Screening and Assessment of Distress, Anxiety, and Depression in Cancer Patients

ANNIKA THALÉN-LINDSTRÖM
Abstract

Aims and Methods
The overall aim was to evaluate methods of screening and assessment of distress, anxiety, and depression in cancer patients. Further, to evaluate effects of a psychosocial intervention and to explore changes of distress, anxiety, depression, and HRQoL during six months. Study I included 495 consecutive patients screened with the Hospital Anxiety and Depression Scale (HADS) at their first visit to an Oncology Department. Half of the patients with >7 on any of HADS subscales received standard care (SCG), and half received a psychosocial intervention (IG). To compare HADS with a thorough clinical assessment (CA), Study II included 171 identified patients representing both sexes, <65/≥65 years, and curative/palliative treatment intention.

Results
Screening with HADS identified anxiety or depression symptoms in 36% of the 495 patients. Thirty-six (43%) of 84 IG patients attended CA, resulting in support for 20 (24%) of them. There were no differences between SC and IG during follow-up, anxiety and depression decreased and HRQoL increased, although anxiety was still present and HRQoL impaired at six months. The Distress Thermometer (DT) ≥4 (sensitivity 87%, specificity 73%) is valid for screening of distress; its ability to measure changes over time is comparable to HADS. Of 319 patients screened with <8 on both HADS subscales, 196 (80%) were stable non-cases with HRQoL comparable to that of the general population and 49 (20%) patients were unstable non-cases, with deteriorated anxiety, depression, and HRQoL. >4 on HADS subscales may be useful for early detection of unstable non-cases. In Study II, HADS identified 49 (34%) and the CA 71 (49%) patients as having distress, anxiety or depression. CA identified more men and more young patients with distress than HADS did.

Conclusion
Screening and assessment identifies patients with persistent symptoms and increases access to CA and support. The DT may be used routinely in oncology care. When HADS is used, healthcare professionals should be aware of psychosocial problems perceived by patients but not covered by HADS. Most patients identified with distress seem to have resources to manage problems without needing additional support. Patients screened as non-cases indicate no need for re-assessment.

Keywords: Screening and assessment, anxiety, depression, psychosocial intervention, healthrelated quality of life, hospital anxiety and depression scale, distress thermometer, cancer

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“Rives know this: there is no hurry. We shall get there some day.”

Winnie the Pooh
List of Papers

This thesis is based on the following papers, which are referred to in the text by their Roman numerals.


IV Thalén-Lindström, A., Glimelius, B., Johansson, B. (2014) Stability and changes of anxiety, depression, and health-related quality of life over six months in oncology patients scoring as non-cases according to Hospital anxiety and Depression Scale (HADS) at initial assessment. Manuscript

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<td>Diagnostic and Statistical Manual of Mental Disorders IV</td>
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<td>Distress Thermometer</td>
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<td>EORTC QLQ-C30</td>
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<td>ICD</td>
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<td>Intervention Group</td>
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<td>Psychosocial Outpatient Clinic</td>
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<td>Patient-Reported Outcome Measure</td>
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<td>Patient Satisfaction</td>
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<td>Research Assistant</td>
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<td>RCT</td>
<td>Randomized Controlled Trail</td>
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<td>Standard Care Group</td>
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<td>Structured Clinical Inerview</td>
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Dear reader,
I would like to give you some personal perspective of my background to become a PhD student in the research study of this thesis. I started out as a nurse working with patients at the department of endocrine oncology, Uppsala University Hospital in 1987. My impression was that these patients had come over their main worry after sometimes, a very long period of investigations and unusual symptoms which were hard for the doctors to diagnose. When the patient finally got their diagnosis and treatment, their worst time of worry was over. However, these patients expressed a need for information about various issues concerning the diagnosis and the treatment and I was keen to find ways to distribute folders with information e.g. from the Swedish Cancer Society and keep them reachable for all patients at the ward. During the late 1990, I completed the special oncology nurse education at the Karolinska Institutet. After that, in the work with cancer patients receiving high dose chemotherapy at a special department at Uppsala University Hospital, I came more in contact with the patients’ physical and psychological concerns due to their diagnoses and the intensive treatment.

In 1997, I participated in a study specific education and training in psychosocial oncology for nurses, delivered by psychologists for a research study. Later on, I become one of two nurses who performed the nurse intervention in the research study which consisted of individual support (nurse or psychologist) to newly diagnosed patients with breast or ovarian cancer. The study lasted for two years and it increased my interest in psychosocial oncology and to work with other professions in the field to support the patients.

As a result of several previous psychosocial intervention studies for cancer patients, my colleague Cecilia Arving and I were able to start a psychosocial outpatient clinic (POC) in the year of 2000, funded with grants from the Swedish Cancer Society. The POC was situated at the Uppsala University Hospital and became a part of the routine clinical care at the department of oncology after some years of funding. During these years we put a lot of effort to reach out with information about the available support services at POC with various professions available. However, we found it hard to reach patients in need. We were confronted with some staff who hesitated to give verbal information and a folder concerning the POC services. We continued to inform health care staff, patient associations and several of other forums. The patients who attended POC services had a lot of strains and various psy-
chosocial problems and were provided individual support and information and support groups for patients and next of kin. In addition to work at the POC I completed my undergraduate degree in Cognitive Behavior therapy in 2006.

I was introduced to perform the intervention in the research study by Birgitta Johansson, my later main supervisor, and became a member of the research group. I wanted to contribute to new knowledge through research, evaluating the presence of distress, anxiety, and depression symptoms in oncology patients, extend the knowledge in how to reach patients in need for additional support and to evaluate the effects of such a support delivered in routine clinical care. I was registered as a PhD student in 2009.

