



**NATIONAL BREAST  
CANCER CENTRE**

INCORPORATING THE  
OVARIAN CANCER PROGRAM

The identification of  
psychological distress in  
women with breast cancer

**The identification of  
psychological distress in  
women with breast cancer**

April 2004

Prepared by

A Love

School of Psychological Science,  
La Trobe University and  
Centre for Palliative Care,  
University of Melbourne

For the National Breast Cancer Centre

This report on *The identification of psychological distress in women with breast cancer* was produced by the National Breast Cancer Centre

92 Parramatta Road Camperdown, Sydney, Australia

Locked Bag 16 Camperdown NSW 1450

Telephone +61 2 9036 3030

Facsimile +61 2 9036 3077

Website [www.nbcc.org.au](http://www.nbcc.org.au)

© National Breast Cancer Centre 2004

ISBN Print: 1 74127 107 8 Online 1 74127 001 4

CIP 616.99449

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced by any process without prior written permission from the National Breast Cancer Centre. Requests and enquiries concerning reproduction and rights should be addressed to the Copyright Office, National Breast Cancer Centre, Locked Bag 16 Camperdown NSW 1450 Australia. Website [www.nbcc.org.au](http://www.nbcc.org.au) Email [director@nbcc.org.au](mailto:director@nbcc.org.au)

The National Breast Cancer Centre is funded by the Australian Government Department of Health and Ageing.

# TABLE OF CONTENTS

<b>LIST OF TABLES</b>	<b>3</b>
<b>EXECUTIVE SUMMARY</b>	<b>4</b>
<b>1 INTRODUCTION</b>	<b>8</b>
<b>2 BREAST CANCER AND PSYCHOLOGICAL DISTRESS</b>	<b>9</b>
2.1 Distinguishing between upset and clinically significant psychological problems	9
2.2 Issues related to diagnosing clinically significant psychological problems	10
2.3 Prevalence of significantly disordered mood and anxiety in women with breast cancer	14
2.4 Who is most at risk of poor psychosocial outcome?	15
2.5 The clinical relevance of psychological morbidity in women with breast cancer	16
<b>3 IDENTIFYING PSYCHOLOGICAL DISTRESS IN WOMEN WITH CANCER</b>	<b>19</b>
3.1 The recognition of mental health concerns	19
3.2 Identifying anxiety and depression	20
3.3 Screening tools in psycho-oncology	21
<b>4 METHOD OF IDENTIFICATION AND EVALUATION OF SCREENING INSTRUMENTS</b>	<b>22</b>
4.1 Identification of screening instruments	22
4.2 Evaluation of identified screening instruments	23
<b>5 REVIEW OF PSYCHOLOGICAL SCREENING INSTRUMENTS</b>	<b>25</b>
5.1 Psychological distress measures used in breast cancer research	25
5.1.1 General measures of psychological distress	25
5.1.2 Cancer specific measures of psychological distress	26
5.2 Appraisal of measures validated in populations with breast cancer	38

5.2.1	Affect Balance Scale (ABS)	38
5.2.2	Beck Depression Inventory (BDI)	39
5.2.3	Beck Depression Inventory – Short Form (BDI-SF)	40
5.2.4	Beck Depression Inventory II (BDI-II)	41
5.2.5	Beck Depression Inventory – Primary Care (BDI-PC)	42
5.2.6	Brief Symptom Inventory (BSI-53)	42
5.2.7	Brief Symptom Inventory – 18 (BSI-18)	43
5.2.8	Centre for Epidemiological Studies Depression Scale (CES-D)	44
5.2.9	General Health Questionnaire (GHQ-60/28)	44
5.2.10	General Health Questionnaire (GHQ-30/12)	46
5.2.11	Hamilton Rating Scale for Depression (HRSD)	47
5.2.12	Hospital Anxiety and Depression Scale (HADS)	48
5.2.13	Health Survey Short Form (SF-36)	51
5.2.14	Health Survey Short Form – 12 (SF-12)	52
5.2.15	Health Survey Short Form – 8 (SF-8)	52
5.2.16	Mental Health Inventory (MHI-5)	53
5.2.17	Montgomery-Åsberg Depression Rating Scale (MADRS)	54
5.2.18	Psychological Adjustment to Illness Scale (PAIS)	55
5.2.19	Rotterdam Symptom Checklist (RSCL)	56
5.2.20	State-Trait Anxiety Inventory (STAI)	58
<b>6</b>	<b>CONCLUSIONS</b>	<b>59</b>
6.1	Risk factors associated with psychological distress	59
6.2	Early identification of psychological distress	60
6.3	Using screening tools to identify psychological distress	60

6.4	Choosing a Screening Tool	62
6.4.1	Screening tools not considered suitable for these applications	63
6.4.2	Screening tools considered suitable for specific applications	64
6.4.3	Screening tools considered suitable for general applications	65
<b>7</b>	<b>REFERENCE</b>	<b>71</b>

## **LIST OF TABLES**

Table 1	DSM–IV Criteria for Mood and Anxiety Disorders	11
Table 2	Psychosocial factors associated with adverse psychological outcome in women with cancer	18
Table 3	Calculating key indices used for assessing screening tests	24
Table 4	Properties of measures of psychological distress used in breast cancer research	26
Table 5	Choosing a suitable screening tool	62

## **APPENDIX**

Appendix A	Measures identified in the literature search and considered for the review	66
------------	--	----

## EXECUTIVE SUMMARY

Women with breast cancer live with the burden of the disease, its treatment and the psychosocial consequences of illness, often contributing to the experience of psychological distress. In turn, distress can adversely affect women's health, treatment, wellbeing and social functioning. Yet, the psychological reactions of women with breast cancer have only recently received the attention they deserve. Much remains to be learned about the phenomena and myths about these experiences persist. For example, they are often discounted as an inevitable consequence of the illness. This report considers a number of issues in relation to psychological distress experienced by women with breast cancer and its identification, and a series of conclusions is presented.

**Psychological distress is a common but not ubiquitous experience of women with breast cancer.**

The report begins with a review of the literature about distress in women with breast cancer, which reveals that the myth of inevitability cannot be sustained. Most women experience transient periods of sadness and loss during their illness and treatment. Others experience significant distress that may be severe enough to present as anxiety or depressive disorders. Although prevalence estimates of psychiatric morbidity in women with breast cancer vary according to the diagnostic criteria used and the personal and treatment characteristics of the population studied, rates are invariably high. For example, in a recent Australian study 45% of women with early-stage breast cancer reported clinically significant levels of depression or anxiety <sup>1</sup>.

**There is evidence that psychological distress is often unrecognised and under-reported in outpatient cancer care.**

There is evidence that psychological distress could be better managed. Clinicians working in various treatment settings experience difficulties identifying depression or anxiety. Oncology staff members are probably better at recognising anxiety than depression in their patients, although they experience difficulty judging just how debilitating anxiety is. Frequently, depression is poorly recognised. Evidence indicates that only a minority of oncology patients with depressive illnesses are identified by staff and referred appropriately <sup>2</sup> although rates improve with specific training <sup>3</sup>.

**Early identification and management of psychological distress is central to optimal psychosocial care.**

The *Psychosocial Clinical Practice Guidelines: information, support and counselling for women with breast cancer*<sup>4</sup>, provides evidence-based recommendations about offering information, support and counselling to women with breast cancer. The *Psychosocial Guidelines* authors note that early identification and management of psychological distress in women with breast cancer is central to the provision of optimal psychosocial care. The *Psychosocial Guidelines* identifies risk factors predictive of adverse psychological outcomes and provide excellent suggestions for intervention. However, the authors were unable to provide specific recommendations about screening for depression and anxiety and suggested further investigation in this question. This report follows up on the suggestion and examines research about screening for psychological morbidity and distress in cancer patients.

**The identification of significant distress in women with breast cancer poses particular challenges for clinicians.**

The report considers the problems associated with detecting psychological distress in this population. The task of adequately defining psychiatric disorders is outlined. The assumptions of essential differences and discontinuities between discrete syndromes made by taxonomists are contrasted with the assumptions of continuity and severity underlying the notion of distress. Diagnostic criteria, as represented in DSM-IV, and the decision making process often adopted from this frame of reference are reviewed. The importance of employing structured psychiatric interviews to derive reliable and operationally valid diagnoses is stressed<sup>5</sup>.

**Risk factors for poor psychosocial outcome have been identified and these must be considered when assessing women with breast cancer who are likely to experience distress.**

Personal factors such as a history of psychological problems, psychosocial factors such as high trait anxiety or prior exposure to trauma, avoidant coping styles and being younger at the time of diagnosis increase the risk of developing distress. Social-environmental factors, including perceived or real lack of social support, having dependents that are younger than 21, poorer education and more premorbid stressful life events have all been implicated in the development of distress. Recurrence and extent of disease, severity and control of the symptoms, different treatments and their different phases are also related to the experience of psychological distress.



**An extensive range of screening tools for psychological distress has been used in psycho-oncology and the evidence to support their use is mixed.**

A review of self-report inventories used to assess levels of psychological distress in women diagnosed with and treated for breast cancer revealed a wide range of tools has been used. Some of these have been extensively investigated while others have appeared only once or twice in research reports. A set of methodological criteria for evaluating the utility of screening instruments, specifically relating to questions of validity, are identified and explored. In particular, the importance of concurrent criterion validity, comparing the diagnostic accuracy of screening tools to the gold standard set by psychiatric diagnoses derived from structured interviews, is stressed. Statistical indices for comparing and contrasting the efficiency of screening tools are outlined in this report.

**Twenty screening tools used in previous studies of distress in women with breast cancer are systematically evaluated and compared for relative strengths and weaknesses. Their comparative characteristics are presented in table form and are extensively discussed in the text.**

The report reviews the literature validating screening tools against diagnostic interviews with cancer patients; in particular, it considers studies where they have been used to investigate the psychological reactions of women with breast cancer. Reasons for the variations in reported rates of disorder are identified. These include the differences between various taxonomic systems that establish specific criteria for diagnoses. Comparing different diagnostic criteria can produce very different estimates of prevalence rates and subsequent accuracy of the screening tool. Variation also results from the different instructions, varied item content and divergent definitions used to conceptualise disorders in the different measures. Differences also reflect the specific characteristics of the patient groups studied. Stage of disease, time since diagnosis and type of treatment received all influence the base rates of depression and anxiety in women with breast cancer <sup>6</sup>.

**Selecting a self-report tool for screening purposes depends on the specific nature of the task to be accomplished. All of the screening tools reviewed have benefits and drawbacks and no one screening tool will be universally applicable.**

Several measures were identified as potentially suitable tools for assessing distress, including anxiety and depression, in women with breast cancer. Relatively short but reliable and valid tools for this task include the BSI-18 and the GHQ-12. Neither, however, are freely available, which might be a factor determining their suitability for selection by small, under-resourced clinical settings. Other suitable candidates are more freely available but are often narrower in their scope. For example, the BDI-SF is a freely available, valid scale for assessing severity of depression but does not assess anxiety. It could be combined with another freely available measure, such as the anxiety subscale of

<sup>6</sup> The identification of psychological distress in women with breast cancer

the HADS. The latter is established as a reliable measure of anxiety but the depression subscale is not acceptable. Other, longer scales are better suited to research applications. The BSI-53 and the GHQ-30 are both well accepted, valid instruments suitable for this role.

Self-report measures should form part of a comprehensive screening process. None is able to provide a definitive diagnosis of depression or anxiety. Scores indicate the overall severity and range of symptoms experienced by the patient. Individuals with scores above pre-set cut-offs are identified as possible cases. Mental health specialists can then interview to verify diagnoses and formulate treatment recommendations. The first stage need not be demanding; brief screening tools that are suitable for this task are summarised. However, the diagnostic accuracy of self-report questionnaires is dependent upon specific characteristics, such as patient age or phase of illness, of the population in question. Screening measures thus require 're-calibration' to create local norms. Screening as part of routine clinical assessment and consultation can assure that patients in distress or at risk are both identified and referred appropriately <sup>7</sup>.

In conclusion, women with breast cancer, at every stage of the disease and with every treatment undertaken, encounter distress-inducing experiences. Sometimes, distress levels can reach a point where they interfere with ability to cope with the cancer, its symptoms and its treatment, to the detriment of patients' quality of life. Unfortunately, barriers to communicating distress often prevent its detection in clinical settings. Effective interventions are available, so to ensure that best possible care is provided, these barriers have to be overcome; high levels of distress, presenting as depression and anxiety disorders, must be identified. Screening, using self-report questionnaires, can contribute to the timely identification of those patients most likely to meet DSM-IV diagnostic criteria for these syndromes. While there is no simple answer to the question, "What is the best screening tool?" a range of likely candidates has been identified. Careful consideration of the purposes for screening and its role in a comprehensive intervention plan will help select the most appropriate screening tool for the task at hand and ensure that management of distress is an integral part of patients' total care.

# I INTRODUCTION

It is estimated that breast cancer will affect one in eleven women during their lifetime and is the leading cause of cancer-related death in Australian women <sup>8</sup>. While the incidence of breast cancer has risen in recent decades, so too has the chances of survival of those diagnosed with the disease. Increasing numbers of women are living with the consequences of breast cancer, which include their psychological reactions to the disease, its treatment and its effect diverse aspects of their lives. The cost of unrecognised psychological distress is very high for all those concerned. The National Comprehensive Cancer Network (NCCN, a coalition of 18 leading Cancer Centres in the USA) issued *Practice Guidelines in Oncology: Distress Management* <sup>9</sup>. The document lays out the theoretical approach adopted. It recommends the use of the term *distress* to help overcome some of the stigma associated with the use of psychiatric labels that can create barriers to communication between patients and their carers. Further, it assumes a continuum of distress from normal fear, worry and sadness, to more serious levels of disabling distress, identified as DSM-IV major depression or anxiety disorder. Finally, it asserts that the overriding goal is to ensure, “no patient with distress goes unrecognised and untreated” (NCCN, *Practice Guidelines in Oncology: Distress Management*, page ms-2).

This report reflects that basic message. It reviews key issues surrounding distress and its assessment, as it relates to women with breast cancer. First, the concept of psychological distress in women with breast cancer is examined. Psychiatric diagnostic criteria for depression and anxiety are outlined and difficulties in applying these criteria in medical settings are considered. Prevalence of these disorders and risk factors associated with their presentation are described, and the importance of recognising psychological distress is considered. Next, the problem of identifying psychological distress is addressed and the value of screening for depression and anxiety is underscored. Screening instruments used to identify these problems in women with breast cancer are reviewed. After appraising the main candidates for appropriate screening tools with this population, concluding comments are made in relation to practice and research.

## **Aim**

The aim of this report is to review the self-report screening tools for psychological distress that can be used in women with breast cancer.

## **2 BREAST CANCER AND PSYCHOLOGICAL DISTRESS**

Living with the diagnosis and treatment of any chronic medical condition can be the source of psychological and social stresses. Women with breast cancer are subjected to many such effects. They must deal with, among others, the shock of diagnosis and its implications, the side effects of treatment, alterations to bodily appearance, changes in social roles and functioning, and, for some women, coming to terms with declining health, and death.

Under these circumstances, it is not surprising that many women show signs of mild or transitory upset, including emotions of sadness, anxiety, irritability, anger, fear, grief, as well as behaviours such as withdrawing from social activities, disruptions to their relationships with family and with friends <sup>5</sup>. For most women, these reactions represent temporary adaptation problems and their levels of psychological upset wane over time. For many, it is not simply a matter of returning to an absence of distress but of undergoing healthy personal growth <sup>10</sup>. For others, the reactions might persist for longer periods or be severe enough to compromise further their health and well-being.

### **2.1 Distinguishing between upset and clinically significant psychological problems**

As periods of low mood, apprehension and worry are very common, there is a tendency to view cancer patients' emotional reaction as a natural response to very difficult circumstances, sometimes referred to as "appropriate sadness" <sup>11,12</sup>. In many cases, the reaction is transient. However, when depressed mood and anxious feelings are persistent or severe enough to impact on the individual's life and functioning, they become significant problems that require further attention by treating clinicians <sup>6</sup>.

When people who experience these feelings also show a cluster of other signs or symptoms (which may include loss of interest in life, guilt, poor energy, the bodily signs of tension, panic attacks, worry that is excessive or unreasonable), then they may meet diagnostic criteria for mental disorders, such as depressive or anxiety disorders <sup>5</sup>. Collectively, these problems will be referred to in this report as *distress*. Interventions are available to assist people experiencing distress associated with breast cancer <sup>13-17</sup> but in order to intervene, clinicians must first identify the presence of significant distress levels.

Numerous systems set out diagnostic criteria for the identification of mental disorders. The *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* <sup>18</sup> and the *International*

*Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10)* are recognised as the leading diagnostic classification systems and are extensively used in research and treatment settings. They set out the number, type, and duration of symptoms that are required to make a diagnosis of conditions such as anxiety and depressive disorders. Key criteria for the anxiety or depressive disorders according to the DSM-IV are listed in table 1. While these criteria are still the subject of intense research and thus revision, they are accepted as the current standard for diagnosis and will be referred to throughout this report.

## **2.2 Issues related to diagnosing clinically significant psychological problems**

There is wide debate regarding the applicability of the criteria to people with cancer or other life-threatening diseases<sup>19</sup>. Table 1 shows that many symptoms of anxiety and depression are somatic concerns (e.g., fatigue, appetite changes, nausea or abdominal distress), some of which may be associated with the disease process or with treatment. If all patients in a given group are experiencing appetite or weight loss, then endorsing this item on a symptom checklist could lead to the over-diagnosis of distress. In these cases, diagnosis of depression or anxiety disorders must be made independently of the somatic items. Therefore, the cognitive and mood-related items, such as marked impairment in social functioning, hopelessness, apathy and anhedonia, are considered more reliable indicators of significant psychological distress in cancer patients. These symptoms are also more common in so-called minor depression<sup>20</sup>, a point discussed further, below.

There are additional difficulties associated with the diagnostic criteria for anxiety and depressive disorders<sup>21</sup>. The first is the overlap in diagnostic criteria, for instance, between generalised anxiety disorder and major depressive episode (see table 1). The appropriate treatment of each condition is different; thus, adequate management depends on the accuracy of differential diagnosis. Another concern is the considerable co-morbidity of anxiety and depression. Patients with mixed anxiety and depression can be difficult to identify and often have poorer outcomes than those with only one diagnosis.

A third point is that it can be difficult to determine when levels of normal distress merge into clinically relevant conditions. The approach to distinguishing diagnostic categories adopted by the DSM-IV – and rejected by other theorists – is often referred to as the *continuum assumption*, because differences between cases are treated largely as quantitative, rather than qualitative, distinctions<sup>20,22</sup>. Hence, DSM-IV recognises Major Depression, Adjustment Disorders, and Minor Disorders (as research criteria). A continuum of distress is an explicit assumption of the National Comprehensive Cancer Network, in its standards of Care for Management of Distress in Cancer Patients guidelines,

it was noted earlier. This approach may create arbitrary distinctions between similar presentations<sup>21</sup>. The position adopted here is that any indication of distress should be taken seriously and treated appropriately, whatever the formal diagnosis of the person in distress.

Finally, expertise in mental health issues is required to apply diagnostic criteria and make a valid diagnosis. A clinical interview, keyed to diagnostic criteria and conducted by a trained mental health professional, is the most reliable way to diagnose clinically significant psychological problems that correspond to operationally defined syndromes<sup>5</sup>. Other conditions need to be ruled out, as it can be misleading to confirm a particular diagnosis based on presenting symptoms without disconfirming competing diagnoses. Hence, while it is important to be sensitive to and able to assist distressed patients, it is also important to consult specialists in the field and to refer patients, when necessary.

## **Table I DSM-IV Criteria for Mood and Anxiety Disorders**

### **Criteria for Major Depressive Episode**

- A Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.
1. Depressed mood most of the day, nearly every day, as indicated by either subjective report, (e.g., feels sad or empty) or observation made by others (e.g., appears tearful). Note: In children and adolescents, can be irritable mood.
  2. Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observations made by others).
  3. Significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day.
  4. Insomnia or hypersomnia nearly every day.
  5. Psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down).
  6. Fatigue or loss of energy nearly every day.
  7. Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick).
  8. Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others).
  9. Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or specific plan for committing suicide.

### **Table I (continued)**

- B The symptoms do not meet criteria for a Mixed Episode.
- C The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- D The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hypothyroidism).
- E The symptoms are not better accounted for by Bereavement.

