent on a threshold of symptom severity thus measuring depression on a continuum. However for clinicians continuum measures can be unwieldy and many want a simple categorical system (eg table 3).

An important facet of depression is the extent to which daily function is impaired. Whilst there is some relationship between number of symptoms (akin to the WHO model of impairment) and functional limitation (disability) the link is only approximate. Measures of disability might include 1) the mental component summary scale of the SF-12 (Ware et al., 1996), 2) the role functioning scale of the Brief Disability Questionnaire (BDQ) (Ormel et al.,1999), 3) the number of "disability days" reported in the past four weeks.

Andrews' group studied this concept in 10,000 community volunteers from the Australian National Survey of Mental Health and Wellbeing.[60] The relationship between the number of depressive

Figure 2. Data from Andrews

symptoms and the four measures of impairment was linear. Three individual symptoms (sleep problems, energy loss, and psychomotor disturbance) were all independent predictors of three of the four measures of impairment. In a restricted elderly sample, over 60+ years, a linear relationship alone was observed for the relationship between the number of depressive symptoms and measures of function but not all symptoms of depression were equal predictors of impairment; loss of energy was the most consistent predictor.[61]
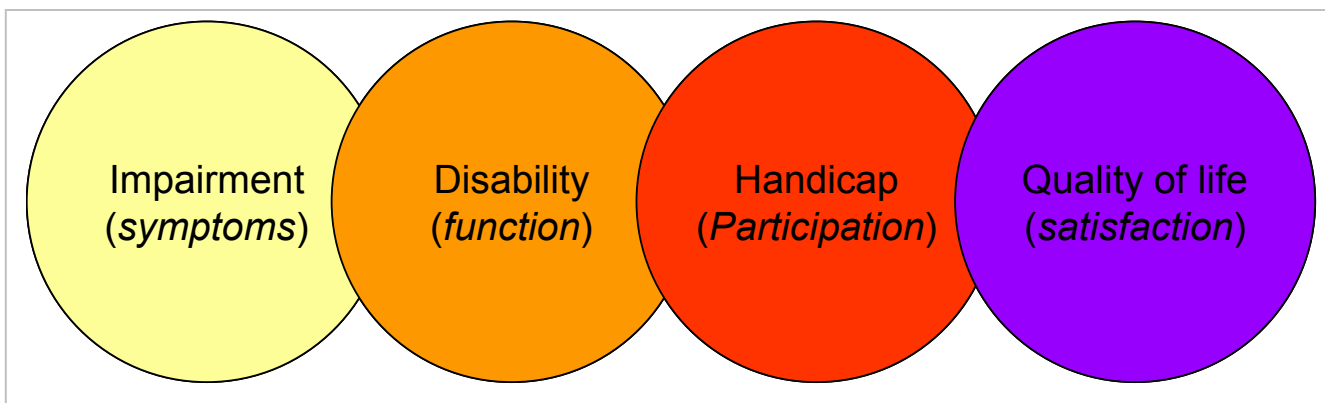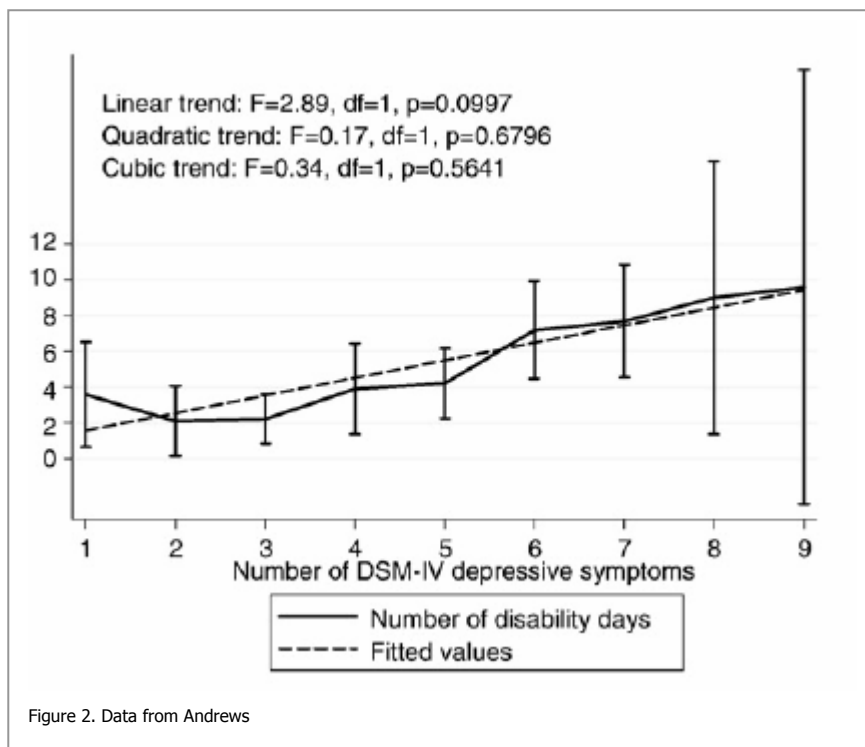
6. The Clinical Accuracy of Oncologists Diagnosing Depression