### **Criteria for Dysthymic Disorder**

- A Depressed mood for most of the day, for more days than not, as indicated either by subjective account or observation by others, for at least 2 years.
- B Presence, while depressed of two (or more) of the following:
  1. Poor appetite or overeating.
  2. Insomnia or hypersomnia.
  3. Low energy or fatigue.
  4. Low self-esteem.
  5. Poor concentration or difficulty making decisions.
  6. Feelings of hopelessness.
- C During the 2-year period of the disturbance, the person has never been without the symptoms in criteria A and B for more than 2 months at a time.
- D No Major Depressive Episode has been present during the first 2 years of the disturbance.
- E There has never been a Manic Episode, a Mixed Episode, or a Hypomanic Episode and criteria have never been met for Cyclothymic Disorder.
- F The disturbance does not occur exclusively during the course of a chronic Psychotic Disorder, such as Schizophrenia, or Delusional Disorder.
- G The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hypothyroidism).
- H The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

### **Criteria for Adjustment Disorders**

- I The development of emotional or behavioural symptoms in response to an identifiable stressor(s) occurring within 3 months of the onset of the stressor(s).

### **Table I (continued)**

- J These symptoms or behaviours are clinically significant as evidenced by either of the following:
  1. Marked distress that is in excess of what would be expected from exposure to the stressor.
  2. Significant impairment in social or occupational (academic) functioning.
- K The stress-related disturbance does not meet the criteria for another specific Axis I disorder and is not merely an exacerbation of a pre-existing Axis I or Axis II disorder.
- L The symptoms do not represent Bereavement.
- M Once the stressor (or its consequences) has terminated, the symptoms do not persist for more than an additional 6 months.

Specify if:

Acute: if the disturbance lasts less than 6 months.

Chronic: if it lasts for 6 months or longer.

### **Diagnostic Decision Tree for Depressive Disorders in DSM-IV**

Depression is a challenging phenomenon, because it can occur on a spectrum from sadness to major psychiatric disorder. Mood change in response to a life-threatening illness can also be considered a normal reaction to an abnormal event. Thus, the definition of depression used to categorise patients' responses will affect the estimate of prevalence. In psychiatry, the following algorithm is usually applied to determine the appropriate DSM-IV diagnosis for a depressive episode:

Does the distress meet the criteria for one or more Major Depressive Episodes?

- If *yes*, then the diagnosis is *Major Depressive Disorder*.

Does the distress not meet criteria for Major Depressive Episode?

- If *yes*, and is greater than two years mood duration, then the diagnosis is *Dysthymic Disorder*.

Is it less than two years mood duration?

- If *yes*, then the diagnosis is *Depressive Disorder not otherwise specified*.

Consider the research criteria:

*Minor Depressive Disorder*.

Is the distress a response to an identifiable stressor?

- If *yes*, then the diagnosis is *Adjustment Disorder with Depressed mood, or Mixed Anxious and Depressed mood*.

N.B., Both the criteria and the diagnostic decision tree are adapted from: American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders: DSM-IV*, 1994.<sup>18</sup>



## 2.3 Prevalence of significantly disordered mood and anxiety in women with breast cancer

Rates of serious psychological problems in women with breast cancer are high and widely observed to exceed the prevalence of both anxiety and depressive disorders in the general population. Prevalence estimates of clinically significant, non-transient anxiety and depression in populations with breast cancer vary according to the age and other characteristics of the women, stage of disease or treatment and the criteria used to measure depression and anxiety <sup>6, 23, 24</sup>. This is particularly important to remember, as some groups, such as terminally ill patients, are often excluded from studies, adding to the under-detection rate <sup>25</sup>. Estimates are also affected by factors such as the method of assessment employed and the diagnostic criteria used <sup>25</sup>. That is why it is essential to employ standard criteria, such as DSM-IV, to ensure comparability between studies.

Even when they explicitly excluded adjustment disorders, Ibbotson *et al.* <sup>26</sup> found that 17% of 513 cancer patients experienced either Generalised Anxiety Disorder or Major Depressive Disorder. Similarly, a recent Australian study of 303 women with early breast cancer <sup>1</sup>, found that 11.9% of women met DSM-IV diagnostic criteria for major depressive and dysthymic disorders. This figure is over twice the National point prevalence of depressive disorders in the female population of 5.4%. Kissane and colleagues <sup>1</sup>, also found anxiety disorders were as common (11.6%) as major depressive and dysthymic disorders in women with early breast cancer. This finding exceeds the point prevalence of anxiety disorders in the general Australian female community, which is 10.1%. All diagnoses were established using the Monash Interview for Liaison Psychiatry (MILP), a structured interview schedule developed specifically for use with medically ill patients <sup>27</sup>.

Of additional concern is the finding that a further 28.7% of that population with early breast cancer were had adjustment disorder with depressed or anxious mood <sup>1</sup>. These conditions present as clinically significant symptoms of depression or anxiety in response to identifiable stressors, which result in marked impairment in social or occupational functioning (see table 1). They are particularly problematic, as they are the disorders most likely to go unrecognised and untreated in this patients group <sup>28</sup>. Inclusion of these categories brings the prevalence of mental disorders in this large sample of women with early breast cancer to 42%. The figures are similar to an early study, where 47% of a mixed patient sample met criteria for a psychiatric disorder, including adjustment disorders <sup>29</sup>.

In case the designation *Adjustment disorder* reinforces the impression that these problems are negligible or simply a minor reaction that the patient has to 'get over', it is worth considering the following case study of a women with adjustment disorder with depressed mood <sup>30</sup>. The patient was:

*A 35-year-old married woman, mother of three children, was desperate when she learned she had cancer and needed a mastectomy followed by chemotherapy and radiation. She was convinced that she would not recover, that her body would be forever distorted and ugly, that her husband would no longer find her attractive, and that her children would be ashamed of her baldness and the fact that she had cancer. She wondered if anyone would ever want to touch her again. Because her mother and sister had also experienced breast cancer, the patient felt she was fated to an empty future (p. 516).*

## **2.4 Who is most at risk of poor psychosocial outcome?**

The psychological and social stressors women encounter during the phases of their illness and treatment, such as struggling to come to terms with the meaning of the initial diagnosis, vary in type as well as magnitude. However, the psychological consequences of these challenges are difficult to predict from an objective appraisal of them. Sometimes, seemingly major threats may be borne with equanimity and what appear to be minor hassles might precipitate major crises. Stress and coping theory recognises that no two women will appraise and respond to a health concern in precisely the same way, and so the psychosocial consequences for them will be different <sup>31</sup>. Indeed, the same woman might respond to the same stressor in different ways on different occasions. How people attempt to cope with an apparent threat to their well-being will help determine how they adapt to that challenge. Hence, a complex web of personal and social resources determines the unique impact of any event <sup>10</sup>.

Major stressors are thus predictable risk factors for psychological distress in many women with breast cancer. Surgical intervention is one example. Fallowfield et al. reported that almost one third of their sample experienced depression and a similar number experienced anxiety, following surgery <sup>32</sup>. One fifth of the sample continued to be depressed 12 months later. Chemotherapy is also a major stressor; several studies have reported that between one quarter and one third of women undergoing chemotherapy experienced distress <sup>33-35</sup>.

Personal and social resources – or the lack of them – can represent a risk factor for the development of distress. The definition of “risk factors” is not without some controversy. The term may mean that a particular factor causes the illness, or merely that it is associated with it <sup>36</sup>. Determining which of these relationships is appropriate requires sophisticated design and methodology considerations, including the use of structural equations models <sup>36</sup>. However, this controversy need not interfere with the conclusion that the presence of identified risk factors increases the probability of poorer outcomes in attempts to cope with the psychosocial stressors of breast cancer.

Several risk factors for poor psychological outcome in women with breast cancer have been identified. Turner *et al.* <sup>6</sup> provide an extensive review of the supporting evidence in their report about the psychosocial impact of breast cancer. New factors are steadily being recognised and added to this list. Personal, social and disease-related factors, shown to pose a particular risk to women with breast cancer, are presented in table 2 and are summarised below.

Previous psychiatric history is often associated with the diagnosis of depressive or anxiety disorder in women with breast cancer. Breast cancer and mood disorders are two prevalent life-time health concerns of women, so it is therefore reasonable to expect that many women being treated for cancer have experienced psychological problems in the past. For instance, Kissane and colleagues <sup>1</sup> found that 31.5% of the women with early breast cancer who received a diagnosis of a depressive condition had a prior history of depression.

Most of the other personal and social-environmental risk factors for psychological problems following cancer are consistent with the risk factors associated with psychological morbidity at other times of a woman's life. For example, it has been established that a history of previous trauma, such as sexual or physical assault, is associated with psychological distress in women with breast cancer, as it is with adjustment to other stressful events <sup>37</sup>. Factors such as lower level of education lower income levels, and not being in a current relationship are risk factors for distress in the non-medically ill, so it is understandable that they also increase vulnerability among women with breast cancer. However, certain times in the illness and treatment trajectory pose a particular risk to the psychological well-being of women. Other factors include the time of diagnosis or the diagnosis of a recurrence <sup>38</sup>, the commencement of new treatment regimes and around the time of medical check-ups <sup>38,39</sup>, and living with advanced cancer <sup>23</sup>. All are associated with high incidence of significant psychological problems in women. Poor functional health, poor pain control and arm swelling are other health factors that are linked consistently to poor psychological outcome <sup>40,41</sup>.

## **2.5 The clinical relevance of psychological morbidity in women with breast cancer.**

The *Psychosocial Guidelines* note that the recognition of psychological distress in women with cancer is a critical aspect of patient care. Unrecognised, persistent, and untreated psychological distress adversely affects many areas of patient functioning. For example, it is associated with impairment in specific quality of life domains in advanced disease patients <sup>42</sup>. Depression and anxiety can complicate problems of ensuring adequate nutrition, as anorexia and weight loss can be symptoms of depression as well as somatic symptoms associated with the cancer <sup>43</sup>. In addition, distress affects response to chemotherapy <sup>44</sup>. It also affects the acceptance of chemotherapy; in one study,

approximately 50% of a depressed group of breast cancer patients accepted and received adjuvant chemotherapy compared with 92% of the control group <sup>45</sup>. Depression also affects compliance with treatment; a recent meta-analysis demonstrated that depression is a risk factor for non-adherence to recommended medical treatment <sup>46</sup>. Depression also interferes with the process of making decisions that affect chances of survival <sup>47</sup>. Finally, psychological distress – at least when measured after surgery – predicts long-term survival <sup>48,49</sup>.

Detecting distress can also lead to other improvement in treatment. Changes in mood, anxiety and social or role functioning can result from responses to treatment or to the organic function of the disease <sup>23</sup>. By monitoring the women's psychological functioning, clinicians can gain additional insight into a woman's health and information needs. For example, there is a strong association between poor pain control and depressed mood and between arm swelling and distress <sup>41</sup>. In addition, distress might act as a barometer of the doctor-client relationship, as clinicians who disclose facts concerning diagnosis and treatment options while offering reassurance and empathy can help long-term adjustment by reducing anxiety and depression <sup>32</sup>.

Psychological distress can arise from the patients' response to the side effects of treatment. Loss of hair, nausea, changes to body image, as well as the fatigue and discomfort caused by treatment can all lead to emotional distress in patients <sup>50</sup>. The extent to which these symptoms contribute to major distress is dependent, in part, on severity and functional limitations imposed, but there are wide variations between individuals. Reactions to treatment side effects can be monitored, as they might indicate the need for better preparation, more information about treatment and the provision of psychosocial support <sup>51</sup>.

Changes in the patients' social lives can also be the source of significant psychosocial distress. Level of perceived social support has been linked to adjustment in women with breast cancer <sup>52</sup>. Satisfaction with the supportive relationship shared with a partner has also been associated with psychological well-being in women with breast cancer <sup>53</sup>. The study also demonstrated that a supportive relationship with another person did not compensate for the unsupportive partner relationship. In addition, the depression of a family member with breast cancer can have significant negative effects on the adjustment of the family, experienced as higher frequency of illness-related demands <sup>54,55</sup>.

Conditions such as anxiety and depression are responsive to a range of treatments. Psychological, pharmacological and supportive interventions can reduce the psychological symptoms and improve the quality of life in cancer patients whose psychological difficulties were recognised <sup>16</sup>. Monitoring and attending to the psychological needs of the physically ill may thus reduce morbidity, improve functioning, and reduce health-care costs <sup>56</sup>. This brief review has demonstrated that psychological

distress is deserving of intervention. It is not, as is often claimed, something that has to be endured as an inevitable consequence of chronic illness. The added benefits of intervention, enumerated above, underscore the importance of being sensitive to, and responding appropriately towards the patterns of psychological distress of women with breast cancer.

**Table 2 Psychosocial factors associated with adverse psychological outcome in women with cancer.**

### **Personal Factors**

History of psychological problems.

Personality characteristics, e.g., high trait anxiety.

Younger age.

Avoidant coping style, e.g., reluctance to discuss emotional issues, etc.

Communication problems.

### **Social-environmental factors**

Lack or perceived lack of social support, e.g., poor marital relationship; marital status is divorced or widowed.

More dependents under 21 years.

Socio-economic status and education.

Premorbid stressful life events.

### **Disease-treatment factors**

Extent of disease.

Recurrence of disease.

Treatment type.

Phase of treatment.

Other illness and physical health factors.

Control of symptoms.

N. B., The table is summarised from Turner *et al.*, 1998 <sup>6</sup>.

## **3 IDENTIFYING PSYCHOLOGICAL DISTRESS IN WOMEN WITH CANCER**

### **3.1 The recognition of mental health concerns**

The previous section demonstrated that many women experience psychological problems that impact on their quality of life during or following treatment for breast cancer. Whilst a range of interventions has been shown to reduce psychological distress in women (see the *Psychosocial Guidelines* for a comprehensive summary), there is ample evidence that psychological distress in cancer patients is under-recognised and consequently under-treated<sup>57</sup>. For example, Ford *et al.*<sup>2</sup> examined oncologists' accuracy in detecting distress in outpatients with cancer (12.8% with breast cancer). Detection rates were generally low, and the specialists under-rated their patients' distress, yet they usually expressed satisfaction with the way they conducted each interview.

A recent study evaluated a specialist breast nurse (SBN) model of care<sup>3</sup>. SBNs were, on average very good at detecting patients' distress (as measured by GHQ-12 scores) with an overall detection rate of 71% with a base rate of just over one third. However, there were big contextual differences. SBNs' detection rates were as high as 85% when they were aware the patient had been assessed as having multiple psychosocial risks. Detection rates fell to below 20% when if patients initiated consultation and had earlier been assessed as being at low risk. Of greater concern, though, was the finding that referral rates to psychological services, even when detection rates were high, remained very low.

Several factors contribute to the under-recognition and under-referral of psychological problems in populations with medical illness. Some authors have proposed that under-recognition of psychological distress is partially due to the reluctance of women to disclose psychological concerns to the clinicians responsible for their physical health<sup>58</sup>. When symptoms are elicited, they are often minimised by the patients with 'normalising attributions', such as offering somatic explanations for them<sup>59</sup>. Authors have speculated that this is partly because they are embarrassed about discussing perceived subjective difficulties and partly because they believe staff members are too busy to be bothered with subjective difficulties of this sort. While these claims may have some validity, it explains only part of the problem. Patient-practitioner communication is a two-way process but it can be argued that one role of the practitioner is to facilitate open communication and that basic communication skills underpin comprehensive assessment. Research has been conducted on the performance of clinicians in patient-clinician interactions and the results do not support a conclusion that the professionals are adept at facilitating open communication. Ford *et al.*<sup>2</sup> found that oncologists with low identification rates tended to avoid eye contact with their patients and ask

many closed questions related to physical symptoms only. Other research also indicates that questions relating to psychological well-being are not routinely being asked medical staff<sup>57</sup>.

In part, this absence reflects staff attitudes towards, and their level of understanding of, psychological distress in this population. Attitudes towards distress in part reflect people's basic knowledge about the object of the attitude in question. Knowledge of this area among clinicians, this report has shown, is generally not particularly sophisticated. Clinicians are well aware of this limitation. Lack of training in the identification of mental health concerns and organisational resource limitations (e.g., lack of staff and time), are cited as the two main impediments to the implementation of this aspect of the psychosocial care of women with breast cancer<sup>60</sup>. Yet, careful training of nursing staff in the use of psychiatric interview methods can increase detection rates markedly<sup>61</sup>.

Both these issues are related to expertise. Experts have greater skill, based on their knowledge of a field and familiarity with rules for making optimal decisions. In turn, skill helps them be more efficient, so they make better use than most others do of whatever limited time is available. Oncology staff members are quite good at identifying major depression, because they are familiar with this disorder. They are less accurate at identifying adjustment disorder but do improve significantly when trained to detect this less familiar disorder<sup>28</sup>. Advanced knowledge of a domain is a central factor in developing expertise; so increasing practitioners' knowledge is a critical first step in improving detection rates and, ultimately, quality of care. To assist in achieving this goal, general methods of identifying anxiety and depression, and the resources they require, are discussed below.

### **3.2 Identifying anxiety and depression**

It is a truism that clinicians, not tests or instruments, make diagnoses. In psychiatry, the role of the clinician in the diagnostic decision-making process is at least as critical as in other areas of health care. There are few objective signs on which diagnoses can be based, so interpretation of patients' symptoms becomes a decisive component of the process. In order to improve the reliability of psychiatric diagnoses, a great deal of effort has been invested, over the last three decades, in the development of strict operational criteria for identifying discrete conditions. From these endeavours have emerged the latest versions of standardised diagnostic criteria, mentioned earlier, such as DSM-IV. Diagnoses made using these criteria now attain very high levels of reliability, although differences between diagnostic systems can still produce discrepancies in the estimated rates of disorder. In one study of cancer patients, the diagnosis of major depression differed by as much as 13%, depending on the system employed<sup>62</sup>. Nevertheless, this represents a substantial improvement on earlier predicaments. In contemporary research contexts, such as randomised control trials, or evaluations of self-report inventories, the accuracy and reliability of diagnostic decisions almost invariably are

compared with those derived from these standards. Thus, the diagnostic gold standard in mental health is considered to be the correspondence, established by diagnostic interview, between an individual's symptoms and published diagnostic criteria, such as those from DSM-IV for mood or anxiety disorders. The consultation-liaison psychiatry services of major hospitals have mental health staff trained in interviewing and making these diagnoses with persons with medical illness. These resources are not, however, available at all cancer treatment facilities.

Structured clinical diagnostic interviews enable non-clinicians to identify significant mental health concerns in interviewees. These structured clinical interviews, such as the SCID and the CIDI, are conducted individually and can take an hour or more to complete. As noted above, they are mainly used in research programs where non-clinical staff members are required to systematically apply diagnostic criteria to establish objective diagnoses. In most clinical settings, it may be inappropriate or impossible to use this method of identifying concerns with every patient. It would be far too prohibitive, in terms both of costs to the system and of inconvenience to the patients, the majority of who do not experience psychosocial distress. Therefore, mental health screening procedures have been used in many health settings to assist the identification of those requiring further assessment and follow-up.

### **3.3 Screening tools in psycho-oncology**

Numerous self-administered questionnaires and brief interviews exist to measure aspects of psychological adjustment, including mood, anxiety, depression, distress, and psychological problems. Other assessment tools measure important facets of psychosocial functioning, including functional health, coping, social functioning, body image and quality of life. Quality of life is a multidimensional construct, which usually incorporates a general assessment of psychological functioning<sup>63</sup>. Although these other instruments may provide valuable insight into the experience of women with breast cancer, the focus here is limited to tools that examine core aspects of psychological health or distress. In medical settings, these instruments are often used to establish the extent and severity of, as well as to monitor change in, psychological distress over time. They are also used to screen, or identify, patients with a high probability of having significant psychological concerns.

Appropriately constructed (or valid) screening instruments for mental health concerns such as anxiety and depression are usually designed with reference to clinical diagnostic criteria for these conditions. However, brief, easy-to-complete screening instruments will vary in their ability to detect psychological distress in different populations when compared to the "gold standard" diagnosis derived from a comprehensive, mental health diagnostic interview. Reasons for this are numerous. Because depression and anxiety are multidimensional constructs, a brief screen might not include essential specific criteria.



This is particularly possible if the test was developed with older, now outdated, diagnostic criteria in mind, and had not been revised with the release of the newer manuals. Thus, their usage in oncology settings is only cost effective if they reliably identify individuals who have a high probability of meeting diagnostic criteria for significant psychological distress.

A wide range of tools, of both a general and more specific nature, has been used extensively to measure the psychological characteristics of individuals with cancer<sup>64</sup>. However, there are very few guidelines for selecting appropriate screening tools, as little attention has been paid to comparing different instruments and their psychometric properties. The next section identifies and critically evaluates tools that have been used to measure psychological well-being in women with breast cancer.

## **4 METHOD OF IDENTIFICATION AND EVALUATION OF SCREENING INSTRUMENTS**

### **4.1 Identification of screening instruments**

Instruments that have been used to measure the psychological well-being of women with breast cancer were identified from an electronic database search of the published Australian and overseas literature. The searches were conducted on the primary medical and psychological electronic databases MEDLINE, PsychINFO and CINHALL; they included research studies published between January 1986 and December 2001.

Following Turner *et al.*<sup>6</sup>, key words used to initiate the searches were *neoplasm, breast neoplasm or breast cancer*, combined with *psychological or psychosocial*. Each of these topics was explored using the headings of *depression or anxiety, diagnosis or treatment or risk factor*. Articles were included in this report if:

1. The article was printed and in English and published in a referred journal;
2. The article documented original research (no reviews or secondary publications of the same dataset);
3. At least one measure of psychological distress (excluding omnibus quality of life and coping scales), was used;
4. Psychological distress measures had reported validity and reliability estimates (in the present publication or elsewhere);
5. The study population comprised adult patients.

## 4.2 Evaluation of identified screening instruments

Two questions have to be asked of any test. The first, “Is it valid?” asks if the test captures the essential idea that you are attempting to measure. A test should be able to identify true positives without missing any cases (false negatives) and without misidentifying negatives (false positives). This task becomes much more difficult when the underlying construct is treated as a continuum or dimension. Scores obtained by individuals in the two categories will inevitably overlap, so some misclassification is bound to occur. The second question, “Is it reliable?” raises the point that the test must give similar results no matter who uses it, when and where it is used. Thus, both validity and reliability of a screening tool has to be assessed before its worth can be judged.

Validity has several forms. One, which is of interest here, is referred to as concurrent criterion validity. For screening instruments, this involves testing the ability of the instrument to identify significant psychological distress when compared with the results of a formal diagnostic interview. The latter often is referred to as the reference or ‘gold standard’ for establishing concurrent criterion validity. After administering both the screening instruments and the clinical diagnostic interviews to the same research participants, the researchers are able to calculate statistics that summarise the diagnostic accuracy of the screening tool when compared with patients’ diagnoses. While most of the screening instruments discussed below have been evaluated with other populations, it is important to emphasise that the procedure must be repeated when any screening tool is adopted for use with different patient populations <sup>65</sup>. In this instance, it is particularly important to ensure that the disease process and the side effects of treatment are not mistaken for symptoms of psychological distress. Otherwise, the rates of diagnosis will be artificially inflated and the diagnostic accuracy of the screening tool will be compromised.

On the other hand, if the screening tool does not include key criteria from the current diagnostic manuals, then it will not achieve high rates of concordance in other ways. It might have too stringent a benchmark for diagnosing a particular disorder and so will miss many true cases, as determined by the diagnostic criteria. Alternatively, it might set too low a hurdle, and so identify an excess of false cases, according to the diagnostic criteria.

Together, these potential pitfalls illustrate the fine line that psychological screening measures have to tread in the general medical field. They explain why screening tools cannot be relied on as the sole basis for clinical decision-making. However, some perform better than others in the medical context do, and it is helpful to identify a conventional way of comparing their relative performances. Below are listed four key concepts used to judge the diagnostic accuracy of screening

tools. They are defined here for the readers' reference Table 2 illustrates how the indices are calculated. For a more detailed introduction to these concepts, see Clarke and McKenzie (1991) <sup>66</sup>.

*Sensitivity*: This term refers to a measure's ability to correctly identify patients with a true diagnosis derived from the clinical interview. A high sensitivity index suggests a test picks up many true cases and yields a low rate of false negative cases.

*Specificity*: Refers to the ability of the measure to correctly identify patients who did not receive a diagnosis or clinical interview. A high specificity index suggests a test rejects many true negatives and yields a low rate of false positive cases.

*Positive predictive value (PPV)*: Refers to the percentage of patients who have a positive screening result that received a true diagnosis from the clinical interview. A high PPV index suggests a test picks up many true positive cases and yields a low rate of false positive cases.

*Negative predictive value (NPV)*: Refers to the percentage of patients who have a negative screening result that received no diagnosis based on the clinical interview. A high NPV suggests a test correctly rejects many true negatives and yields a low rate of false negative cases.

**Table 3 Calculating key indices used for assessing screening tests.**

		Diagnostic Interview Result	
		Psychological Diagnosis	No Psychological Diagnosis
Screening Test Result	Positive	<i>a</i> true-positive cases	<i>b</i> false-positive cases
	Negative	<i>c</i> false-negative cases	<i>d</i> true-negative cases

**Indices**

Prevalence =  $(a + c) / (a + b + c + d) \times 100$

Sensitivity =  $(a) / (a + c) \times 100$

Specificity =  $(d) / (d + b) \times 100$

PPV =  $(a) / (a + b) \times 100$

NPV =  $(d) / (d + c) \times 100$

Misclassification rate =  $(b + c) / (a + b + c + d) \times 100$

N.B., for a more detailed introduction to these concepts, see Clarke and McKenzie (1991) <sup>66</sup>

## **5 REVIEW OF PSYCHOLOGICAL SCREENING INSTRUMENTS**

More than 30 validated measures of psychological distress were identified from the studies included in the literature search. Some are used regularly in research involving women with breast cancer (e.g., the Hospital Anxiety and Depression Scale). Others of the instruments, such as the Geriatric Depression Scale are adapted for use from different populations and are used infrequently. These will not be reviewed here. Still others, such as the Psychological Distress Inventory (PDI) <sup>67</sup>, show great promise; however, because they have not been fully validated nor widely adopted, also will not be reviewed. Appendix A provides a summary of the identified scales considered for inclusion.

Twenty previously validated instruments, which were used more frequently in research studies or which raised specific theoretical and methodological issues, were selected for further consideration. They are described in table 4, and their properties are reviewed below.

### **5.1 Psychological distress measures used in breast cancer research**

#### **5.1.1 General measures of psychological distress**

Two types of instruments that seek to measure aspects of psychological well-being are described in table 4: clinician or observer rating scales, and self-report measures of psychological distress. Suitably trained individuals administer clinician or observer rating scales during a structured or unstructured interview. Self-report measures seek to measure levels of anxiety or depression by asking respondents to rate their experiences of symptoms in terms of severity or frequency over some specific period. They usually yield a numeric score that represents how severe or extreme the condition is. Scores above a certain point, referred to as the cut-off score, are taken to indicate probable 'caseness'. In other words, if a patient's score is higher than the cut-off, then she is likely to be experiencing a clinically significant episode of depression or anxiety. Self-report measures are used often in research with women with breast cancer in order to identify those with high levels of symptoms of depression/anxiety and to identify the change in level of symptoms over time or following some intervention.

### 5.1.2 Cancer specific measures of psychological distress

Several measures have been developed specifically for use with populations with cancer. Of the measures listed in table 4, only the Rotterdam Symptom Check List (RSCL) measures the construct of psychological distress. Other frequently used scales measure related, but distinct constructs, such as functional status and cognitive adjustment and coping. These scales are not reported here.

**Table 4 Properties of measures of psychological distress used in breast cancer research**

Properties	Affects Balance Scale (ABS)	Beck Depression Inventory (BDI)
<b>Reference</b>	Derogatis (1975).	Beck <i>et al.</i> (1961); Beck <i>et al.</i> (1979).
<b>Style</b>	Self-report.	Self-report.
<b>Items</b>	40	21
<b>Rating Scale</b>	0 to 4; negative mood states weighted negatively.	0 to 3; all items.
<b>Time Frame</b>	Current.	Recently (original); Past 7 days (revised).
<b>Norms and cut-off scores</b>	Positive affect: 56 the norm in healthy controls. Negative affect: 21 the norm. 80 maximum score on each scale.	=> 13 as screening criterion. => 21 as research criterion. 63 maximum score.
<b>Dimensions</b>	Eight dimensions of mood.	Depression score only.
<b>Structure</b>	Positive dimensions: joy, vigour, affection, and contentment. Negative dimensions: anxiety, guilt, hostility, and depression.	16 items assess depressive cognitions and affects; 5 items measure somatic signs and symptoms.

**Table 4 (continued)**

<b>Comments:</b>	Measures global changes in positive and negative emotional states.	Wide usage; sensitive to change in symptoms; valid for use with psychiatric and general populations; validated in several languages.
<b>Positive Features</b>	Good for measuring changes in emotional well-being pre-post intervention.	
<b>Comments:</b>	Scoring algorithms are not simple; provides affective dimension scores only; unsuitable as a brief screen.	High correlation with measures of anxiety.
<b>Negative Features</b>		Questionable for use with medical populations because of the somatic items.
<b>Practical Considerations</b>	Copyrighted and must be purchased: see  <a href="http://www.derogatis-tests.com">http://www.derogatis-tests.com</a>	Requires only 5 to 10 minutes to complete, simple to score.  Revision is copyright; must be purchased.
<b>Examples of use in breast cancer studies</b>	Northouse (1989). Ayres <i>et al.</i> (1994).	Gil & Gilbar (2001). Green <i>et al.</i> (2000). Kathol <i>et al.</i> (1990). Saleeba <i>et al.</i> (1996)

<b>Properties</b>	<b>Beck Depression Inventory – Short Form (BDI-SF)</b>	<b>Beck Depression Inventory (BDI-II)</b>
<b>Reference</b>	Beck <i>et al.</i> (1972).	Beck <i>et al.</i> (1996).
<b>Style</b>	Self-report.	Self-report.
<b>Items</b>	13	21
<b>Rating Scale</b>	0 to 3.	0 to 3.
<b>Time Frame</b>	Recently.	Past two weeks.
<b>Norms and cut-off scores</b>	0 to 4: minimal symptoms. 5 to 7: mild depression. 8 to 15: moderate depression. 16+: severe depression.	0 to 13: minimal symptoms. 14 to 19: mild depression. 20 to 28: moderate depression. 29 to 63: severe depression.
<b>Dimensions</b>	Depression only.	Depression only.

**Table 4 (continued)**

<b>Structure</b>	13 items, three of which measure somatic symptoms. Scores remain comparable with the BDI.	21 items, four of which measure somatic symptoms. 4 new questions in this version, although scores remain comparable with the BDI.
<b>Comments:</b>	Developed as a screening tool for use with patients in general medical practice. It is also sensitive to changes in severity. A score above 4 is taken as an indication that the physician needs to evaluate further.	Corresponds with DSM-IV criteria for depression; validated for use with psychiatric populations. Modified questions may make it more appropriate for use with populations with cancer.
<b>Positive Features</b>		
<b>Comments:</b>	To date, not much data about cancer populations.	To date, not much data about populations with health problems. Unlike the BDI, it is a pay per use scale.
<b>Negative Features</b>		
<b>Practical Considerations</b>	Requires less than 5 minutes to fill in. Simple to score.	Requires 5 to 10 minutes to complete. Simple to score. Copyrighted and must be purchased.
<b>Examples of use in breast cancer research</b>	No published reports of its use exclusively in breast cancer. Chochinov <i>et al.</i> (1997)	No published reports of its use exclusively in breast cancer.

<b>Properties</b>	<b>Beck Depression Inventory – Primary Care (BDI-PC)</b>	<b>Brief Symptom Inventory (BSI - 53)</b>
<b>Reference</b>	Beck <i>et al.</i> (1997).	Derogatis & Spencer (1982).
<b>Style</b>	Self-report.	Self-report.
<b>Items</b>	7.	53.
<b>Rating Scale</b>	0 to 3.	0 to 4.
<b>Time Frame</b>	Past two weeks.	Past week.

**Table 4 (continued)**

<b>Norms and cut-off scores</b>	0 to 3: minimal symptoms. 4 and above: possible depression.	For non-psychiatric populations, a T score of 63 is the cut-off.  The manual provides norms for 4 different groups.
<b>Dimensions</b>	Depression only.	Nine types of psychiatric symptoms.
<b>Structure</b>	7 items, all related to the affective or cognitive dimensions: sadness; loss of pleasure; suicidal ideation; pessimism; past failure; self-dislike; and self-criticalness.  No somatic items.	9 scales and 1 global severity index: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism. GSI, an index of distress.
<b>Comments:</b> <b>Positive Features</b>	Corresponds with DSM-IV criteria for depression; validated for use with primary care populations.	The short form of the SCL-90. Used frequently in research studies with cancer patients. Good reliability in psychiatric patients.
<b>Comments:</b> <b>Negative Features</b>	To date, limited data about populations with cancer. It is a pay per use scale.	Lengthy and difficult to score. Multidimensional structure makes it difficult interpret. Separate scales have not been validated.
<b>Practical Considerations</b>	Requires less than 5 to complete. Simple to score. Copyrighted and must be purchased.	Copyrighted and must be purchased: see <a href="http://www.derogatis-tests.com">http://www.derogatis-tests.com</a>
<b>Examples of use in breast cancer research</b>	No published reports of its use exclusively in breast cancer.  Beck <i>et al.</i> (1997)	BenZur <i>et al.</i> (2001). Gilbar (1996). Gilbar & Florian (1991). Green <i>et al.</i> (2000). Payne (1999). Zabora <i>et al.</i> (2001).

Properties	Brief Symptom Inventory (BSI – 18)	Centre for Epidemiological Studies-Depression Scale (CES-D)
Reference	Derogatis & Spencer (1982).	Radloff (1977).
Style	Self-report.	Self-report.
Items	18.	20 (shorter versions available).



**Table 4 (continued)**

<b>Rating Scale</b>	0 to 4.	0 to 3.
<b>Time Frame</b>	Past week.	Frequency of symptoms during the last week.
<b>Norms and cut-off scores</b>	For non-psychiatric populations, a T score of 63 is the cut-off.  The manual provides norms for 4 different groups.	16 indicates depressed mood.  60 maximum score.
<b>Dimensions</b>	Three types of psychiatric symptoms.	Depression score only.
<b>Structure</b>	3 scales and 1 global severity index: somatic, depression, anxiety, and GSI, an index of distress.	Emphasis is on the affective component of depressed mood: 8 affect items, 4 items for depressive cognitions, and psychomotor retardation loss of appetite, sleep disturbance, and interpersonal difficulty.
<b>Comments: Positive Features</b>	Good reliability in psychiatric patients. The BSI-18 with 3 dimension (D, A, Somatic) and GSI scores, offers a convenient alternative to the longer version.	Used frequently in studies with cancer patients. A reliable instrument that shows moderate correlation with other instruments such as SF-36 & HADS.
<b>Comments: Negative Features</b>	Separate scales have not been validated.	The scale is rather non-specific.  Not written to diagnostic criteria; does not indicate severity of difficulties.
<b>Practical Considerations</b>	Copyrighted and must be purchased: see  <a href="http://www.derogatis-tests.com">http://www.derogatis-tests.com</a>	Requires 5 to 10 minutes to complete and is simple to score.  Need not be purchased.
<b>Examples of use in breast cancer research</b>	Zabora <i>et al.</i> (2001).	Carpenter <i>et al.</i> (1998). Hann <i>et al.</i> (1999).

---

**Table 4 (continued)**

<b>Properties</b>	<b>General Health Questionnaire (GHQ – 60/28)</b>	<b>General Health Questionnaire (GHQ – 30/12)</b>
<b>Reference</b>	Goldberg & William (1988)	Goldberg & William (1988)
<b>Style</b>	Self-report.	Self-report.
<b>Items</b>	60 or 28 items.	30 or 12 items.
<b>Rating Scale</b>	0 to 3, or 0/1.	0 to 3, or 0/1.
<b>Time Frame</b>	Past few weeks.	Past few weeks.
<b>Norms and cut-off scores</b>	Total of 12 or more items endorsed indicates the need for further assessment.	GHQ-30: Total of 5 or more items indicates the need for further assessment.  GHQ-12: Total of 3 or more items.
<b>Dimensions</b>	60 - Single dimension of distress. 28 – Four subscale scores.	Both versions provide a single dimension of distress.
<b>Structure</b>	Items are drawn from several domains but they are not interpreted as separate subscales (although there is a 28-item version, which provides 4 subscales).	GHQ-30/12: items on general distress, with no subscales. Items do not include any somatic symptoms.
<b>Comments: Positive Features</b>	Developed for use with non-psychiatric patients.	The GHQ-12 is as psychometrically sound as the longer versions. Good for change in functioning; patients evaluate present state relative to their normal functioning. No somatic items.
<b>Comments: Negative Features</b>	The 60-item scale is rather non-specific.  Not written to diagnostic criteria; does not indicate type of difficulties.	GHQ-12 does not correspond to criteria for anxiety or depressive disorders – assesses general distress.
<b>Practical Considerations</b>	GHQ-60: 5 to 10 minutes to complete; simple to score.	GHQ-30: 5 minutes and GHQ-12: 2 minutes to complete, simple to score

**Table 4 (continued)**

<b>Examples of use in breast cancer research</b>	GHQ-60: Hughson (1988). Ibbotson <i>et al.</i> (1994).	GHQ-30: Ford <i>et al.</i> (1995). Lee <i>et al.</i> (1997).
	GHQ-28: Tjemsland <i>et al.</i> (1998).	GHQ-12: Chen (1996). Howard & Harvey (1998).

<b>Properties</b>	<b>Hamilton Rating Scale For Depression (HRSD)</b>	<b>Hospital Anxiety and Depression Scale (HADS)</b>
<b>Reference</b>	Hamilton (1967).	Zigmond & Snaith (1983).
<b>Style</b>	Clinician rating scale.	Self-report.
<b>Items</b>	17	14
<b>Rating Scale</b>	0 to 2 or 0 to 4.	0 to 3.
<b>Time Frame</b>	Past week or so.	Past week.
<b>Norms and cut-off scores</b>	15: 'major depression' 30: 'severe depressive illness' 52: maximum score.	Both Scales: 8 to 10 – "possible" case; ≥11 "definite" case.  Or Total distress ≥19.
<b>Dimensions</b>	Depression score.	Anxiety and Depression Scales.
<b>Structure</b>	9 items related to psychological and behavioural signs.  8 items related to somatic aspects.	7-item anxiety scale (general anxiety, panic).  7-item depression scale (mainly anhedonia; excludes somatic items).
<b>Comments: Positive Features</b>	Well-researched, popular rating scale, efficient for the assessment of the severity of depression and sensitive to changes in symptom level. For use during clinical interview. Known to be very reliable in psychiatric populations.	Does not have somatic items possibly linked to disease or treatment. Frequently used with women with breast cancer, and other medical populations. Questions phrased as positive symptoms as well loss of functioning

**Table 4 (continued)**

<b>Comments:</b>	Strong somatic focus. Core symptom of anhedonia is not clearly elicited. Requires some expertise to administer. Ratings of two clinicians recommended.	Anxiety scale appears to be more reliable than the depression scale. Some indication that the two-factor structure is not valid in all populations.
<b>Negative Features</b>		
<b>Practical Considerations</b>	Requires considerable time and expertise to administer.	Brief, simple to complete and score. Available in community languages.
<b>Examples of use in breast cancer research</b>	Holland <i>et al.</i> (1998).	Ford <i>et al.</i> (1995). Hall <i>et al.</i> (1999). Herrmann (1997). Hopwood (1991). Ibbotson <i>et al.</i> (1994). Lloyd-Williams <i>et al.</i> (2001). Morasso (1996). Payne (1999). Ramirez <i>et al.</i> (1995). Razavi (1990). Spinhoven <i>et al.</i> (1997). Watson <i>et al.</i> (1991).

<b>Properties</b>	<b>Medical Outcomes Study Health Survey Short Form (SF-36)</b>	<b>Medical Outcomes Study Health Survey Short Form (SF-12)</b>
<b>Reference</b>	Stewart <i>et al.</i> (1988).	See web site below.
<b>Style</b>	Self-report	Self-report
<b>Items</b>	36.	12 (from the SF-36).
<b>Rating Scale</b>	Varies: 2 to 6-point scales.	Varies: 2 to 6-point scale.
<b>Time Frame</b>	Last 4 weeks	Last 4 weeks
<b>Norms and cut-off scores</b>	Normative Data: raw scores are transformed to a scale of 0 to 100; higher score, better health.	Normative Data: raw scores are transformed to a scale of 0 to 100; higher scores better.
<b>Dimensions</b>	Mental and physical health and functioning.	Mental and physical health and functioning.
<b>Structure</b>	Multi-dimensional: includes mental and physical health, pain and role limitations. Summary mental and physical health scores.	Multidimensional with summary mental and physical health scores.