There have been several studies examining the unassisted ability of cancer clinicians to identify depression.[62 63 64 65 66] These provide an important baseline to any future attempts to improve detection through screening. One study used the BSI-18 on 2776 patients. Of those who met criteria for clinically significant distress almost half had not sought professional psychosocial support and surprisingly neither did they intend to seek help in the future (see help section below). Robust detection studies have now examined detection sensitivity as well as detection specificity, that is the ability to rule-in a case and rule-out a non-case. Sollner et al (2001) examined the accuracy of eight oncologists who had evaluated 298 cancer patients.[67] Against moderate or severe distress on the $HADS_T$ (at 12v13 cut-off), oncologists' sensitivity was 80.2% and specificity 32.8%. Using a $HADS_T$ cut-off 18 to represent severe distress, sensitivity was only 36.7% and specificity increased to 87.6%. This study suggests that oncologists are likely to identify only a minority of those with severe distress. Lesley Fallowfield's group (2001) compared cancer clinicians' ratings using visual analogue scales with an independent GHQ12 score (cut-off 3v4).[68] In this high prevalence sample, detection sensitivity was only 28.9%. Notably patients who were identified had longer consultations than did those who were missed. Our group recently completed a meta-analysis on oncologists' recognition (presented at IPOS2009) although results were similar to those found above.

There are many possible reasons for under-recognition. For example, just as not all health professionals ask about emotional difficulties, not all patients want to talk about their problems.[69] Clinician related factors linked with low detection include the willingness to look for emotional problems, clinical confidence / skills and consultation time. Patient factors include confidence in the clinician, willingness to discuss personal difficulties and belief that help is available. Several groups have examined whether clinician training might improve recognition of emotional problems.[70]

The diagnosis of major depression is also more complex than it first appears. For a DSM-IV the diagnosis of major depression requires 20 pieces of information to satisfy the five criteria. Rapp and Davis [1989] asked 49 primary care residents and 25 mental health residents to list the nine Criterion A symptoms of depression in DSM-III-R. The appetite/weight change symptom was recalled best by 85% of the residents, and the psychomotor changes least by 21% residents.[71] The core symptoms, depression, and loss of interest were recalled by 21 and 46% respectively. Medow et al. (1999) found that two-thirds of internal medicine residents could list five or more symptoms of DSM-IV.[72] As a results many use depressive disorder "not otherwise specified" to avoid coding accurately.[73] NOS. Winter et al. [1991] reported that 70% of people receiving a DSM-III-R diagnosis of depressive disorder NOS in primary care qualified for specific diagnoses when Research Diagnostic Criteria were applied.[74]

7. Improving Diagnoses of Depression i. Tools

7.1 Use of Semi-Structured Interview Based Approaches

Structured clinical interviews have traditionally been considered the gold standard for identifying the prevalence, clinical significance, and potential treatment of depression because of their rigorous criteria. Common interviews include the SADS, Structured Clinical Interview for DSM (SCID), Research Diagnostic Criteria, MINI and DIS. Table 3 provides a sample of the most commonly used interviews for assessing depression in cancer patients. Although they possess rigorous criteria, the problems with diagnosing depression using structured clinical interviews stem from the fact that the interviews are quite rigid and time consuming. There is also no validation in medical settings.