**Table 4 (continued)**

<b>Comments:</b>	Well-developed instrument used extensively in large-scale health outcomes research. Emphasises functional health; provides clinically useful information about functionally limiting health factors such as pain and fatigue. No data about SF-8 (one question per scale) to date.	SF-12 is claimed to be as robust as the longer measure.
<b>Positive Features</b>		
<b>Comments:</b>	Mental Health items do not measure loss of enjoyment or anxious preoccupation. Sophisticated scoring; administration of the full SF-36 requires analysis and interpretation by a computer program.	Mental Health items do not measure loss of enjoyment or anxious preoccupation. Sophisticated scoring; administration of the SF-12 requires analysis and interpretation by a computer program.
<b>Negative Features</b>		
<b>Practical Considerations</b>	Free (non-profit) use with registration:  <a href="http://www.sf-36.com">http://www.sf-36.com</a>	Free (non-profit) use with registration:  <a href="http://www.sf-36.com">http://www.sf-36.com</a>
<b>Examples of use in breast cancer research</b>	Day <i>et al.</i> (1999). Helgeson <i>et al.</i> (2000). Ganz (1998).	No examples identified.

<b>Properties</b>	<b>Medical Outcomes Study Health Survey Short Form (SF-8)</b>	<b>Mental Health Inventory- 5 (MHI-5)</b>
<b>Reference</b>	See web site below.	Berwick <i>et al.</i> (1991).
<b>Style</b>	Self-report	Self-report
<b>Items</b>	8.	5 (from the SF-36).
<b>Rating Scale</b>	Varies: 5 to 6-point scales.	6-point scale.
<b>Time Frame</b>	Last 4 weeks	Last 4 weeks

**Table 4 (continued)**

<b>Norms and cut-off scores</b>	Normative Data: raw scores are transformed to a scale of 0 to 100; higher score, better health.	Raw scores: 5 to 30. Normative Data: raw scores are transformed to a scale of 0 to 100; higher scores better.
<b>Dimensions</b>	Mental and physical health and functioning.	Mental Health: depression; anxiety.
<b>Structure</b>	Multi-dimensional: includes mental and physical health, pain and role limitations.	One-dimensional scale of 5 items: affect/mood (3 items), anxiety (1 item), “emotional control” (1 item).
<b>Comments: Positive Features</b>	One question per scale are markers for the 8 scales of the SF-36.	Psychometric properties in health populations as robust as longer versions derived from the SF-36 and the GHQ-30. Positive and negative phrasing of statements makes this instrument less threatening than other measures. Samples mood over a clinically significant period of 1 month.
<b>Comments: Negative Features</b>	Mental Health items do not measure loss of enjoyment or anxious preoccupation. Sophisticated scoring: administration of the SF-8 requires analysis and interpretation by a computer program.	Does not measure anhedonia or anxious preoccupation. Time taken to transform the raw scores is the major disadvantage. Might not be sensitive to small changes over time, hence more useful as a screening tool.
<b>Practical Considerations</b>	Available for purchase (royalty free for research) from: <a href="http://www.qualitymetric.com">http://www.qualitymetric.com</a>	Free (non-profit) use with registration: <a href="http://www.sf-36.com">http://www.sf-36.com</a>
<b>Examples of use in breast cancer research</b>	No examples identified.	No examples identified.

---

**Table 4 (continued)**

<b>Properties</b>	<b>Montgomery-Åsberg Depression Rating Scale (MADRS)</b>	<b>Psychosocial Adjustment to Illness (PAIS)</b>
<b>Reference</b>	Montgomery & Åsberg (1979).	Derogatis (1986).
<b>Style</b>	Clinician rating scale	Self-report or clinical interview
<b>Items</b>	10	46
<b>Rating Scale</b>	0 to 6 scale	4-point scale
<b>Time Frame</b>	Past week	Last 30 days
<b>Norms and cut-off scores</b>	7 to 18: mild depression 60: maximum score.	Normative Data are available.
<b>Dimensions</b>	Depression only.	Multidimensional aspects of adjustment to illness.
<b>Structure</b>	7 items for psychological and behavioural aspects. 3 items for somatic aspects.	Total score & 7 subscales: Health care orientation; vocational & domestic life; relationships; psychological distress.
<b>Comments:</b> <b>Positive Features</b>	Covers most of the core symptoms of depression – particularly psycho-logical symptoms. A Brief scale but requires a full interview for completion. High inter-rater reliability reported. Sensitive to changes in severity of symptoms over time.	Measures impact of illness on a comprehensive range of markers of functional health and well-being. Can also be adapted to measure outcomes in patient's immediate family. Validated in populations with cancer.
<b>Comments:</b> <b>Negative Features</b>	Requires some expertise to administer and score. Half the intervals are unanchored by criteria. High rates of false positives found in some populations (e.g., post-partum women).	Distress scale inadequate.
<b>Practical Considerations</b>	Training in administration required, not suitable for screening or diagnosis.	Requires 20 to 25 minutes to complete the interview or self-rating questionnaire.

**Table 4 (continued)**

<b>Examples of use in breast cancer research</b>	Jenkins <i>et al.</i> (1991). Maes <i>et al.</i> (2001). Pezzella <i>et al.</i> (2001). Tjemsland <i>et al.</i> (1997).	Gilbar, (1996). Greer <i>et al.</i> (1992). Tobin <i>et al.</i> (1993).
<b>Properties</b>	<b>Rotterdam Symptom Checklist (RSCL)</b>	<b>State-Trait Anxiety Inventory (STAI)</b>
<b>Reference</b>	de Haes (1990).	Spielberger <i>et al.</i> (1970).
<b>Style</b>	Self-report questionnaire	Self-report questionnaire
<b>Items</b>	8 (psychological distress scale)	40
<b>Rating Scale</b>	0 to 4.	4-point scale
<b>Time Frame</b>	Past 3 days.	A-state = 'right now'. A-trait = 'generally feel'.
<b>Norms and cut-off scores</b>	Psychological Distress $\geq 11$ for possible caseness.	80: maximum score. Normative data: General Medical & Surgical - Mean (SD) State=43 (14); Trait=41 (13).
<b>Dimensions</b>	Psychological distress	State Anxiety; Trait Anxiety.
<b>Structure</b>	Part of a three-subscale quality of life measure:  Physical symptoms – 22 items.  ADL – 8 items.	Two scales: State Anxiety - 20 items assessing current level of anxiety; Trait anxiety - 20 items assessing how the person generally feels.
<b>Comments: Positive Features</b>	Designed specifically for patients with cancer; provides a more comprehensive view of psychosocial adjustment; short, easy to complete, taking very little patient time.	Statements measure severity of anxiety and worry. Acceptable reliability and support for the independence of state and trait anxiety. State and Trait forms can be administered independently. Frequently used in clinical research.



---

<b>Comments:</b>	Uses a non-standard time frame, making it hard to compare results with standard diagnostic criteria.	Statements about trait and state scales do not correspond with key clinical criteria for anxiety disorders (control of worry); panic not identified. Lack of norms for women with Breast Cancer, so it is not clear what cut-offs to use.
<b>Negative Features</b>	Provides only one dimension of distress rather than discriminating.	
<b>Practical Considerations</b>	Short, takes very little time, although it takes longer if the full scale is administered.	Care needed when computing and interpreting normative data.
<b>Examples of use in breast cancer research</b>	Hall <i>et al.</i> , 1999. Hopwood <i>et al.</i> , 1991. Ibbotson <i>et al.</i> (1994).	Howard <i>et al.</i> (1998). Saleeba <i>et al.</i> (1996).

---

## **5.2 Appraisal of measures validated in populations with breast cancer**

The validity of each of the instruments identified in table 4 for the most part has been tested against the administration of a clinical diagnostic interview. As described earlier in this report, the concordance between the psychological distress, identified by a clinical psychiatric interview assessing clinical diagnostic criteria, and the screening instrument, is the most effective research design for establishing diagnostic accuracy.

The following section reviews each of the instruments, wherever possible reporting their validation using a clinical interview as the gold standard. The appraisal of each instrument is conducted with reference to the screening instrument assessment framework detailed earlier.

### **5.2.1 Affect Balance Scale (ABS)**

The ABS is a 40-item self-report inventory designed to assess current mood state<sup>68</sup>. The scale provides scores on eight dimensions of both positive and negative affect. This aspect is its main strength, as the assessment of both aspects of affective state is a key theoretical construct in models of well-being. In addition, the reliability and validity of the scale is established in a range of populations, and it is frequently employed in studies of breast cancer. It is not a simple test to administer, however, and takes some time to score, as the rules are relatively complex. Its major disadvantage is that it assesses only the mood aspects of distress and thus cannot be used to screen for psychiatric disorders. It is a good indicator of well-being, however, and adds to our understanding of the relationship between mental state and illness. For example, it has been shown that, over time, mastectomy patients' mood, as measured by

the ABS, improved but their symptom distress increased <sup>69</sup>. Positive scores have been correlated with greater adherence to chemotherapy in women with breast cancer, while high guilt and hostility scores were associated with non-compliance <sup>70</sup>.

The ABS might be suitable for outcome studies or longitudinal observation research, where it is desirable to assess both positive and negative affective responses. Its utility as an everyday screening device is far more limited, however, because it is complex to score, provides too much detail for general use, and does not give results compatible with current diagnostic criteria, as it only assesses the affective domain. Therefore, it is considered unsuitable for use as a single screening tool in a breast cancer population.

### **5.2.2 Beck Depression Inventory (BDI)**

The Beck Depression Inventory is one of the most widely used and carefully investigated self-report inventories for depression <sup>71</sup>. It consists of 21 items covering three broad areas of mood-related, cognitive and physical symptoms. Patients indicate the severity of each symptom, over a seven-day period, on a 4-point scale (scored from 0 to 3). Guidelines for cut-off scores are provided, although other studies have produced different optimal cut-offs, emphasising the need to establish local norms. It only provides severity scores on a depression dimension, although a companion anxiety scale is now available. Its advantages include the wide usage it experiences, as its content and interpretation is familiar to most clinicians in the area. It is also very sensitive to change in symptoms or severity, so it can be used to monitor progress. It can be completed and scored relatively quickly.

The negative features include that frequently it is highly correlated with anxiety measures. While it is possibly the result of co-morbidity factors, some theorists have noted that this might result from the design of the BDI, which does not attempt to disguise the construct under investigation and might encourage a negative response set, as studies show that non-distressed volunteers can fake high scores <sup>72</sup>. There is also concern that the somatic items can artificially inflate the estimated prevalence rate in medically ill populations. Alternative versions for use with the medically ill have been created (see below). Furthermore, the scale was constructed before the advent of recent revisions of DSM and the items do not exactly match the current criteria for depression (see table 1). Nevertheless, the BDI represents a possible candidate as a screening tool for depression.

Surprisingly, given its widespread use with other patient populations, the BDI has not been reported frequently in breast cancer research. This could be because of the concern over the somatic item content. There are several examples worth noting, however. Kathol *et al.* <sup>62</sup> studied a

mixed group of cancer patients and compared the diagnostic accuracy of several scales, including the BDI, against the gold standard of the then-current DSM-III criteria. They found that the BDI was useful for screening those with depressive symptoms, although it tended to misclassify patients without major depression. They also found that rates of major depression in the sample varied by as much as 13%, depending on which classification system was used, indicating the disagreement rates were not caused solely by the scales' limitations but are related to how well the construct of depression is operationalised in the various diagnostic systems. In a different study, using the BDI together with the STAI, it was shown that long-term survivors of breast cancer have higher levels of 'subclinical' psychological distress than community controls <sup>73</sup>.

In a more recent study, Gil and Gilbar <sup>74</sup> explored hopelessness, depression (as measured by the BDI) and social support among cancer patients from Israel. They found that hopelessness and depression were closely related. In multiple regression analyses, hopelessness was also predicted by social support, with those patients experiencing higher levels of social support feeling less hopeless about their predicaments. Clearly, the links between social support, hopelessness, and depression are important factors to monitor in providing psychosocial interventions and the evidence suggests that the BDI would provide a very helpful and convenient method of monitoring patients' level of distress.

The relatively uncomplicated, user-friendly design of the BDI makes it easy to complete and to score. The scale is familiar to clinicians, and the relative comparisons of severity scores are generally well understood, so results are easily digested. A well-validated, reliable instrument, it provides stable scores that are sensitive to change. It does have its drawbacks: it is relatively long, the items can create a response set, and the somatic items might distort scores in a medical population. The revised version was copyrighted in 1979, although the original version is still freely available. On balance, it represents a suitable choice as a screening instrument for depression in a breast cancer population.

### **5.2.3 Beck Depression Inventory – Short Form (BDI-SF)**

Because the full length BDI includes a number of somatic items that tends to increase the proportion of false positive cases when used with medically ill populations, a short form of the scale has been devised <sup>75</sup>. It comprises 13 items, mostly related to affective and cognitive aspects of depression with only three items referring to somatic symptoms. Its authors envisaged an explicit role for the BDI-SF as a screening instrument for use with patients in family practice, with a cut-off score of 4 that would indicate the need for further investigation of the patient's mental state by the physician.

The scale uses a subset of the items from the full scale and correlates .95 with full-scale scores. It was validated against clinicians' rating of depth of depression; scores on the BDI-SF correlated .61

with the clinicians' ratings. Others have validated it for use with older adults; with a cut-off score of 5, it showed adequate reliability, low concurrent validity with the Hamilton Rating Scale but excellent sensitivity (.97) and good specificity (.77) when compared with psychiatrists' diagnoses of depression <sup>76</sup>. The low specificity might indicate that the somatic items are responsible for creating false positives, and confirmatory factor analysis has been used to investigate scale's factor structure <sup>77</sup>. Two factors, one covering non-somatic symptoms and the other consisting of the three somatic symptoms, gave the best fit to the data (from 598 family practice outpatients). However, there was a correlation of .72 between the factors and one of the three items, *anorexia*, loaded on both.

The BDI-SF thus represents a potentially suitable choice as a screening tool for depression in women with breast cancer. It is readily available, has a relatively wide score range that is responsive to change in patients' symptoms, and is easy to administer and score. Its drawbacks include the presence of three items with somatic content that form a possible unique factor and that might contribute to the number of false positives. Omitting the items from the somatic factor might delete important information, especially concerning anorexia. The most appropriate use might be to record responses on all 13 items, screening for scores over the recommended cut-off of 4 (or the cut-off established using local norms) and carefully check for false positives who are endorsing the somatic items but not the others items.

#### **5.2.4 Beck Depression Inventory II (BDI-II)**

The BDI-II is a recent development of the BDI <sup>78</sup>. The scale was reconstructed in the light of some of the criticisms levelled at the original scale. The items were aligned more closely with DSM-IV criteria for depression, according to the authors, and the scoring was improved. It presumably shares all of the psychometric strengths of the earlier version, although it is not possible to generalise without the necessary validation studies. As it is a recent development, it has not been widely used in medical settings, so there is a paucity of evidence with which to evaluate it. This is perhaps an area for further research.

Potential criticisms include the relative length of the scale, the retention of a number of somatic items, which might make it inappropriate as a screening instrument for use with medical patients, and the fact that it is now available only as a purchasable item from its publishers. As many clinical settings do not have the resources to purchase items such as this, it might prove to be an unsuitable selection as a screening tool.

### **5.2.5 Beck Depression Inventory – Primary Care (BDI-PC)**

Concerning the criticism levelled at the BDI in its different versions, related to the potential contamination effects of the somatic items, a recent development is worth noting. A version designed for use with medical patients, the BDI-PC (for Primary Care), has been created <sup>79</sup>. It comprises seven items, representing symptoms of sadness, loss of pleasure, suicidal ideation, pessimism, past failure, self-dislike and self-criticalness. The last five were chosen because, according to the authors, they load saliently on the *cognitive* dimension of the BDI-II. Items associated with the *somatic* dimension, which could be confounded with symptoms of medical illness, are omitted. With a cut-off score of four, the scale yielded sensitivity and specificity both of .82 as a screen for medical inpatients with and without diagnoses of major depressive disorders derived from the Prime-MD. To date, no studies including the BDI-PC with breast cancer patients have been published, but this appears a promising avenue to pursue. However, its drawbacks include the costs associated with purchasing forms from the publishers. If costs are a factor in the selection of a self-report instrument, then the BDI-PC might not be a suitable choice.

### **5.2.6 Brief Symptom Inventory (BSI-53)**

The BSI comprises 53 items <sup>80</sup>. It is a self-report inventory, providing nine separate scale scores: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. It also provides a Global Severity Index (GSI), a measure of general distress. It was developed as a short form of the Symptom Check List (SCL-90), a widely used psychiatric screening tool. The BSI-53 has high reliability and its validity in relation to the SCL-90 is well established <sup>81</sup>. It has also been used frequently in research with cancer patients. The distinct advantage of the BSI-53 is the rich profile of distress it can provide for patients. Intervention decisions are better informed and treatment progress is more effectively monitored if these details are collected. However, the drawback is that the richness makes it rather lengthy and difficult to score and interpret. Moreover, each of the separate scales has not been validated against appropriate criteria in medical populations. Thus, its diagnostic accuracy for separate diagnoses has not been established.

As noted, many studies have used the BSI-53. For example, Gilbar and Florian <sup>82</sup> compared women with operable and inoperable breast cancer on dimensions of the BSI. Women with inoperable tumours had higher scores on the Depression, Somatization, Hostility, and Psychoticism scales. In a later study, Gilbar <sup>49</sup> compared those women who had subsequently died with those who had survived. Patients who died had more severe scores on the BSI-53 scales, including the GSI. The authors also found that severity of anxiety and somatization predicted a high risk of dying. Ben Zur

*et al.*,<sup>83</sup> compared levels of distress, as assessed with the BSI, and coping modes in women with breast cancer. They found that the use of emotion-focused coping, including ventilation and avoidance strategies, was significantly related to patient distress and poor adjustment. Payne *et al.*,<sup>84</sup> used the BSI-53 among other scales, to assess the distress of 275 women with breast cancer attending ambulatory breast clinics. They reported high levels of distress in their sample and found significant correlations between BSI (Global Severity Index), Visual Analogue Scale, and HADS (total) scores. They indicated that the BSI-53 served as an effective way of documenting need for further psychiatric service provision but, because it was briefer, they selected the HADS for screening purposes. Validity statistics, such as sensitivity and specificity of the two inventories were not reported. Similar studies with the BSI-18 would provide helpful comparisons with these results and perhaps demonstrate that the shorter version offers many of the advantages of longer version with fewer of the drawbacks.

Overall, the BSI-53 represents a suitable choice as a self-report inventory of distress for women with breast cancer if the goal is to provide a comprehensive assessment of problems on different dimensions. It is especially useful if the intention is to provide a comparison with other cancer populations or at patients at other sites, as it has been widely used and well-accepted in studies of this type. However, its complicated scoring requirements and relative length make it a less suitable choice where an index of distress severity and a screening tool for further assessment is required.

### **5.2.7 Brief Symptom Inventory – 18 (BSI-18)**

In response to the potential problems associated with BSI-53, a shorter version, the BSI-18, has been developed. It provides scores on three dimensions: Depression, anxiety and somatization, as well as a GSI. It is much easier to administer and interpret, yet gives a relatively detailed profile of those symptom aspects that are most relevant to medical patients in general and breast cancer patients in particular. While the separate dimensions have not been validated against appropriate criteria, its general severity index provides a sensitive and reliable indicator of current psychological distress in cancer patients<sup>7</sup>. The authors suggest that it is a strong candidate for selection as a screening instrument with cancer populations.

In summary, the BSI-18 is a shorter, easier to administer, version of the BSI-53 that does not provide the same level of detail but does give essential information. It is not freely available and costs might be a deciding factor. However, it is easier to use than the longer version and takes very little time to complete, so it might be considered as a suitable choice for screening and severity assessment.

### 5.2.8 Centre for Epidemiological Studies Depression Scale (CES-D)

The CES-D is a 20-item self-report inventory providing a measure of depression based on the frequency of symptoms experienced over the past week <sup>85</sup>. It has a maximum score of 60 and the recommended cut-off is a score of 16. It emphasises the affective aspects of depression with eight items devoted to assessing this area. It also includes four cognitive items, as well as items covering the somatic aspects such as sleep disturbance and appetite loss, and interpersonal difficulties associated with depression. It is not written to any current diagnostic criteria, however, and so requires validation against DSM-IV, for example. Its emphasis on symptom frequency gives it a slightly idiosyncratic flavour, although severity and frequency are highly correlated. Despite these limitations, it has been widely used in cancer research, probably because it is relatively brief, easy to complete and simple to score. Shorter versions are also available.