Table 4. Large Scale interview based studies in cancer

Method	Author	N	Diagnosis
Clinical Interview			
Clinical Interview (DSM II criteria)	Massie et al. (117)	334	Mixed
Clinical Interview (DSM II criteria)	Levine et al. (116)	100	Mixed
Clinical Interview (DSM II criteria)	Massie and Holland (118)	546	Mixed
Clinical interview (Endicott criteria)	Razavi et al. (50)	128	Mixed
DIS			
DIS (DSM-III criteria)	Maunsell et al. (114)	205	Breast
DIS (DSM-III criteria)	Sneeuw et al. (130)	556	Breast
DSM-III criteria			
DSM-III criteria	Derogatis et al. (1)	215	Mixed
DSM-III criteria	Colon et al. (129)	100	Acute leukemia
DSM-III/III-R; RDC; Endicott criteria	Kathol et al. (14)	808	Mixed
Other			
PAS (DSM-III criteria)	Ibbotson et al. (48)	513	Mixed
PSE	Hall et al. (31)	269	Breast
RDC (DSM-III criteria)	Lansky et al. (88)	500	Mixed
SADS	Chochinov et al. (22)	200	Mixed (Advanced
SCID			
SCID (DSM-III-R)	Ciaramella and Poli (25)	100	Mixed
SCID (all versions)	Payne et al. (113)	279	Breast cancer
SCID (DSM-IV criteria)	Berard et al. (29)	100	Mixed
Semistructured interview			
Semistructured interview	Worden (115)	120	Mixed
Structured interview	Silberfarb et al. (120)	146	Breast
Structured interview (ICD criteria)	Hardman et al. (127)	126	Mixed

7.2 Use of Self-Report (Scales) Based Approaches

Most depression screening studies in cancer are not "screening" in the strict epidemiological sense but rather case-finding attempts using one or many conventional depression scales. There are over 50 validated depression scales but only a handful are in everyday use (box 3). Nearly all classic depression severity tools published before 1980 have been "tested" in cancer. These include the HAM-D, the MADRS, the BDI, the SDS and the CES-D. Of the new scales developed since 1980 two have been particularly successful. These are the HADS and the Patient Health Questionnaire (PHQ9). In addition, tools examining more general psychopathology including the General Health Questionnaire (GHQ), and the Hopkins Symptom Checklist (SCL) family (SCL90, SCL-25 and SCL-8) have been validated.[75] [76]

Many authors have advised caution when using conventional scales in those with physical illness. The main concern is of contamination from somatic symptoms generated by the physical illness and leading to false positives. Whilst this is a potential hazard, there is also the issue of under-recognition if reported somatic symptoms are assumed to be due solely to physical illness. In fact a series of studies in cancer and general medicine examining this issue systematically have found that somatic symptoms retain diagnostic significance even in depression with underlying physical disease.[77] For example, Van Wilgen et

> **Box 4. Common Tools for Detection Emotional Disorders in Cancer Settings**
>
> **Distress**
> *Profile of Mood States (POMS)*
> *Psychosocial Adjustment to Illness Scale (PAIS)*
> *Brief Symptom Inventory (BSI)*
> *Symptom Checklist 90-R (SCL-90)*
> *Distress Thermometer*
>
> **Anxiety**
> *State-Trait Anxiety Inventory*
> *Hospital Anxiety and Depression Scale – Anxiety subscale*
> *Impact of Events Scale (IES)*
> *Fear of Progression Scale (FoP12)*
>
> **Depression**
> *Beck Depression Inventory (BDI-II)*
> *Montgomery-Åsberg Depression Rating Scale (MADRS)*
> *Zung Self-rating Depression Scale (SDS)*
> *Centre for Epidemiologic Studies Depression Scale (CES-D).*
> *Hospital Anxiety Depression Scale (HADs),*
> *the Geriatric Depression Scale (GDS),*
> *he Edinburgh Postnatal Depression Scale (EPDS)*
> *Patient Health Questionnaire (PHQ9).*

al (2006) analyzed the influence of somatic symptoms on the CES–D in 509 cancer patients compared with 223 depressed patients without cancer.[78] They found that somatic items do not interfere with the diagnosis of depression measured with the CES–D.