A group of 117 women undergoing treatment for breast cancer was compared with a group having no history of cancer in a study by Hann *et al.* <sup>86</sup>. The patient group had higher scores on the CES-D and their scores were correlated with other measures of fatigue, anxiety, and global mental health functioning. Although they did not compare its performance with that of structured diagnostic interview-derived diagnoses, the authors asserted that this evidence supported the validity of the CES-D as a valid assessment tool for depression in this population.

In sum, the CES-D has relatively good empirical support, and is convenient to use, although its specific characteristics and lack of direct validation suggest that it has limitations as a suitable choice for a screening instrument.

### 5.2.9 General Health Questionnaire (GHQ-60/28)

The GHQ is available in several different versions, ranging from 60 to 12 items in length <sup>87</sup>. It is a self-report inventory, and the 60-item form provides a highly reliable index of general distress as a state rather than trait measure. It does not provide clinical diagnoses. Although it is more cumbersome and takes longer to administer than many other scales of a similar type, the GHQ-60's strength is that it was designed for use with non-psychiatric populations. It is well accepted by researchers and is widely adopted for use in larger studies especially those examining prevalence of distress in different populations. Potential users should note that two scoring methods are available and care should be taken when comparing raw scores across studies.

A 28-item version is available that provides subscores profiles on specific factors of *somatic symptoms*, *anxiety*, *social dysfunction* and *severe depression*. It is probably the most widely used version of the GHQ,

according to its authors, permitting comparisons between studies. The same two methods of scoring (referred to as the Likert and the GHQ scoring methods) are also used with the 28-item version, so again care needs to be taken when interpreting raw scores.

A study by Hughson *et al.*<sup>88</sup> assessed the performance of the General Health Questionnaire (both the 60- and 28-item versions) with 75 patients receiving chemotherapy for early breast cancer. They compared different cut-off scores with diagnoses derived from the Present State Examination. Receiver Operating Characteristic (ROC) curves were used to graphically identify the most appropriate thresholds. In both cases, the recommended cut-offs had to be doubled to maximise case identification (from 12 to 24 for the 60-item version and from 5 to 10 for the 28-item version). The authors concluded that the questionnaire (and its subscaled version) provided useful measures of mood and social functioning in women undergoing chemotherapy following mastectomy. They also asserted that there seemed little to choose between the two versions, as screening tools, and using the recommended cut-offs would ensure that also no cases were missed. The same researchers used the GHQ to follow up 89 mastectomy patients two years after surgery<sup>89</sup>. They found prevalence rates of clinically significant depression and anxiety (excluding adjustment disorders) of no more than 10%, although problems were more prevalent among younger respondents than those over the age of 50. Other psychosocial problems were more severe than the mood disorders.

The specific subscales of the GHQ-28 facilitate studies of particular disorders. For instance, Tjemsland *et al.*<sup>90</sup> followed, for a year, 106 women after breast cancer surgery for indications of post-traumatic stress (PTSD) symptoms. PTSD is a form of anxiety disorder that has recently been recognised as risk for breast cancer patients. A year after surgery, their GHQ-28 scores indicated 12% of patients were likely to have PTSD. Of further interest, is the finding that the diagnosis was associated with impaired psychological functioning in the year before surgery and with the personality factor of high emotional reactivity.

Together, these results suggest that the GHQ-60 might have some merit as a screening tool in breast cancer populations. Although it is more cumbersome than some others are, it provides a highly reliable score representing severity of distress. It is used extensively in large studies, is familiar to researchers in this field, and appears to be acceptable to women with health problems. The 28-item version might be useful if a profile of subscales is required and it permits comparison with a substantial body of previous work. It is widely accepted for use with medical populations, including breast cancer, and it is well validated. Unfortunately, the GHQ is copyrighted and is relatively expensive to purchase, so costs might be a factor in its selection.



### 5.2.10 General Health Questionnaire (GHQ-30/12)

The GHQ-60 has been criticised because of its length. There were strong implications in earlier studies that many of the items were redundant and although they increased the reliability of the score, could perhaps be omitted without loss of validity <sup>91</sup>. Shorter versions of the scale have thus been developed, including 30-item and 12-item versions. They are both reviewed here as they share many attributes. The 30-item scale was developed first and provides an index of distress severity without reference to any somatic items. The scores can be compared with cut-off scores derived from a wide selection of clinical populations, as the 30-item version is the most comprehensively validated form of the GHQ, according to its authors. The 12-item version is even shorter but it presents a convenient screening tool that can be administered in less than two minutes. It does not refer to somatic items but retains the reliability and validity of the longer version.

Maunsell *et al.* <sup>92</sup> employed a shorter version of the GHQ to screen for psychological distress in recently diagnosed, non-metastatic breast cancer patients. Scores of 5 or more triggered follow-up calls by the patient's social worker offering support and counselling. Outcomes were assessed with the Psychiatric Symptom Index and over time a significant decrease in distress levels was recorded but there were no significant differences between the treatment and control groups. In a different study, problems of generalised anxiety disorder and major depressive disorder (DSM-III criteria) in 513 patients with cancer (18% of whom had breast cancer and 37% had stable disease) were assessed with several screening tools, including the GHQ-28 <sup>26</sup>. The GHQ did not perform as well as the HADS and the RSCL, failing to meet the minimal criteria for accuracy set by the authors. However, the very narrow range of diagnoses investigated in the study can probably account for these results (see the review of the HADS, for a comparison).

A recent Australian study employed the GHQ-12 in an investigation of specialist breast nurses' role in assessing and responding to women's initial Psychosocial risk factors and ongoing psychological and emotional needs following surgery for breast cancer <sup>3</sup>. Two months after diagnosis, 36% of the women had scores above the GHQ-12 cut-off score for a likely disorder. This figure is consistent with morbidity estimates reported in similar studies <sup>32</sup> but is lower than estimates derived from a structured diagnostic interview <sup>1</sup>. When the women had multiple risk factors, detection rates by the specialist breast nurses was as high as 85%. Overall, the detection rate for reporting any psychological need was 71%. The incidence of false positives is not reported, so it is impossible to calculate the overall accuracy of the specialist breast nurses compared with the base rate of high scores on the GHQ-12. However, the study does confirm the validity of the measure and indicate that the GHQ-12 can be considered as a screening tool with this population.

Studies have explored the validity of the GHQ with different clinical populations. For example, Lee *et al.*<sup>93</sup> compared the 30-item GHQ and the Edinburgh Post-natal Depression Inventory with diagnoses derived from the SCID (DSM-III-R) in women who had recently had a miscarriage. The GHQ took longer to perform but was good at detecting depression and anxiety and had better psychometric properties than the EPDS. Similar studies with breast cancer patients, comparing the relative characteristics of the GHQ to other widely used questionnaires, would be beneficial.

Together, the results suggest that the GHQ-30 might be suitable a screening tool in breast cancer populations. It is brief, easy to administer, and it provides an index of psychosocial distress that can be compared to previous studies. The 12-item version might be suitable for use as a screening tool for general distress where a very quick and easily administered screening tool is required. Apparently, reliability and validity do not suffer because of its brevity. Both are widely accepted for use with medical populations, including breast cancer. Like the longer versions, both the GHQ-30 and GHQ-12 are copyrighted and relatively expensive to purchase, so costs again might be a factor in its selection.

### **5.2.11 Hamilton Rating Scale for Depression (HRSD)**

The HRSD is a clinician-completed rating scale for depression<sup>94</sup>. It has widespread acceptance in psychiatric settings as an assessment tool and severity measure for major depression. The research evidence attesting to its validity and reliability with in-patient psychiatric populations is very solid. It is particularly valued in that context because of its emphasis on somatic aspects of the disorder. It has been used as an outcome measure of clinical trials for anti-depressant medication in women with advanced cancer experiencing depressive symptoms<sup>95</sup>. However, that strength is a relative drawback in medically ill populations. As well, its administration is extremely cumbersome. It calls for experienced and well-trained clinicians to make judgements about the presence of specific signs. Ideally, two clinicians make independent observations to ensure reliability of the judgements. This is clearly impractical as a method of screening breast cancer patients, especially when a large proportion will correctly be identified as true negatives. In terms of further assessment after screening has yielded a possible case, it might have a wider role to play, and workers in this area might find it useful to learn the scoring criteria. However, in most circumstances, self-report methods would have a practical advantage over the HRSD. Consequently, it is not suitable as a suitable screening tool for depression in a breast cancer population.

### 5.2.12 Hospital Anxiety and Depression Scale (HADS)

The HADS was developed from its predecessor, the Leeds Scale for Depression and Anxiety, specifically for use with medically ill patients <sup>96</sup>. To achieve this aim, the developers omitted items related to somatic problems, which potentially could be confounded with physical illness. It is a short, 14-item self-report scale and provides scores on two dimensions, depression and anxiety. The seven depression items are: *enjoyment of things, having a sense of humour, cheerfulness, feeling slowed down, loss of interest in appearance, looking forward to enjoying things, and enjoyment of books, radio, or television*. The seven anxiety items comprise: *feel tense and wound up, feel something awful is about to happen, have worrying thoughts, sit at ease and feel relaxed, have 'butterflies' in stomach, feel restless, have sudden feelings of panic*. The authors compared scores on these self-report scales with their own ratings of depression and anxiety severity rather than with formal diagnoses. From their analyses, they recommended cut-off scores on each of the two scales of 11 for 'probable' caseness.

However, many researchers have found it necessary to adjust these figures for optimal performance. Some have recommended that the scores be combined to create a distress index, and that claimed this is more reliable than either score alone. The anxiety subscale appears to be more reliable than the depression subscale. This is perhaps because the latter emphasises the symptom of anhedonia, or loss of pleasure, that often characterises the diagnosis of major depression. The authors' rationale for deliberately emphasising this symptom, which is taken to be an indication of "hypomelancholia", was that such problems are most amenable to drug treatment <sup>96</sup>. Unfortunately, this assertion had not been supported empirically <sup>97</sup> and the emphasis has two adverse effects. First, it means the HADS does not align well with the criteria for DSM-IV diagnoses of depression <sup>79</sup>. Problems such as self-criticism and pessimism are not assessed (see table 1). It also means that many cases of minor depression or adjustment disorder with depressed mood will simply be missed, if the patients do not acknowledge anhedonia. These cases possibly may not be as amenable to anti-depressant medication, as the authors contended, but excluding them precludes the use of any form of intervention.

Because of its initial acceptance as a useful screening tool for medical populations, the HADS has received a great deal of attention in many different countries and populations. Results have consistently shown that cut-off scores need to be adjusted with different populations. Razavi <sup>98</sup> studied a French version of the HADS as a screening tool for cancer in-patients. They found that cut-offs had to be adjusted for this population. For major depression, a cut-off of 19 on the combined scales gave sensitivity of 70% and specificity of 75%. For both adjustment disorder and major depression, a score of 13 rather than 11 gave optimal figures of 75% for both indices. In a similar study, Ramirez *et al.* <sup>99</sup> prospectively studied diagnostic accuracy in women undergoing operations for breast cancer. They

compared scores on the HADS with Present State Examination-derived diagnoses based on the relatively unusual Bedford College criteria. Pre-operatively, at 3 months and at 12 months post-operatively, the optimal threshold for the HADS total score was 11. This figure compares poorly with the recommended cut-off score of 11 for each of the two subscales.

Spinhoven *et al.*<sup>100</sup> validated the HADS against Present State Examination-based diagnoses in a Dutch population. The total score showed a better balance between sensitivity and positive predictive value than the depression subscale in identifying cases of unipolar depression as defined by ICD-8. Holtom and Barraclough<sup>101</sup> explored the HADS in a sample of 100 palliative care patients, mainly people diagnosed with cancer. Of the 32 who scored higher than 11 on the depression sub-scale, 24 were judged to need antidepressants. Half of those patients with borderline scores (between 8 and 11) required antidepressant medication. Morasso<sup>67</sup> considered both the HADS and the PDI as screening tools for women with breast cancer. Both showed comparable performance before chemotherapy began but the PDI performed better after chemotherapy had commenced. Both had relatively poor sensitivity at the recommended cut-off points. Dropping the cut-offs improved sensitivity but also increased the number of false positives.

Work by Ibbotson *et al.*<sup>26</sup> reflects the specific strengths of the HADS. These authors studied the accuracy of three screening instruments, including the HADS, in identifying Generalised Anxiety Disorder and Major Depressive Disorder in 513 cancer patients with mixed diagnoses and stages of disease. The HADS was the most accurate of the three questionnaires. Given the item content of the HADS, noted above, these results are hardly surprising.

Lloyd-Williams *et al.*<sup>12</sup> conducted a similar study with palliative care patients. They used Present State Examination-derived diagnoses and found that, when used alone, the subscales showed poor accuracy. With the recommended cut-off of 11 on the D scale, sensitivity was 54% and specificity 74%. For the Anxiety scale, with the same cut-off, the figures were 54% and 82% respectively. The combined scale score with a cut-off of 19 gave optimal sensitivity of 68% and specificity of 67%. The authors identified the problem of item content as possibly responsible for the poor performance. They also noted that previous studies in patients with advanced disease had also found the combined scale score to be most useful. They suggested that the HADS might perform differently in patients with advanced disease and concluded that the separate scales were not valid for this population, recommending against its use as a screening tool in that field.

Payne *et al.*<sup>84</sup> evaluated the HADS, the BSI and a Visual Analogue Scale as self-report instruments for screening psychological distress in 275 women with breast cancer. Over half had stage IV disease. Structured Clinical Interviews for DSM-III-R diagnoses were conducted on a subset of 31 of these women; 58% received diagnoses, most either adjustment disorder with depressed mood (16%) or major

depression (13%). All three scales were significantly correlated, the largest ( $r = .68$ ) being that between the HADS and BSI. Scores on the HADS were significantly higher for those with current DSM diagnoses. In terms of diagnostic accuracy, the total HADS score (cut-off of 10) showed sensitivity of .36 and specificity of .82. The authors selected the HADS as a screening tool for their setting, because of its brevity, ease of use and strong correlation with the more complex BSI-53.

Evidence to support the convergent validity has also been reported in several studies. For example, Watson *et al.*<sup>102</sup> demonstrated that, as predicted, women with breast cancer who had high scores on the HADS subscales also tended to have high scores on the helplessness scale and the anxious preoccupation scale, as well as low scores on the fighting spirit scale of the Mental Adjustment to Cancer (MAC) inventory. The subscales were also appropriately correlated with the anxiety and depression scales of the Courtauld Emotional Control Scale.

A recent prospective study of women with early breast cancer, investigated the ability of the HADS to detect psychiatric morbidity<sup>103</sup>. A clinical interview, using a shortened version of the Present State Examination to derive DSM-III diagnoses, identified 132 of the 266 (49.6%) women as having anxiety disorders and 99 (37.2%) of the women as having depression. The HADS-A and HADS-D scales, with recommended cut-offs of 11, correctly identified 24.2% of the anxiety cases and 14.1% of the depression cases respectively. Lowering the threshold values increased sensitivity but decreased specificity. Hence, the net result of using lower cut-off scores would have been greatly increased staff time devoted to assessing and ruling out false positives. The combined scores fared no better and the researchers questioned the use of the HADS as a research or screening instrument with this population. In particular, they noted that the items selected for the depression subscale might be inappropriate for screening in this population. This point was discussed in more detail earlier in this section.

A similar study<sup>104</sup> was conducted in Australia with a sample of 303 women with early stage breast cancer, as described earlier. DSM-IV diagnoses were derived from the Monash Interview for Liaison Psychiatry (MILP), and the patients completed the HADS by self-report. Both scales performed poorly in identifying true diagnoses and the combined scale did not improve the performance in any substantial way. The authors noted the problem with item content relying so heavily on anhedonia items, and suggested that other self-report measures might make better screening tools.

Taken together, the literature suggests that, despite its widespread popularity, the HADS might only have a limited role as a screening tool for women with breast cancer. The anxiety subscale appears to be more valid than the depression subscale, which does not match current diagnostic criteria and might under-report adjustment disorders, especially if patients do not experience anhedonia. The

authors deliberately emphasised this symptom, it was noted earlier, because they believed those cases are most amenable to anti-depressant medication. Given the need to identify women who will also respond to psychotherapy and counselling support, its use might result in failure to recognise a large group of women who, it has been argued, are likely to benefit from psychosocial intervention. Thus while the HADS might be suitable when screening for anxiety in a breast cancer population, the evidence suggests that it is not suitable when screening for depression. Hence, the scale is not suitable for use as an overall screening tool for depression and anxiety.

### **5.2.13 Health Survey Short Form (SF-36)**

The Medical Outcomes Study Health Survey Short Form (SF-36) is a 36-item self-report inventory providing summary scores on both mental and physical health <sup>105</sup>. As it includes subscales including pain and role limitations, it is more a measure of quality of life than distress. Raw scores on the SF-36 are normed against a general sample and transformed scores of between 0 and 100 are derived. Higher scores are indicative of better mental and physical functional health. The instrument is often used in large-scale epidemiological and health outcomes research, as it is well accepted by respondents, is completed relatively quickly and is easy to score using a computer-based algorithm. Hand scoring is more difficult, however, and so its use as a clinical screening tool is limited as a result. The growing use of touch screen computers, plus its ease of availability and free distribution to non-profit organisations balances this consideration somewhat.

Ganz *et al.* <sup>106</sup> employed the SF-36 to investigate the long-term effects of adjuvant therapy on quality of life, sexual functioning and symptoms in 1096 breast cancer survivors who had been diagnosed with early stage breast cancer between 1 and 5 years earlier. For the SF-36, there were no significant differences on the subscale scores except for the physical functioning subscale; women receiving no adjuvant therapy had the highest functioning. There were no significant differences in depression scores or mental health composite scores among four treatment groups and approximated scores from the normal population of healthy women. The authors concluded that, overall, breast cancer survivors in their sample functioned at a high level, similar to healthy women without cancer. However, compared to survivors with no adjuvant therapy, those who received chemotherapy had significantly more sexual problems, and those treated with tamoxifen experienced more vasomotor symptoms.

The same research group recently reported about a very large national study - the health-related quality of life component of the National Surgical Adjuvant Breast and Bowel Project Breast Cancer Prevention Trial, comparing tamoxifen and placebo groups <sup>107</sup>. Their report covers the baseline and the first 36 months of follow-up data for 11,064 women on several measures,

including the SF-36. No differences were found between placebo and tamoxifen groups for the summary physical and mental scores. The mean number of symptoms reported was consistently higher in the tamoxifen group and was associated with vasomotor and gynaecologic symptoms. The authors argued that women need to be informed of these problems associated with tamoxifen use but added that weight gain and depression, two clinical problems anecdotally associated with tamoxifen treatment, were not increased in frequency.

In a smaller scale study <sup>108</sup> the SF-36 was used along with other scales to examine differences in women's physical and social well-being, based on the phase of their breast cancer. Differences were found across phases of disease on various subscales. While individuals with recurrent disease often experienced more difficulties with their well-being overall, women newly diagnosed and in the adjuvant group experienced more difficulties in certain areas of well-being.

Overall, it appears that, for large-scale studies with ample computing resources, the SF-36 might be a suitable choice as a scale for assessing psychological distress. It has a sound track record in such studies, and using it would obviously aid comparisons between different samples. However, in smaller scale, or clinical applications, it is probably not a suitable scale to choose. Shorter versions are available and might be worth considering.

#### **5.2.14 Health Survey Short Form – 12 (SF-12)**

The Medical Outcomes Study Health Survey is also available in a shorter version comprising 12 items. It yields summary scores on both physical and mental health outcomes that are comparable with those from the SF-36 although with less precision, as this characteristic is a function of the overall length. Items are drawn from the same domains of health as those in the SF-36 and correlations between the two scales are high. Because it is easy to administer, taking only two to three minutes to complete, the scale is widely used as part of bigger condition-specific surveys.

The SF-12 is potentially a suitable choice for use as a screening instrument, particularly if a broad quality of life assessment is contemplated. However, validation with breast cancer populations has not been demonstrated at this stage. Information about the scale and its content is available free of charge to bona fide researchers from the web site listed in table 4.

#### **5.2.15 Health Survey Short Form – 8 (SF-8)**

The Health Survey Short Form – 8 provides an even shorter option than the 12-item version. However, unlike the SF-12, it does not share the same item content with the SF-36, which may be a

disadvantage in some applications. Four of the eight health domains covered by the longer scales are based on single items, which limits the reliability of the measure. Therefore, the best application for scale is probably in larger scale surveys where statistical precision and power of the tests are achieved with sample size rather than reliability. For applications requiring greater reliability, such as screening individual patients, the authors recommend the longer versions of the scale.