What then does the evidence suggest from diagnostic validity studies and do any particular scales emerge with superior accuracy? With numerous self-report questionnaires and visual analogue scales and a mixture of outcomes (distress, anxiety and depression) it is difficult to reach a consensus.[79] Leaving aside acceptability and licensing costs, the accuracy of such scales is best compared against the optimal references standard, usually a semi-structured psychiatric interview. Studies reporting multiple comparisons in head-to-head studies would be particularly informative. To date studies using the Zung (against the MINI)[80] and CES-D (against DSMIIIR)[81] have shown modest success. Of all methods, the most commonly studied tool has been the HADS which was introduced in 1983 meta-analysis of the HADS scale studies in cancer has been conducted and is useful to illustrate the *potential* advantages of using a scale over and above the performance of clinicians when unassisted (figure 4). From nine diagnostic validity studies using the HADS, sensitivity was 0.52 and specificity 0.89 (prevalence 0.22). Comparing this level of performance against the unassisted clinician data from Fallowfield et al (2001), corrected for prevalence, shows a significant difference (figure 4). Whereas clinicians were able to detect 6.3 out of 22 true cases, HADS-assisted clinicians diagnosed 11.4, a gain of 23%. Similarly, when unassisted clinicians correctly ruled out 32.3 out of 78 non-depressed cases compared with 69.2 using the HADS, a gain of 47.3%. Thus, assuming the HADS (or similar scales) came to be used routinely by cancer clinicians, there is the potential to improve detection. However, it is not necessarily the case that quality of care would improve. For this, implementation studies are needed (see below).
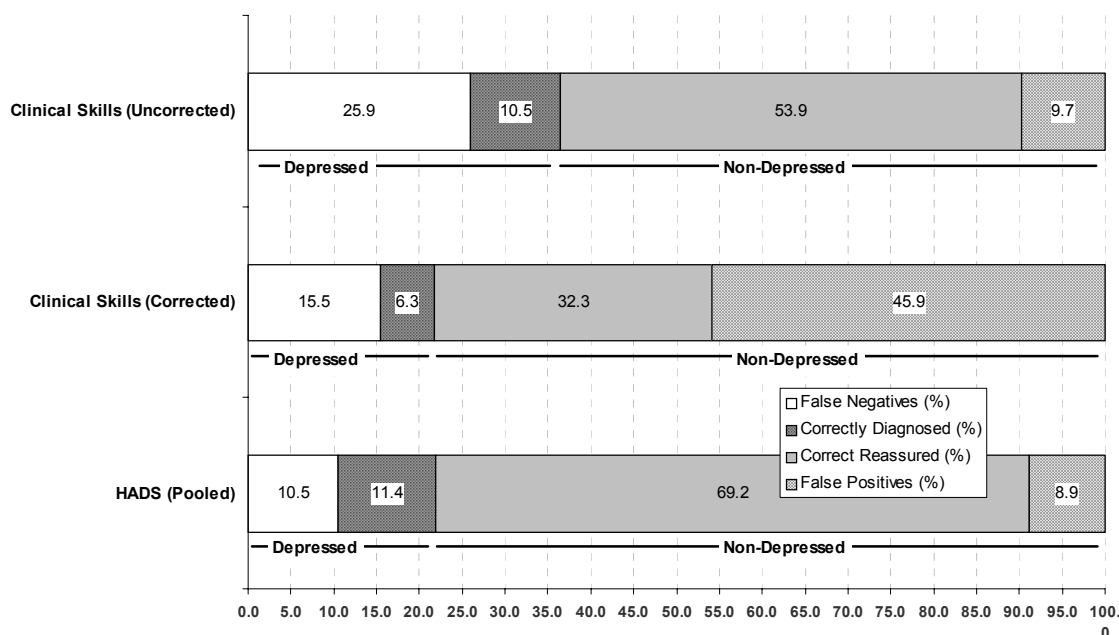

figure 4.