Given the relative paucity of information about the scale, it must be concluded that, at this time, the SF-8 is not suitable for use as a screening instrument for women with breast cancer.

### **5.2.16 Mental Health Inventory (MHI-5)**

The Mental Health Inventory five-item version (MHI-5) was developed by the creators of the 18-item form used in the Medical Outcomes Survey project, according to Berwick *et al.* <sup>109</sup>. These authors compared the performance of the MHI-5 to the GHQ-30, the SSI-28 and the original MHI-18 against DSM-III-R diagnoses. They demonstrated that the sensitivity and specificity of the short scale was at least as good as those of the longer scales, encouraging them to conclude that “short is sweet in psychiatric screening” (p. 173). They acknowledged that this result is not in itself newsworthy, as the advantages of short screening scales have been demonstrated previously, and stressed the blurring of distinctions between screening and simply taking a clinical history. Good questioning can probably elicit as much information as a short self-report scale, they concluded. They also anticipated the general criticism of short non-specific distress scales that do not provide specific classifications. After checking the diagnostic accuracy of the scale against several different diagnostic categories, they concluded that screening with the MHI-5 could identify common symptom pathways for a number of discrete categories that may exist. One item in particular proved to be an excellent non-specific indicator of morbidity. They noted that “perhaps the simple confession that one is downhearted and blue a good deal of the time is ... a pregnant signal” (p. 175) and suggested that it might be a “sorting device” (p. 175) for filtering patients requiring further investigation.

The items that comprise the MHI-5 (all preceded by “How much of the time, during the last month, have you...”), and the original scales they are drawn from in parentheses, are: 1... been a very nervous person?” (anxiety); 2... felt calm and peaceful?” (general positive affect); 3... felt downhearted and blue?” (depression); 4... been a happy person?” (general positive affect); 5... felt so down in the dumps that nothing could cheer you up?” (behavioural/emotional control). Respondents indicate the duration on a six-point scale ranging from “all of the time” to “none of the time”. Scores can thus range from 0 to 25.



The MHI-5 scale deserves further validation, to see if the results of Berwick *et al.* <sup>109</sup> can be replicated. However, at this time, it is probably not to be considered suitable as a screening tool nor for indicating severity of psychological distress in women with breast cancer.

### **5.2.17 Montgomery-Åsberg Depression Rating Scale (MADRS)**

The Montgomery-Åsberg Depression Rating Scale (MADRS), which is completed by clinicians assessing the patients, was designed specifically to be sensitive to changes in severity <sup>110</sup>. It is thus likely to be most useful in controlled outcome studies where careful assessment by clinicians of all patients involved is justified. Items include: reported sadness; apparent sadness; suicidal thoughts; inability to feel (anhedonia); lassitude; difficulty in concentration; loss of appetite; insomnia and psychic anxiety (inner tension).

The item content suggests two limitations: first, that some aspects of anxiety are introduced; and that the scale was constructed from a narrower concept of depression than other scales such as the Hamilton Rating Scale for Depression <sup>111</sup>. These researchers investigated the concurrent validity of the MADRS compared with psychiatric patients' self-reports of depression and anxiety, as measured by the HADS and the Irritability-Depression-Anxiety Scale they had developed. They found that the MADRS was significantly correlated with the two self-report depression scales but had lower correlations with the two self-report anxiety scales. Further, they calculated that removal of the anxiety-related items from the MADRS did not impair its overall performance but did improve its ability to distinguish depression and anxiety and so recommended that the shorter version be used in future. Based on these results, they concluded that it was a "valid depression scale which is capable of distinguishing depression from anxiety in clinical settings" (p. 19S).

Research since then has contributed to the construct validity of the rating scale. In a study of the relationship between psychological factors and immunological response in women with breast cancers, the MADRS was used to assess depression <sup>112</sup>. Changes in immunological status from pre- to post-operative condition were moderated by depression levels (decreased) and by intrusive anxiety (increased). Recently, using the MADRS, depression levels were measured in 26 patients with metastatic cancers (mean age 58.2 yrs) before and after treatment with Interleukin-2 and Interferon-alpha <sup>113</sup>. Depression scores, as measured by MADRS were elevated by treatment with Interleukin-2 with or without the latter drug, but not by Interferon-alpha treatment alone.

The MADRS has not been validated fully with breast cancer patients at this stage. One small study has been performed that supports its use as a screening tool. Jenkins *et al.* <sup>39</sup> compared scores on the MADRS with diagnoses derived from CIDI interviews and clinicians' ratings in a sample of 22

women with a local recurrence of breast cancer. Ten (45%) met criteria for depression and anxiety. Results suggested that the MADRS did not differentiate anxiety but could distinguish depression. Nevertheless, despite its relatively unknown characteristics, the MADRS has also been used as an outcome measure in several studies. These include a recent paper by Pezzella *et al.*<sup>114</sup> comparing two anti-depressant medications in the treatment of depression in women with breast cancer. It has to be concluded that further validation studies involving the MADRS would be welcomed.

In sum, it appears that the use of the MADRS as a rating scale for depression appears promising, especially as a sensitive measure of outcome in intervention studies, but it has limited suitability as a screening tool. As it is a relatively new instrument, further validation studies, comparing its performance against standard diagnostic criteria, are recommended, so that its full value can be determined.

### **5.2.18 Psychological Adjustment to Illness Scale (PAIS)**

The Psychological Adjustment to Illness Scale self-report version<sup>115</sup> is a 46-item inventory producing a total score and seven subscales. These are: Health Care Orientation, Vocational Environment, Domestic Environment, Sexual Relationships, Extended Family Relationships, Social Environment, and Psychological Distress. As these titles suggest, the PAIS is somewhat closer to a quality of life scale, as it provides a relatively comprehensive assessment of adjustment in a number of domains. The authors reported that it was validated on several patient groups, including several with different forms of cancer. This point is a distinct advantage, given concerns about other scales potential confounding of medical condition and psychological functioning. It correlated well with scores on the SCL-90 and with clinicians' ratings of adjustment. However, it does not provide specific indicators of psychiatric disorder (such as norms for clinical groups) and thus is not suitable as a screening device. Hence, its diagnostic accuracy compared with a psychiatric interview has never been investigated. As an indicator of broad adjustment, it is far more likely to be used as an outcome measure in intervention studies or in longitudinal observation studies.

For example, the PAIS was used as an outcome measure in a RCT study of adjuvant psychotherapy, incorporating 156 patients with mixed cancer diagnoses<sup>116</sup>. Participants completed the PAIS at baseline and at 2 and 4 months post intervention. Patients randomly assigned to the psychotherapy condition showed significantly greater improvement than the control group on most of the adjustment subscales. They continued to show improvement and the difference had increased at the second follow-up. Gilbar<sup>49</sup> followed up breast cancer patients eight years later. Women who had died in the intervening period or had developed bone metastases had more severe distress levels, as measured by the PAIS, than did the women who had no evidence of disease. In a study of psychological morbidity associated with lymphoedema, Tobin *et al.*<sup>41</sup> found that women

with breast-cancer related arm swelling experienced poorer adjustment to illness, as assessed by the PAIS, than matched controls without arm swelling.

In summary, the PAIS can provide a useful profile of patients' adjustment in several key areas of functioning and might serve as a broad index of quality of life. It is probably best suited to regular monitoring of patients' psychosocial adjustment, especially in contexts where outcomes to intervention need to be tracked over time, rather than as a method of identifying psychiatric disorder. However, its use as a screening device is limited and it should probably not be considered suitable for this purpose.

### **5.2.19 Rotterdam Symptom Checklist (RSCL)**

The Rotterdam Symptom Checklist was devised as a research tool, to measure psychiatric symptoms reported by cancer patients. It is one of the few such instruments created specifically for this population<sup>117</sup>. It is a multidimensional scale designed to assess quality of life in general, and includes an 8-item scale to assess psychological distress. A cut-off score of 11 is usually taken as the threshold for identifying possible cases.

Hall *et al.*<sup>103</sup> examined the ability of the RSCL to correctly detect psychiatric morbidity in women with early breast cancer. Psychiatric diagnoses were based on DSM-III criteria and derived from Present State Examination interviews. The psychological distress scale correctly identified 31% of the psychiatric disorders. Of the 144 cases identified using the PSE, the RSCL agreed on 44 of those cases and misclassified the other 100 as false negatives. Specificity was better, at 96%, with only 5 of 123 negatives misclassified as false positives. Positive predictive value – the likelihood of a score above cut-off being a true diagnosis – was 90%, with 44 of the 49 scores greater than or equal to 11 correctly identifying true cases. The authors concluded that while the scale was more accurate than the combined HADS for screening overall psychological distress, sensitivity of the RSCL at the recommended cut-off was too low to be acceptable. Raising sensitivity by reducing the threshold greatly increased the number of false positives, which created extra burden for staff required to assess these individuals. They attributed the discrepancy in part to the unusually short period (three days) for psychological distress referred to by the RSCL. This is much shorter than the two-week period allowed in the DSM criteria.

A study of patients with advanced breast cancer by Hopwood *et al.*<sup>118</sup> also examined the accuracy of the RSCL. A psychiatrist using DSM criteria assessed eighty-one patients with advanced disease. It was found that 20 (25%) met criteria for depression or anxiety, and a further 11 (14%) had a 'borderline mood disorder'. Sensitivity and specificity, at .75 and .80, were optimal at the

recommended cut-off of 11. Misclassification occurred for a total of 17 cases, 12 false negatives and 5 false positives. The authors concluded that the RSCL performed reasonably well as a screening instrument but acknowledged that its inaccuracy implied that refinement was necessary. In addition, it is worth noting that the sample was preselected from a much larger outpatient group to ensure roughly equal proportions of cases with high and low scores on the scale. This tactic, while increasing the number of potential cases in sample, would have affected the sensitivity and specificity calculations in undetermined ways, so the results should be treated with some caution.

Ibbotson *et al.*<sup>26</sup> compared the performance of three self-report questionnaires in identifying diagnoses of Generalised Anxiety Disorder and Major Depressive Disorder (DSM-III diagnoses). The prevalence rate of the two disorders was 17%. Patients were 513 individuals with mixed diagnoses and stages of cancer. With a threshold score of more than 7, the RSCL was the second-most effective screening tool overall, performing only slightly below the HADS in terms of sensitivity, specificity and positive predictive value. It did not identify depression very well in those who were essentially free of disease but was best at identifying depression in those with progressive disease. The fluctuating results with different patient groups are worth noting by those considering the question of screening tool selection. The results reinforce the point that local factors, such as base rates and patient characteristics, must be considered in the decision. The authors recommended the use of either the HADS or the RSCL as a screening tool, but they emphasised the fact that they had specifically targeted Major Depression and Generalised Anxiety Disorder, while ignoring adjustment disorders. This limitation has to be taken into account when assessing the value of the two questionnaires as screening tools.

In summary, the RSCL offers advantages in that it is part of a larger scale specifically designed to assess cancer patients' quality of life in several domains, only one of which is psychological distress. Thus, it can provide a richer, more detailed picture of psychosocial adjustment in breast cancer patients than a scale devoted solely to this one dimension. It would be particularly suited for use as an ongoing assessment tool, monitoring changes in quality of life over time. Its major drawbacks are that it uses a non-standard period within which to probe for distress, making it difficult to compare the results with standard diagnostic criteria. Consequently, the sensitivity and specificity of the scale is perhaps suspect and even those researchers recommending its use acknowledge that it probably needs some refinement. Thus, at this stage, it should not be considered suitable as a screening tool for use in a breast cancer population

### 5.2.20 State-Trait Anxiety Inventory (STAI)

The State-Trait Anxiety Inventory (STAI) consists of two, 20-item scales<sup>119</sup>. One is designed to assess current levels of arousal, worry, and fear. This concept is referred to as state anxiety. The other is intended to assess the respondent's general tendency to experience these reactions. It is referred to as trait anxiety. Each item is responded to on a four-point scale, and two scores are derived by summing the appropriate items in each scale. The STAI is widely used in psychological research to assess anxiety and so has an extensive literature attesting to the reliability and validity of both scales. Originally normed with high school and university students, it has since been used with a variety of populations and has norms for specific samples that are readily obtainable.

Howard *et al.*<sup>120</sup> used the STAI to study the psychological reactions over time of women with breast symptoms. They showed that state anxiety decreased whatever the diagnosis was received but that women with benign growths who were required to have further tests before they received their diagnoses were most likely to experience sustained periods of acute anxiety. This study illustrates the ability of the STAI to provide valuable information about rapidly fluctuating levels of acute anxiety. The state scale is an excellent tool for this task.

Long-term survivors of breast cancer participated in a study by Saleeba *et al.*<sup>73</sup>. These investigators employed the STAI, as well as the BDI, to assess the survivors' distress levels and compared their scores with those of a control group comprising women who had undergone breast screening. The survivors, who had been disease-free of five years or more, and had no history of psychiatric disorder, had significantly higher scores on both the depression and the anxiety scales. The authors indicated that further research would be necessary to establish the degree to which other psychosocial factors contributed to the persistence of distress in long-term survivors. While this study is important, in that it provides evidence of chronic distress as a consequence breast cancer, it can be criticised for, among other things, its use of the STAI as the measure of anxiety reactions. Trait anxiety is a personality construct, most closely associated with neuroticism. It is not an index of anxiety disorder or severity. Neuroticism is a known risk factor for anxiety disorder in women with breast cancer (see earlier sections) but the two are not equivalent. High trait anxious women might have self-identified as 'survivors' and the sample might not have been representative. High state anxiety scores equally tell very little about anxiety disorders. State anxiety might have risen as a response to taking part in the assessment, rather than indicating an underlying disorder.

These studies illustrate the strengths and weaknesses of the STAI as a screening tool. The trait anxiety scale asks how one generally tends to feel; hence, it provides a more dispositional or personality-related index of a person's tendency to experience anxiety. This personality dimension is a risk factor for psychological distress in women with breast cancer, so the STAI might be a scale

worth considering in situations where at-risk patients are assessed. The state anxiety scale asks how one is feeling right now; hence it is very reactive to situational factors that might be creating arousal. Even the fact that one is completing a series of questionnaires can influence responses on this scale. This makes it very helpful for assessing change over very brief periods. For example, it is an excellent choice for assessing anxiety before and after painful procedures. However, neither scale really captures the intermediate period, of one week to one month, which is more likely to be indicative of an anxiety disorder. Thus, persistent episodes of anxiety-related psychological distress are likely to be inaccurately assessed. Thus, the STAI is probably not suitable for use as a screening tool in a breast cancer population.

## **6 CONCLUSIONS**

This report draws several key conclusions relating to the identification of psychological distress in women with breast cancer, which are summarised below. The conclusions are considered in the context of two facts that emerged from the broader literature reviewed in the earlier part of the report. The first is that psychological distress is very common among women with breast cancer. There are probably times in the course of the illness, its treatment, the recovery phase, and possible recurrence, when women are more vulnerable to distress. Yet, there is never a time when women are immune to the debilitating effects, so appropriate intervention is required when distress is identified. Second, these problems, especially depressive mood disorders, are not identified particularly well. Many cases go unrecognised and so are not offered potentially beneficial interventions. The problem of high prevalence yet underreporting of psychological distress can be resolved, to some extent, if we are able to improve the identification of the women in this predicament.

### **6.1 Risk factors associated with psychological distress.**

There are predictive factors associated with distress in women with breast cancer<sup>6</sup>. A prior history of affective disorder is a known risk factor. Certain premorbid psychosocial characteristics, for example, high trait anxiety or prior exposure to trauma, have been identified as risk factors. Being younger, poorer, having less formal education, and lacking social support or having more dependents under the age of 21 all contribute to the risk of developing distress reactions in women with breast cancer. The extent and stage of disease, as well as the type of treatment received may also be identifiable risk factors. Thus, we have quite extensive knowledge of population-based influences and we can accurately identify that portion of the group who are most likely to be

affected. These factors can be used to identify women who might be at risk of developing psychological distress. When it comes to individual cases, trying to predict who will react adversely is, however, difficult to do accurately. Relying on risk factors alone would mean that many errors of diagnosis could be made. Nevertheless, checking for potential risk factors can contribute to the identification of women likely to develop distress.

## **6.2 Early identification of psychological distress.**

A second way to aid early identification of psychological distress is to increase clinicians' sensitivity to possible cases of psychological distress <sup>6</sup>. One aspect of ensuring this is to improve education about the psychosocial issues facing patients with breast cancer. A key factor is the tendency to normalise distress, with the risk that it might not be recognised as a treatable problem. Appreciating that distress reactions are not automatic consequences of a chronic medical illness, and that prompt intervention can reduce both the burden and the associated consequences, creates a preparedness to intervene on the part of clinicians. If appropriate intervention is available, this change in motivation and intention can have positive benefits for patients.

Early identification can also be aided by improving communication between patients, families and clinicians <sup>3</sup>. While this work has focussed on the role of specialist breast nurses, there are opportunities for all clinicians to improve communication. It can be achieved through providing information about treatment and care, including ideas about communication with other in the treatment team, scheduling regular consultations with women, preferably face-to-face but also by phone, and documenting and following up on evidence of distress. Counselling skills are an invaluable asset in performing these tasks and adopting a supportive interactional style helps facilitate effective communication <sup>121, 122</sup>. They include a preparedness to be open to their concerns and fears, to listen in a non-judgemental way and to react in a calm and helpful manner.

## **6.3 Using screening tools to identify psychological distress.**

While increasing awareness of psychological distress and improving communication can help improve its detection, clinicians can also use screening tools to improve identification <sup>24</sup>. Such measures can provide summary information, based on patients' self-reports, that supplements clinicians' own assessments, contributing to their decision-making. In this manner, screening tools can be an effective adjunct to current clinical care and are potentially an efficient way of improving

detection of distress. If patients are identified as possible cases because of their scores on the screening tools, they should be referred appropriately for further assessment and evaluation <sup>64</sup>.

It is important to note that routinely administered questionnaires in non-psychiatric settings do not necessarily improve detection rates by clinicians (for a systematic analysis, see Gilbody *et al.*) <sup>123</sup>. One way to improve detection is to choose the right screening tool. It has to be brief yet responsive to true cases (high sensitivity), particular only to the disorder under scrutiny (high specificity), and good at discriminating true cases from false positives (high Positive Predictive Value).

If the instrument reflects a particularly narrow definition of distress, then many true cases will be missed, although fewer false alarms will likely be set off. For example, the review revealed that the HADS-D subscale might be acceptable when one is considering only Major Depressive Disorder, yet noted it does not pick up many cases of minor depression, such as Adjustment Disorder with Depressed Mood. As a large proportion of distressed patients will fall into this category, it is clear that a scale such as the HADS-D is not suitable as a screening tool for depression, although the anxiety scale is more acceptable.

If, on the other hand, the screen sets too low a hurdle, then most of the true cases might be picked up but far too many non-cases would be misidentified. The review indicated that the STAI state form might be too sensitive to patients' anxious reactions to the unfamiliar surrounds of the clinical setting and the uncertainty of a novel task. To rely on an inventory such as this as a screen would mean that services would quickly be overburdened with unnecessary referrals for further evaluation.

Other factors influence the choice of screening instrument. The time taken by a patient to complete a routine screen will be important. The effort needed to score the test and interpret the results is a major factor. Cost might also be an issue, as many tests are now copyrighted and are not freely available. Given there are several syndromes that need to be monitored, such as different subcategories of depression and anxiety, the screening tool must either be short enough to be combined with others or be multi-dimensional in order to provide comparative information.

The use of a measure with poor sensitivity and specificity also has implications for clinical trials <sup>103</sup>. If such an instrument is being used as a dependent variable or outcome measure in a trial, then it would adversely affect the number of patients that would have to be recruited to the study. If sensitivity and specificity were both 100%, then, according to those authors, a sample size of 128 would give sufficient statistical power to detect a moderate difference. However, if sensitivity were 60% and specificity 90%, then number required to give the same level of confidence of detecting a moderate effect would be 400! It follows that using an instrument with poor sensitivity and specificity will greatly increase the chance that a clinical trial will fail to detect a real and important



difference between treatments. Hence, an incorrect conclusion might be drawn and a potentially beneficial treatment would go unrecognised.

## 6.4 Choosing a Screening Tool

Bearing these limitations in mind, the conclusion must be that the most suitable choice of screening instruments will depend on the intended use. If it is for a research application, then a lengthier, more detailed measure can perhaps be selected. If the setting is a busy clinic processing many test results for each patient, then a briefer, less complex measure might be a better choice. Added to this issue are questions of item content and appropriate validation, costs and availability. From the review of the selected measures, the relative merits and potential applications of each has been summarised below and in table 5.