Regarding head-to-head comparisons of screening methods, Le Fevre administered the HADS and GHQ-12 to 79 hospice inpatients against a Revised Clinical Interview Schedule. In this study the HADS performed better than the GHQ-12 for identifying depression.[82] In a small study Katz et al (2007) diagnosed Major and Minor Depression according to Research Diagnostic Criteria using the Schedule for Affective Disorders and Schizophrenia (SADS). [83] All methods were found to be equally accurate including the BDI, the HADS and the CES-D scale. In a larger study

from Singer et al (2008) involving 250 individuals diagnosed according to DSMIV. Again the HADS, the subscale 'Emotional Functioning' of the European Organization for Research and Treatment of Cancer Quality of Life Core Questionnaire (EORTC QLQ-C30) and a single-item visual analogues scale (VAS) were all highly accurate. The best levels of sensitivity and specificity were associated with the total score of the HADS. Baker Glenn and colleagues (2008) recently examined several screening tools in a sample of 217 chemotherapy attendees who had early cancer.[84] The prevalence of major and minor depressions was 11.1% and 6.9% respectively. Accuracy of the PHQ2 question 1 (interest), PHQ2 question 2 (depression), PHQ Q1 OR Q2, PHQ9, HADS-T, HADS-D are show in table 1. The PHQ2 emerged as the optimal strategy for detection of DSMIV defined major or minor depressions.

7.3 Acceptability of Existing Approaches

Given that existing scales can be used, is there any merit in formulating new methods? Recent screening research has moved away from accuracy alone towards accuracy and acceptability. Some groups have begun to develop economic models of screening success. An ideal scale is very brief, highly acceptable, highly accurate, easily accessible and highly used. At the same time it must be long enough to measure severity (unless another scale is used for this purpose) and measure change. Currently, it is unclear exactly how brief a scale can become before value is lost. Short versions of every major scale have been released comprising 10 items or less. A good example is the 10-item Edinburgh Depression Scale recently refined into an 8-item version.[85] Of course, eight items might not be short enough and in the extreme example there are single item scales which can be applied by pen and paper, verbally "are you depressed?" or in visual analogue form. This process has been assisted by work which began in the 1970s developing and testing visual-analogue methods of rating mood.[86] Since then many other groups have also noted the value of similar methods. [87] [88] [89] The accuracy of these "ultra-short" methods has been summarized. Generally such methods have high rule-out (reassurance) accuracy but limited rule-in (case-finding) ability.[90]

8. Improving Diagnoses of Depression i. Communication Tips

It is generally important to respond appropriately to the patient's verbal and non-verbal cues, mainly by acknowledging/clarifying what the patient has said and addressing the issues raised. Questions with a direct psychological focus can also help to elicit information from the patient (open questions used together with factual questioning. Razavi and colleagues (2002) found that promoting use of words that have emotional content facilitated patients' expressions of emotions. Use of emotional words demonstrates empathy, and leads to greater patient disclosure. When physicians recognize their patients' emotional distress, patients give information about psychosocial than patients who do not have their distress acknowledged.[91]

9. Recommendations for the Diagnosis of Depression in Cancer Settings

Depression (and anxiety and broadly defined distress) is an important complication of cancer that deserves clinicians attention. Generally clinicians using their own approach and clinical skills are not very successful in identifying and managing depression. This might be particularly the case for hospital specialists who are not mental health trained. That said, with effort depression can be managed clinically. Really two or three short questions can open the door to further questions when needed.

For those that wish to go further, depression severity tools have improved over the last 20 years mostly in terms of acceptability rather than accuracy. Tools can be administered in the waiting room or via computer increasing the uptake where routine application is planned. In addition algorithm approaches are possible in which screening methods begin simply and become more complex (and accurate) only if needed. In fact the two can be combined

using computer adaptive testing, essentially an item bank of questions and an evidence based decisional algorithm that adjusts the next question depending on the answer received.[92][93][94] Despite these innovations there remains a gap between those identified as distressed and currently untreated (that is those with unmet need) and those who want help for these concerns. In a study from New South Wales, Australia, amongst a total of 888 consecutive patients the mean number of unmet needs reported by cancer patients was 10.9. However, lung cancer patients reported a higher mean number of unmet psychological needs (7.6 versus 5.0) and physical and daily living unmet needs (2.8 versus 1.4), compared to the other cancer patients.[95]

Depression remains an under-treated (but sometimes overtreated) condition that requires effort from all clinicians to manage successful in cancer settings.

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