**Table 5 Choosing a suitable screening tool.**

<b>Application</b>	<b>Comments</b>
To detect both anxiety and depression, or distress, in a clinical setting.	<p>BSI-18 is a moderately short questionnaire with subscale scores. It is not distributed freely.</p> <p>GHQ-12 is a short but valid scale that provides an index of distress, although not yet widely used with cancer groups. It is not distributed freely.</p>
To detect depression in a clinical setting.	BDI-SF is a short but valid scale for assessing severity of depression. It correlates well with the full BDI scale and is freely available. However, three of the items refer to somatic symptoms.
To detect anxiety in a clinical setting.	The HADS anxiety subscale appears to be a reliable measure of anxious mood and related symptoms. It does not confound anxiety disorder with personality and state manifestations of anxiety.
To provide information about psychological distress in a research project.	<p>GHQ-30 is a longer scale that is validated and widely used in research with clinical populations. There are many normative studies and comparisons can easily be made.</p> <p>BSI-53 is a multidimensional scale, normed and validated in numerous studies, that has wide acceptance in the research community, it is not freely available.</p>

To form part of a research project concerning distress in women with breast cancer.

BDI-PC is a short scale and is validated as a screening tool for depression in primary care patients. It excludes somatic items and correlates with the BDI-II but it needs to be validated with a breast cancer patients. It needs to be purchased.

GHQ-12 requires further validation with breast cancer patients, particularly in regard to demonstrated sensitivity to changes in distress.

#### **6.4.1 Screening tools not considered suitable for these applications.**

For a variety of reasons, including length and demands on staff time or cost factors, the list of tools considered not suitable includes:

- ABS        The Affect Balance Scale. Provides information about affective aspects of distress only.
- BDI        Beck Depression Inventory. A well-established measure of depressive symptom severity but the somatic items are likely to be problematic in chemotherapy and radiotherapy settings.
- BDI-II     Beck Depression Inventory – II. A recently developed version of the BDI that has not been validated for breast cancer populations and needs to be purchased.
- BDI-PC    Beck Depression Inventory – PC. A promising version of the BDI-II for screening primary care patients. It is not validated for use with cancer patients and needs to be purchased.
- CES-D     Centre for Epidemiological Studies-Depression. Although it is well established in epidemiological research, it is less commonly used in cancer studies and its assessment of symptom frequency rather than severity is idiosyncratic.
- GHQ-60    General Health Questionnaire – 60. Too long for use as a screening tool, particularly as the shorter versions are considered equally valid. Needs to be purchased.
- HRSD     Hamilton Rating Scale for Depression. Clinician observation rating scale rather than a self-report inventory. Thus it impractical to use as a screening tool.
- MHI-5     Mental Health Inventory – 5. Too short to be reliable and does not have sufficient range to reflect change in severity.
- MADRS    Montgomery-Åsberg Depression Rating Scale. A promising but not widely used scale, which makes it difficult to compare with other studies and patient groups.

PAIS	Psychosocial Adjustment to Illness Scale. Provides a multi-faceted quality of life profile, rather than a single index of psychological distress. Needs to be purchased.
RSCL	Rotterdam Symptom Checklist. Designed for use with cancer patients and provides a comprehensive profile of adjustment. Uses a non-standard time frame and is thus difficult to compare with other studies.
SF-8	Short Form – 8. Does not appear to provide a reliable index of distress that is at the same time sensitive to change. Needs to be purchased.
STAI	State-Trait Anxiety Inventory. The two scales assess aspects of anxiety that are not necessarily related to mood disorder and distress. The trait scale taps into personality factors and the state scale assesses current affective experience.

#### **6.4.2 Screening tools considered suitable for specific applications.**

Some tools appeared to be suitable for specific applications, such as screening for depression or as research instruments. It might be possible to combine several of the more specific ones to create a suitable screening tool for distress:

BDI-SF	Beck Depression Inventory – Short Form. It is suitable for depression only and possibly contaminated by three somatic items. It is freely available.
BSI-53	The scale is long and scoring and interpretation can be difficult but the profile might be useful in some contexts. It is not distributed freely.
GHQ-30	General Health Questionnaire – 30. A moderately long but widely used measure. While it widely used in research and there are many validation studies from which to draw relevant norms, it is not distributed freely.
HADS	Hospital Anxiety and Depression Scale. Only the anxiety subscale can be considered valid as the depression subscale performs poorly when compared with operationally defined syndromes of depression. Combined with other scales, such as the BDI-SF, it might prove suitable.
SF-36	MOS Health Survey Short Form – 36. Requires a sophisticated computer-based scoring system.
SF-12	MOS Health Survey Short Form – 12. Looks promising but needs further validation with breast cancer patients.

### **6.4.3 Screening tools considered suitable for general applications.**

A short list of tools that appeared to be suitable for general applications, screening for both depression and anxiety or more generally distress, are as follows:

BSI-18      Brief Symptom Inventory – 18. It is moderately short yet has several subscales but it is not distributed freely.

GHQ-12     General Health Questionnaire – 12. A short scale, which is reliable and correlates well with the longer versions but it is not distributed freely.

In conclusion, it is worth reiterating that there is no simple answer to the question, “What is the best screening tool?” All of the measures surveyed are limited in one way or another and most have their own specific strengths. The choice of a screening tool requires careful consideration of the purposes it is to be used for, its inherent limitations, and the role it might play in a comprehensive intervention plan. Developing assessment procedures with these factors in mind will contribute to the ultimate goal of ensuring that appropriate management of distress is an integral part of total care for women with breast cancer.

## **Appendix A Measures identified in the literature search and considered for the review.**

<b>Name of the Measure</b>	<b>Comments</b>
Affect Balance Scale	The ABS is a well-validated and frequently used scale in studies of breast cancer <sup>69</sup> . Examines mood state with both positive and negative dimensions. Included in the main review.
Beck Depression Inventory	A widely-used scale for assessing severity of depressive symptoms in a variety of populations <sup>71</sup> . Less frequently used with cancer populations probably because of the number of somatic items. Included in the main review.
BDI-SF	Short form of the Beck Depression Inventory <sup>75</sup> . It comprises 13 items with only three related to somatic symptoms and was designed for use as a screening instrument for patients in family practice. Included in the main review.
BDI-II	Updated version of the Beck Depression Inventory <sup>78</sup> . It was designed to more closely align with DSM-IV depression. Although not yet widely used in medical settings, it is likely to become one of the standard tools in the depression field. Included in the main review.
BDI-PC	An updated version of the short form of the Beck Depression Inventory <sup>79</sup> . It comprises seven items, none referring to somatic symptoms and was designed for use with medical patients. Included in the main review.
Brief Symptom Index-53	A well validated inventory that provides a profile of distress scores on 9 separate scales and a Global Severity Index <sup>80</sup> . It has been widely used with cancer patients. Included in the main review.

---

BSI-18	A shorter version of the BSI-53, providing scores on three dimensions and the GSI <sup>7</sup> that has been validated against the longer version. Included in the main review.
Cancer Worries Inventory	The CWI assesses the illness-related cognitive concerns of cancer patients. It is positively associated with measures of mood state <sup>124</sup> , and so can contribute to the comprehensive assessment of distress. However, given its specific focus, it was not included in the main review.
Centre for Epidemiological Studies – Depression Scale	A 20-item inventory of symptom frequency <sup>85</sup> . Has been used in a number of studies with breast cancer patients. Included in the main review.
Cooper-Smith Self-Esteem Inventory	The CSI is widely adopted in psychological studies of self-esteem, which is often diminished in distressed cancer patients <sup>125</sup> . Because of its specific focus, it was not included in the main review.
COPE scale	The COPE scale provides a profile of the coping strategies used by patients to manage stressful events. It has been used with cancer patients <sup>83</sup> but it does not provide an assessment of adjustment to psychosocial stressors. It was not included in the main review.
Courtauld Emotional Control Scale	The CECS assesses the emotional expressiveness and has been used with cancer patients and is associated with adjustment <sup>126</sup> . However, it does not provide a direct measure of this construct and so was not included in the main review.
General Health Questionnaire – 60	Constructed as a screening tool for psychiatric disorders in medical patients <sup>91</sup> . It provides scores indicating the severity of distress. Validated with cancer populations. Included in the main review.

---

---

GHQ – 30	A shorter version of the GHQ-60 that offers time advantages and convenience of scoring. Has been used with cancer patients. <sup>127</sup> Included in the main review.
GHQ – 28	A structured version of the GHQ, which provides scores on four subscales. Not widely used in studies of cancer patients. Not included in the main review.
GHQ – 12	A short version of the GHQ-60. Offers an easy-to-administer and score scale that provides an index of severity. Used in several studies with cancer patients <sup>128</sup> . Included in the main review.
Hamilton Rating Scale for Depression	A clinician-completed rating scale for severity of depression that is widely used with psychiatric populations <sup>94</sup> . Included in the main review.
Hopkins Symptom Checklist	The HSC is widely used to assess psychiatric symptoms in different populations. Shorter versions are available and have been used in studies with cancer patients <sup>129</sup> but as it shares a common heritage with the BSI scales, which are extensively covered in the report, it was not included in the main review.
Hospital Anxiety and Depression Scale	A self-report questionnaire designed for use with medical patients, providing scores on two subscales <sup>96</sup> . Widely used with cancer patients. Included in the main review.
Impact of Events Scale	Provides self-reported severity of two PTSD-related symptoms: intrusive thoughts and avoidance. Has been used with cancer patients <sup>130</sup> but its specific focus means it was not included in the main review.
Medical Outcomes Study Health Survey Short Form – 36	Well-developed tool for assessing functional health in large-scale studies <sup>105</sup> . Includes both physical and psychological dimensions. Included in the main review.

---

---

Mental Adjustment to Cancer Scale	The MAC provides a multidimensional assessment of cancer patients' coping styles <sup>131</sup> . However, it does not provide a direct measure of adjustment and so it was not included in the main review.
Mental Health Inventory – 5	Five-item version of the Medical Outcomes Survey <sup>109</sup> . Preliminary evidence offers support for the validity of the MHI for use with cancer patients <sup>132</sup> . Included in the main review.
MMPI	The MMPI assesses a range of psychological state and trait scales. While used in studies with cancer patients <sup>133</sup> , its length makes it unsuitable as a brief measure and so it was not included in the main review.
Montgomery-Åsberg Depression Rating Scale	Completed by clinicians assessing severity of depressive symptoms <sup>110</sup> . Has been validated in a small sample of women with breast cancer <sup>39</sup> . Included in the main review.
Multiple Affect Adjective Checklist	The MAACL provides a profile of patients' self-reported affective states. It has been used in studies with cancer patients <sup>134</sup> but its specific focus means it was not included in the main review.
Profile of Mood States (POMS)	Validated for use with cancer patients against two normative samples <sup>135</sup> . Also available in a shortened version <sup>136</sup> . Examines mood state only, although mood was positively correlated with symptom distress in women newly diagnosed with breast cancer <sup>137</sup> . It was not included in the main review.
Psychosocial Adjustment to Illness	Provides multidimensional aspects of adjustment to illness <sup>115</sup> . Validated for use with cancer patients in comparison with measures of disease impact, adjustment, and coping. <sup>138</sup> . Included in the main review.

---



---

PTSD Checklist	A validated scale for assessing the presence and severity of post-traumatic stress disorder that has been used in studies with cancer patients <sup>139</sup> . As it does not provide a comprehensive index of distress, it was not included in the main review.
Psychological Distress Inventory	A 13-item measure of distress in cancer patients <sup>67</sup> . Developed recently in Italy and is well validated in that language; it has not been validated in English. Not included in the main review.
QLQ-C30	The EORTC Quality of Life Questionnaire cancer-specific module is a 30-item instrument that has been used in studies of breast cancer <sup>1</sup> . It is a general measure of quality of life, so it was not included in the main review.
Rotterdam Symptom Checklist	Specifically designed for use with cancer patients <sup>117</sup> . Has been validated with early breast cancer patients <sup>103</sup> . Included in the main review.
State-Trait Anxiety Inventory	Comprises both state and trait dimensions of anxiety <sup>119</sup> . Widely used in cancer research (e.g., <sup>120</sup> although not fully validated with these populations. Included in the main review.
Symptom Checklist-90	The SCL-90 is a longer version of the BSI-53. It has been used in studies of cancer patients <sup>140</sup> . As the BSI is reviewed and brevity is a key criterion, it was not included in the main review.
Symptom Distress Scale	The SDS assesses the distress patients experience in relation to specific symptoms. It is used in many studies with cancer patients <sup>137</sup> . Given its specific focus, it was not included in the main review.
Zung Rating Scale for Depression	The Zung assesses depressive symptoms and has been used with cancer patients <sup>141</sup> . However, it is not used extensively with these groups and was not included in the main review.

## 7 REFERENCES

1. Kissane DW, Clarke DM, Ikin J, Bloch S, Smith GC, Vitetta L, and McKenzie DP. Psychological morbidity and quality of life in Australian women with early-stage breast cancer: a cross-sectional survey. *Medical Journal of Australia* 1998; 169(4): 192-6.
2. Ford S, Fallowfield L, and Lewis S. Can oncologists detect distress in their out-patients and how satisfied are they with their performance during bad news consultations? *British Journal of Cancer* 1994; 70: 767-770.
3. Parle M, Gallagher J, Gray C, Akers G, and Liebert B. From evidence to practice: Factors affecting the specialist breast nurse's detection of psychological morbidity in women with breast cancer. *Psycho-Oncology* 2001; 10: 503-510.
4. NHMRC National Breast Cancer Centre. *Psychosocial clinical practice guidelines: Providing information, support and counselling for women with breast cancer*. 1999, National Health and Medical Research Council: Canberra.
5. Massie MJ and Popkin MK. *Depressive Disorders*, in *Psycho-oncology*, J.C. Holland, Editor. 1998, Oxford University Press: New York. p. 518-540.
6. Turner J, Wooding S, and Neil C. Psychosocial impact of breast cancer: A summary of the literature 1986-1996. 1998, Sydney, NSW: The NHMRC National Breast Cancer Centre. 47.
7. Zabora J, BrintzenhofeSzoc K, Jacobsen P, Curbow B, Piantadosi S, Hooker C, Owens A, and Derogatis L. A new psychosocial screening instrument for use with cancer patients. *Psychosomatics* 2001; 42(3): 241-246.
8. Australian Institute of Health and Welfare (AIHW), Australasian Association of Cancer Registries, and NHMRC National Breast Cancer Centre. *Breast Cancer Survival in Australian Women 1982-1994*. 1999, Canberra: AIHW (Cancer Series).
9. National Comprehensive Cancer Network, *Practice Guidelines in Oncology: Distress management*. Retrieved June 2002, [http://www.nccn.org/physician\\_gls/index.html](http://www.nccn.org/physician_gls/index.html)
10. Brennan J. Adjustment to cancer - coping or personal transition? *Psycho-Oncology* 2001; 10: 1-18.
11. Lloyd-Williams M, Friedman T, and Rudd N. Criterion validation of the Edinburgh Postnatal Depression Scale as a screening tool for depression in patients with advanced metastatic cancer. *Journal of Pain and Symptom Management* 2000; 20(4): 259-265.

12. Lloyd-Williams M, Friedman T, and Rudd N. 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 & Symptom Management* 2001; 22(6): 990-996.
13. Bloch S and Kissane D. Psychotherapies in psycho-oncology: An exciting new challenge. *British Journal of Psychiatry* 2000; 177: 112-116.
14. Maguire P, Tait A, Brooks M, Thomas C, and Sellwood R. Effect of counselling on the psychiatric morbidity associated with mastectomy. *British Medical Journal* 1980; 281: 1454-1456
15. Spiegel D, Morrow GR, Classen C, Raubertas R, Stott PB, Mudaliar N, Pierce HI, Flynn PJ, Heard L, and Riggs G. Group psychotherapy for recently diagnosed breast cancer patients: A multicenter feasibility study. *Psycho-Oncology* 1999; 8(6): 482-493.
16. Twillman RK and Manetto C. Concurrent psychotherapy and pharmacotherapy in the treatment of depression and anxiety in cancer patients. *Psycho-Oncology* 1998; 7(4): 285-290.
17. Classen C, Butler L, Koopman C, Miller E, Di MS, Giese-Davis J, Fobair P, Carlson R, Kraemer H, and Spiegel D. Supportive-expressive group therapy and distress in patients with metastatic breast cancer: a randomized clinical intervention trial. *Arch Gen Psychiatry* 2001; 58(5): 494-501.
18. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders: DSM-IV*. 4th ed. 1994, Washington, DC: American Psychiatric Association.
19. Robinson JK, Boshier ML, Dansak DA, and Peterson KJ. Depression and Anxiety in cancer patients: Evidence for different causes. *Journal of Psychosomatic Research* 1985; 29(2): 133-138.
20. Rapaport MH, Judd LL, Schettler PJ, Yonkers KA, Thase ME, Kupfer D, Frank E, Plewes JM, Tollefson GD, and Rush AJ. A descriptive analysis of Minor Depression. *American Journal of Psychiatry* 2002; 159(4): 637-643.
21. Ninan PT and Berger J. Symptomatic and syndromal anxiety and depression. *Depression and Anxiety* 2001; 14: 79-85.
22. Parker G. Classifying depression: Should paradigms lost be regained? *American Journal of Psychiatry* 2000; 157(8): 1195-1203.
23. Breitbart W. Identifying patients at risk for and treatment of major psychiatric complications of cancer. *Supportive Care in Cancer* 1995; 3: 45-60.

24. Zabora J, Brintzenhofesoc K, Curbow B, Hooker C, and Piantadosi S. The prevalence of psychological distress by cancer site. *Psycho-Oncology* 2001; 10(1): 19-28.
25. Sellick SM and Crooks DL. Depression and cancer: An appraisal of the literature for prevalence, detection, and practice guideline development for psychological interventions. *Psycho-Oncology* 1999; 8(4): 315-333.
26. Ibbotson T, Maguire P, Selby P, Priestman T, and Wallace L. Screening for anxiety and depression in cancer patients: the effects of disease and treatment. *European Journal of Cancer* 1994; 30A(1): 37-40.
27. Clarke DM, Smith GC, Herrman HE, and McKenzie DP. Monash Interview for Liaison Psychiatry (MILP): Development, reliability, and procedural validity. *Psychosomatics* 1998; 39: 318-328.
28. Passik SD, Donaghy KB, Theobald DE, Lundberg JC, Holtsclaw E, and Dungan WM, Jr. Oncology staff recognition of depressive symptoms on videotaped interviews of depressed cancer patients: Implications for designing a training program. *Journal of Pain and Symptom Management* 2000; 19(5): 329-338.
29. Massie MJ and Holland JC. Diagnosis and treatment of depression in the cancer patient. *Journal of Clinical Psychiatry* 1984; 45: 25-28.
30. Strain JJ. *Adjustment Disorders*, in *Psycho-oncology*, J.C. Holland, Editor. 1998, Oxford University Press: New York. p. 509-517.
31. Stanton AL and Snider PR. Coping with a breast cancer diagnosis: A prospective study. *Health Psychology* 1993; 12(1): 16-23.
32. Fallowfield L, Hall A, Maguire GP, and Baum M. Psychological outcomes of different treatment policies in women with early breast cancer outside a clinical trial. *British Medical Journal* 1990; 301: 575-580.
33. Newell S, Sanson-Fisher RW, Girgis A, and Ackland S. The physical and psychosocial experiences of patients attending an outpatient medical oncology department: A cross-sectional study. *European Journal of Cancer* 1999; 8(2): 73-82.
34. Campora E, Naso C, and Vitullo MT. The impact of chemotherapy on the quality of life of breast cancer patients. *Journal of Chemotherapy* 1992; 4(1): 59-63.

35. Payne SA. Anxiety and depression in women with advanced cancer: Implications for counselling. *Counselling Psychology Quarterly* 1989; 2(3): 337-344.
36. Kraemer HC, Stice E, Kazdin A, Offord D, and Kupfer D. How do risk factors work together? Mediators, moderators, and independent, overlapping, and proxy risk factors. *American Journal of Psychiatry* 2001; 158(6): 848-856.
37. Green B, Krupnick J, Rowland J, Epstein S, Stockton P, Spertus I, and Stern N. Trauma history as a predictor of psychologic symptoms in women with breast cancer. *Journal of Clinical Oncology* 2000; 18(5): 1084-93.
38. Hall A, Fallowfield L, and A' Hern R. When breast cancer recurs: A 3-year prospective study of psychological morbidity. *The Breast Journal* 1996; 2(3): 197-203.
39. Jenkins PL, May VE, and Hughes LE. Psychological morbidity associated with local recurrence of breast cancer. *International Journal of Psychiatry in Medicine* 1991; 21(2): 149-155.
40. Maunsell E, Brisson J, and Deschenes L. Arm problems and psychological distress after surgery for breast cancer. *Canadian Journal of Surgery* 1993; 36(4): 315-20.
41. Tobin MB, Lacey HJ, Meyer L, and Mortimer PS. The psychological morbidity of breast cancer-related arm swelling. *Cancer* 1993; 72: 3248-3252.
42. Grassi L, Indelli M, Marzola M, Maestri A, Santini A, Piva E, and Boccalon M. Depressive symptoms and quality of life in home-care-assisted cancer patients. *Journal of Pain & Symptom Management* 1996; 12(5): 300-307.
43. Blacker S. Nutritional problems and the cancer patient: Psychosocial considerations. *Oncology Issues* 2002; 17(2): 41-44.
44. Walker LG, Heys SD, Walker MB, Ogston K, Miller ID, Hutcheon AW, Sarkar TK, Ah-See AK, and Eremin O. Psychological factors can predict the response to primary chemotherapy in patients with locally advanced breast cancer. *European Journal of Cancer* 1999; 35(13): 1783-8.
45. Colleoni M, Mandala M, Peruzzotti G, Robertson C, Bredart A, and Goldhirsch A. Depression and degree of acceptance of adjuvant cytotoxic drugs. *Lancet* 2000; 356(9238): 1326-7.
46. DiMatteo MR, Lepper HS, and Croghan TW. Depression is a risk factor for non-compliance with medical treatment: Meta-analysis of the effects of anxiety and depression on patient adherence. *Archives of Internal Medicine* 2000; 160(4): 2101-2107.

47. Massie MJ and Holland JC. *Overview of normal reactions and prevalence of psychiatric disorders*, in Handbook of Psycho-oncology, J.C. Holland and J.H. Rowland, Editors. 1989, Oxford University Press: New York. p. 273-281.
48. Dean C and Surtees PG. Do psychological factors predict survival in breast cancer? *Journal of Psychosomatic Research* 1989; 33(5): 561-569.
49. Gilbar O. The connection between the psychological condition of breast cancer patients and survival: A follow-up after eight years. *General Hospital Psychiatry* 1996; 18(4): 266-270.
50. Knobf MT. Physical and psychologic distress associated with adjuvant chemotherapy in women with breast cancer. *Journal of Clinical Oncology* 1986; 4(5): 678-84.
51. Roberts CS, Cox CE, Reintgen DS, Baile WF, and Gibertini M. Influence of physician communication on newly diagnosed breast patients' psychologic adjustment and decision-making. *Cancer* 1994; 74((1 Suppl)): 336-341.
52. Zemore R, Rinholm J, Shepel LF, and Richards M. Some social and emotional consequences of breast cancer and mastectomy: A content analysis of 87 interviews. *Journal of Psychosocial Oncology* 1989; 7(4): 33-45.
53. Pistrang N and Barker C. The partner relationship in psychological response to breast cancer. *Social Science and Medicine* 1995; 40(6): 789-797.
54. Lewis FM and Hammond MA. Psychosocial adjustment of the family to breast cancer: A longitudinal analysis. *Journal of the American Medical Womens Association* 1992; 57(5): 194-200.
55. Lewis FM, Hammond MA, and Woods NF. The family's functioning with newly diagnosed breast cancer in the mother: The development of an explanatory model. *Journal of Behavioral Medicine* 1993; 16(4): 351-370.
56. Creed F. Developments in liaison psychiatry. *Current Opinion in Psychiatry* 1996; 9: 433-438.
57. Cull A, Stewart M, and Altman DG. Assessment of and intervention for psychosocial problems in routine oncology practice. *British Journal of Cancer* 1995; 72: 229-235.
58. Ford S, Lewis S, and Fallowfield L. Psychological morbidity in newly referred patients with cancer. *Journal of Psychosomatic Research* 1995; 39(2): 193-202.
59. Kessler D, Lloyd K, Lewis G, and Gray DP. Cross sectional study of symptom attribution and recognition of depression and anxiety in primary care. *British Medical Journal* 1999; 318: 436-439.

60. Berard R, Boormeester F, and Viljoen G. Depressive disorders in an out-patient oncology setting: prevalence, assessment, and management. *Psycho-oncology* 1998; 7(2): 112-20.
61. Watson M. Screening for psychological morbidity in cancer patients. *The Cancer Journal* 1988; 2(6): 195-196.
62. Kathol RG, Mutgi A, Williams JW, Clamon G, and et al. Diagnosis of major depression in cancer patients according to four sets of criteria. *American Journal of Psychiatry* 1990; 147(8): 1021-1024.
63. Gotay CC and Stern JD. Assessment of psychological functioning in cancer patients. *Journal of Psychosocial Oncology* 1995; 13(1-2): 123-160.
64. Zabora J. *Screening procedures for psychosocial distress*, in *Psycho-oncology*, J.C. Holland, Editor. 1998, Oxford University Press: New York.
65. Clarke DM, McKenzie DP, Marshall RJ, and Smith GC. The construction of a brief case-finding instrument for Depression in the physically ill. *Integrative Psychiatry* 1994; 10(3): 117-123.
66. Clarke DM and McKenzie DP. Screening for psychiatric morbidity in the general hospital: Methods for comparing the validity of different instruments. *International Journal of Methods in Psychiatric Research* 1991; 1: 79-87.
67. Morasso G, Costantini M, Baracco G, Borreani C, and Capelli M. Assessing psychological distress in cancer patients: validation of a self-administered questionnaire. *Oncology* 1996; 53: 295-302.
68. Derogatis LR. *Affects Balance Scale*. 1975, Baltimore: Clinical Psychometric Research.
69. Northouse L. A longitudinal study of the adjustment of patients and husbands to breast cancer. *Oncology Nursing Forum* 1989; 16(4): 511-6.
70. Ayres A, Hoon PW, Franzoni JB, Matheny KB, and et al. Influence of mood and adjustment to cancer on compliance with chemotherapy among breast cancer patients. *Journal of Psychosomatic Research* 1994; 38(5): 393-402.
71. Beck AT, Ward CH, Mendelson M, Mock J, and Erbaugh J. An inventory for measuring depression. *Archives of General Psychiatry* 1961; 4: 53-63.
72. Beck AT, Steer RA, and Garbin MG. Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review* 1988; 8: 77-100.

73. Saleeba AK, Weitzner MA, and Meyers CA. Subclinical psychological distress in long-term survivors of breast cancer: A preliminary communication. *Journal of Psychosocial Oncology* 1996; 14(1): 83-93.
74. Gil S and Gilbar O. Hopelessness among cancer patients. *Journal of Psychosocial Oncology* 2001; 19(1): 21-33.
75. Beck AT and Beck RW. Screening depressed patients in family practice: A rapid technique. *Postgraduate Medicine* 1972; 52: 81-85.
76. Beutler L, Corbishley A, and Hamblin D. Reliability and Validity of the Short Form Beck Depression Inventory with Older Adults. *Journal of Clinical Psychology* 1988; 44(6): 853-857.
77. Volk RJ, Pace TM, and Parchman ML. Screening for Depression in Primary Care Patients: Dimensionality of the Short Form of the Beck Depression Inventory. *Psychological Assessment* 1993; 5(2): 173-181.
78. Beck AT, Steer RA, and Brown GK. *Manual for the Beck Depression Inventory-II*. 1996, San Antonio, TX: Psychological Corporation.
79. Beck AT, Guth D, Steer RA, and Ball R. Screening for major depression disorders in medical inpatients with the Beck Depression Inventory for Primary Care. *Behaviour Research and Therapy* 1997; 35(8): 785-791.
80. Derogatis LR and Spencer PM. *The Brief Symptom Inventory (BSI) Administration, Scoring and Procedures Manual*. 1982, Baltimore: Clinical Research.
81. Derogatis LR and Melisaratos N. *The Brief Symptom Inventory: an introductory report*. *Psychological Medicine* 1983; 13: 595-605.
82. Gilbar O and Florian V. Do women with inoperable breast cancer have a psychological profile? *Omega: Journal of Death and Dying* 1991; 23(3): 217-226.
83. Ben Zur H, Gilbar O, and Lev S. Coping with breast cancer: Patient, spouse, and dyad models. *Psychosomatic Medicine* 2001; 63(1): 32-39.
84. Payne DK, Hoffman RG, Theodoulou M, Dosik M, and Massie MJ. Screening for anxiety and depression in women with breast cancer: Psychiatry and medical oncology gear up for managed care. *Psychosomatics* 1999; 40(1): 64-69.
85. Radloff LS. The CES-D scale: a self-report depression scale for research in the general population. *Applied Psychological Measurement* 1977; 1(3): 385-401.



86. Hann D, Winter K, and Jacobsen P. Measurement of depressive symptoms in cancer patients: Evaluation of the Center for Epidemiological Studies Depression Scale (CES-D). *Journal of Psychosomatic Research* 1999; 46(5): 437-443.
87. Goldberg DP. *Manual of the General Health Questionnaire*. 1978, Windsor: NFER-Nelson.
88. Hughson AV, Cooper AF, McArdle CS, and Smith DC. Validity of the General Health Questionnaire and its subscales in patients receiving chemotherapy for early breast cancer. *Journal of Psychosomatic Research* 1988; 32(4-5): 393-402.
89. Hughson AV, Cooper AF, McArdle CS, and Smith DC. Psychosocial consequences of mastectomy: Levels of morbidity and associated factors. *Journal of Psychosomatic Research* 1988; 32(4-5): 383-391.
90. Tjemsland L, Soreide JA, and Malt UF. Posttraumatic distress symptoms in operable breast cancer III: status one year after surgery. *Breast Cancer Research & Treatment* 1998; 47(2): 141-51.
91. Goldberg DP and Williams P. *A User's Guide to the General Health Questionnaire*. 1988, Windsor, UK: NFER-Nelson. 1-129.
92. Maunsell E, Brisson J, Deschenes L, and Frasure-Smith N. Randomized trial of a psychological distress screening program after breast cancer: effects on quality of life. *Journal of Clinical Oncology* 1996; 14(10): 2747-55.
93. Lee DTS, Wong CK, Ungvari GS, Cheung LP, Haines CJ, and Chung TKH. Screening psychiatric morbidity after miscarriage: Application of the 30-item General Health Questionnaire and the Edinburgh Postnatal Depression Scale. *Psychosomatic Medicine* 1997; 59(2): 207-210.
94. Hamilton M. Development of a rating scale for primary depressive illness. *British Journal of Social and Clinical Psychology* 1967; 6: 278-296.
95. Holland JC, Romano SJ, Heiligenstein JH, Tepner RG, and Wilson MG. A controlled trial of fluoxetine and desipramine in depressed women with advanced cancer. *Psycho-Oncology* 1998; 7(4): 291-300.
96. Zigmond A and Snaith R. The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavia* 1983; 67: 361-370.
97. Herrmann C. International experiences with the Hospital Anxiety and Depression Scale - A review of validations data and clinical results. *Journal of Psychosomatic Research* 1997; 42(1): 17-41.

98. Razavi D, Delvaux N, Farvacques C, and Robaye E. Screening for adjustment disorders and major depressive disorders in cancer in-patients. *British Journal of Psychiatry* 1990; 156: 79-83.
99. Ramirez AJ, Richards MA, Jarrett SR, and Fentiman IS. Can mood disorder in women with breast cancer be identified preoperatively? *British Journal of Cancer* 1995; 72: 1509-1512.
100. Spinhoven PH, Ormel J, Sloekers PPA, and Kempen GIJM. A validation study of the Hospital Anxiety and Depression scale (HADS) in different groups of Dutch subjects. *Psychological Medicine* 1997; 27(2): 363-370.
101. Holtom N and Barraclough J. Is the Hospital Anxiety and Depression Scale (HADS) useful in assessing depression in palliative care? *Palliative Medicine* 2000; 14(3): 219-220.
102. Watson M, Greer S, Rowden L, Gorman C, and et al. Relationships between emotional control, adjustment to cancer and depression and anxiety in breast cancer patients. *Psychological Medicine* 1991; 21(1): 51-57.
103. Hall A, A'Hern R, and Fallowfield L. Are we using appropriate self-report questionnaires for detecting anxiety and depression in women with early breast cancer? *European Journal of Cancer* 1999; 35(1): 79-85.
104. Love AW, Kissane DW, Bloch S, and Clarke DM. Diagnostic efficiency of the Hospital Anxiety and Depression Scale in women with early stage breast cancer. *Australian and New Zealand Journal of Psychiatry* 2002; 36: 246-250.
105. Stewart AL, Hays RD, and Ware J. The MOS short-form General Health Survey: reliability and validity in a patient population. *Medical Care* 1988; 26: 724-735.
106. Ganz P, Rowland J, Meyerowitz B, and Desmond K. Impact of different adjuvant therapy strategies on quality of life in breast cancer survivors. *Recent Results Cancer Res* 1998; 152: 396-411.
107. Day R, Ganz P, Costantino J, Cronin W, Wickerham D, and Fisher B. Health-related quality of life and tamoxifen in breast cancer prevention: a report from the National Surgical Adjuvant Breast and Bowel Project P-1 Study. *J Clin Oncol* 1999; 17(9): 2659-69.
108. Hanson-Frost M, Suman VJ, Rummans TA, Dose AM, Taylor M, Novotny P, Johnson R, and Evans RE. Physical, psychological and social well-being of women with breast cancer: the influence of disease phase. *Psycho-Oncology* 2000; 9(3): 221-31.
109. Berwick DM, Murphy JM, Goldman PA, Ware JE, Barsky AJ, and Weinstein MC. Performance of a five-item mental health screening test. *Medical Care* 1991; 29: 169-176.

110. Montgomery SA and Åsberg M. A new depression scale designed to be sensitive to change. *British Journal of Psychiatry* 1979; 134: 382-389.
111. Snaith RP and Taylor CM. Rating scales for depression and anxiety: A current perspective. *British Journal of Clinical Pharmacology* 1985; 19: 17S-20S.
112. Tjemsland L, Soreide J, Matre R, and Malt U. Pre-operative [correction of Prooperative] psychological variables predict immunological status in patients with operable breast cancer. *Psychooncology* 1997; 6(4): 311-20.
113. Maes M, Capuron L, Ravaut A, Gualde N, Bosmans E, Egyed B, Dantzer R, and Neveu PJ. Lowered serum dipeptidyl peptidase IV activity is associated with depressive symptoms and cytokine production in cancer patients receiving interleukin-2-based immunotherapy. *Neuropsychopharmacology* 2001; 24(2): 130-140.
114. Pezzella G, Moslinger-Gehmayr R, and Contu A. Treatment of depression in patients with breast cancer: a comparison between paroxetine and amitriptyline [In Process Citation]. *Breast Cancer Res Treat* 2001; 70( 1): 1-10
115. Derogatis LR. The Psychosocial Adjustment to Illness Scale (PAIS). *Journal of Psychosomatic Research* 1986; 30(1): 77-91.
116. Greer S, Moorey S, Baruch J.D., Watson M, Robertson B.M., Mason A, Rowden L, Law M.E., & Bliss J.M. Adjuvant psychological therapy for patients with cancer: A prospective randomised trial. *British Medical Journal* 1992; 304: 675-680.
117. de Haes JC, van Knippenberg FCE, and Neijt JP. Measuring psychological and physical distress in cancer patients: structure and application of the Rotterdam Symptom Checklist. *British Journal of Cancer* 1990; 62: 1034-1038.
118. Hopwood P, Howell A, and Maguire GP. Screening for psychiatric morbidity in patients with advanced breast cancer: Validation of two self-report questionnaires. *British Journal of Cancer* 1991; 64: 353-356.
119. Spielberger CD, Gorsuch RL, Lushene R, Vagg PR, and Jacobs GA. *Manual for the State-Trait Anxiety Inventory*. 1970, Palo Alto CA: Consulting Psychologists Press.
120. Howard RA and Harvey PG. A longitudinal study of psychological distress in women with breast symptoms. *Journal of Health Psychology* 1998; 3(2): 215-226.

121. Burke S and Kissane DW. Psychosocial support for breast cancer patients provided by members of the treatment team. 1998, Sydney NSW: NHMRC National Breast Cancer Centre. 90.
122. Burke S and Kissane DW. Psychosocial support for breast cancer patients: A review of interventions by specialist providers. 1998, Sydney, NSW: NHMRC National Breast Cancer Centre. 103.
123. Gilbody SM, House AO, and Sheldon TA. Routinely administered questionnaires for depression and anxiety: systematic review. *British Medical Journal* 2001; 322: 406-409.
124. D'Errico GM, Galassi JP, Schanberg R, and Ware WB. Development and validation of the Cancer Worries Inventory: A measure of illness-related cognitions. *Journal of Psychosocial Oncology* 1999; 17(3-4): 119-137.
125. Edelman S, Bell DR, and Kidman AD. A group cognitive behaviour therapy programme with metastatic breast cancer patients. *Psycho-Oncology* 1999; 8(4): 295-305.
126. Classen C, Koopman C, Angell K, and Spiegel D. Coping styles associated with psychological adjustment to advanced breast cancer. *Health Psychology* 1996; 15(6): 434-437.
127. Vachon ML, Lyall WA, Rogers J, Cochrane J, and Freeman SJ. The effectiveness of psychosocial support during post-surgical treatment of breast cancer. *International Journal of Psychiatry in Medicine* 1981; 11(4): 365-72.
128. van Hemert AM, Den Heijer M, Vorsrtenbosch HM, and Bolk JH. Detecting psychiatric disorders in medical practice using the General Health Questionnaire: Why do cut-off scores vary? *Psychological Medicine* 1995; 25(1): 165-170.
129. Coyne JC, Benazon NR, Gaba CG, Calzone K, and Weber BL. Distress and psychiatric morbidity among women from high-risk breast and ovarian cancer families. *Journal of Consulting and Clinical Psychology* 2000; 68(5): 864-874.
130. Baider L and De Nour AK. Psychological distress and intrusive thoughts in cancer patients. *Journal of Nervous and Mental Disease* 1997; 185(5): 346-348.
131. Watson M, Greer S, Young J, Inayat Q, Burges C, and Robertson B. Development of a questionnaire measure of adjustment to cancer: The MAC scale. *Psychological Medicine* 1988; 18(1): 203-209.

132. Manne S and Schnoll R. Measuring cancer patients' psychological distress and well-being: A factor analytic assessment of the Mental Health Inventory. *Psychological Assessment* 2001; 13(1): 99-109.
133. Aragona M, Muscatello M, and Mesiti M. Depressive mood disorders in patients with operable breast cancer. *Journal of Experimental Clinical Cancer Research* 1997; 16(1): 111-8.
134. Arathuzik MD. The appraisal of pain and coping in cancer patients. *Western Journal of Nursing Research* 1991; 13(6): 714-731.
135. Cella DF, Tross S, Orav EJ, Holland JC, and et al. Mood states of patients after the diagnosis of cancer. *Journal of Psychosocial Oncology* 1989; 7(1-2): 45-54.
136. DiLorenzo TA, Bovbjerg DH, Montgomery GH, Valdimarsdottir H, and Jacobsen PB. The application of a shortened version of the profile of mood states in a sample of breast cancer chemotherapy patients. *British Journal of Health Psychology* 1999; 4(Part 4): 315-325.
137. Cimprich B. Pretreatment symptom distress in women newly diagnosed with breast cancer. *Cancer Nursing* 1999; 22(3): 185-94; quiz 195.
138. Merluzzi TV and Martinez Sanchez MA. Factor structure of the Psychosocial Adjustment to Illness Scale (Self-Report) for persons with cancer. *Psychological Assessment* 1997; 9(3): 269-276.
139. Andrykowski MA and Cordova MJ. Factors associated with PTSD symptoms following treatment for breast cancer: Test of the Andersen model. *Journal of Traumatic Stress* 1998; 11(2): 189-203.
140. Bruera E, Brenneis C, Michaud M, Rafter J, and et al. Association between asthenia and nutritional status, lean body mass, anemia, psychological status, and tumor mass in patients with advanced breast cancer. *Journal of Pain and Symptom Management* 1989; 4(2): 59-63.
141. Dugan W, McDonald MV, Passik SD, Rosenfeld BD, Theobald D, and Edgerton S. Use of the Zung Self-Rating Depression Scale in cancer patients: Feasibility as a screening tool. *Psycho-Oncology* 1998; 7(6): 483-493.