This thesis includes studies to evaluate methods of screening and assessment of distress, anxiety, and depression in cancer patients and to evaluate the effects of a psychosocial support intervention including all components of the screening procedure.

Annika Thalén-Lindström 6th of May 2014
Introduction

Health and disease

All individuals have physical, psychological, social, and existential needs. Personal resources to fulfill those needs vary depending on heredity and environment. Health is a multidimensional phenomenon and since 1948 the World Health Organization’s definition has been: “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” [1]. Perceived health is individual and subjective; a person can perceive good health and objectively be healthy or objectively be unwell; on the other hand, a person can perceive bad health and objectively be healthy or objectively be unwell. The dominant model for disease has been accounted for as deviations from the norm of measurable biological (somatic) variables according to a biomedical model. In 1977, the psychologist G. Engel introduced the biopsychosocial (BPS) model into medicine. The model accounted for biological, psychological/behavioral (e.g. beliefs, relationships, stress) and social components (e.g. socioeconomic status, culture, relationship), each as parts of the individual. The BPS model stresses the importance of considering all three components together when managing health problems [2]. The model accompanied a shift in focus from disease to health, recognizing that psychological factors have great impact on recovery and progression in disease and illness. The state of being in good health, based on the BPS model, is accompanied by good quality of life and strong relationships. Long-lasting diseases (e.g. cancer, cardiovascular disease and rheumatic diseases) entail social and psychological consequences for the individuals and for their relatives, which need adjustment in several life domains. Heterogeneity of adjustment varies between individuals and between different phases of the disease trajectory. Variables that influence the adjustment are socioeconomic, culture/ethnicity, and gender as well as interpersonal relationships, personal attributes, cognitive appraisals, and coping processes [3].
Cancer

Incidence and medical treatment

It has been estimated that at least every third person in Sweden will have cancer during his/her lifetime. The number of cancer cases is increasing due to an ageing population, screening and improved diagnostic methods. In Sweden 57,270 cancers cases were diagnosed and reported to the Swedish National Cancer register in 2012. The risk of getting cancer increases with age, and about 65% of the persons diagnosed with cancer in 2012 were ≥ 65 years. Thus, about 35% were younger (children, adolescents, and persons of working age). The incidence was similar between men (51%) and women (49%) [4]. Cancer is a generic term for approximately 200 different diseases, and in Sweden prostate cancer is the most common diagnosis among men, and breast cancer among women. Skin cancer is the second most common cancer and the incidence is increasing. Colorectal cancer is the third most common cancer among men and women. Diagnostic and treatment methods have improved and survival rates have increased during the past decades. Presently, five-year survival amounts to 72% and ten-year survival to about 65%. The most common treatments are surgery, radiotherapy, and chemotherapy. Targeted drugs have recently been added to armamentarium. Although the principles are the same, there is continuous development, improvement, and refinement of these treatments. Treatments may often be combined; surgery is often preceded or followed by radiotherapy or followed by chemotherapy to reduce the risk of relapse. The treatment period has increased for many patients as a result of developments.

Rehabilitation

The care of the cancer patient often extends for a long time period, through investigation, diagnosis, treatment, follow-up, and recovery. Rehabilitation is stressed to begin in connection with the diagnosis and to be present in all stages of the disease and care process [5]. In 2004, the Nordic Cancer Union defined cancer rehabilitation:

Cancer rehabilitation is a specific period of time during which the physical, psychological, social, and existential consequences of cancer and the treatment are prevented and reduced. The rehabilitation initiatives are to have clear objectives and effects, and provide each individual patient help and inspiration to have the best possible life. The individual rehabilitation plan is to be prepared in a close dialogue between the patient and the professionals [6].

Cancer patients’ needs vary with respect to physical/medical, social, and psychological factors. Based on the BPS model and a holistic perspective,
cancer rehabilitation needs are individual, and vary during the disease and care process. All patients have basic needs of rehabilitation e.g. empathic treatment from health care providers, information and access to support and counseling for physical, psychological, and social issues. Some patients have more specific needs of rehabilitation which need complementary resources and collaboration with other care givers, e.g. psychologists, speech therapists or advanced homecare. Some patients will need advanced rehabilitation efforts, e.g. psychiatrist, collaboration with social services, or other departments for a limited or longer time period [5]. Rehabilitation consists of multidisciplinary efforts including medical, physiotherapeutic, psychological, nutritional, social, and existential support. Each patient should have an individual rehabilitation plan based on the patient’s functioning and needs [7].

Starting point for the main research questions in the present thesis are results from several previous studies exploring the value of psychosocial interventions, briefly presented below.

Cancer rehabilitation in Sweden was first initiated in the mid-1980s with “Starting Again”, a group rehabilitation program for cancer patients after completed oncology treatment. The programs consisted of physical training, information, and training of coping skills [8]. In an RCT of the “Starting Again” program patients randomized to the program improved more than patients in the control group [9]. Scientific research in the field, internationally as well as in Sweden, was initiated in the late 1980s and the beginning of the 1990s. The aim was mainly to explore interventions to increase and sustain health-related quality of life (HRQoL), and to decrease emotional problems in cancer patients. In one of these studies in Sweden, health care staff in routine oncology care conducted the intervention after a study-specific training. Contact nurses used a checklist to assess the patients’ physical, psychological, social, existential, and financial problems. The nurse had access to, and could refer the patient to psychologists, social workers, physiotherapists, dietitians, dental hygienists and occupational therapists as well as different physicians. The intervention showed a positive effect on cancer patients’ overall well-being [10]. Later, a large randomized controlled study was conducted to explore the effects of individual support, group rehabilitation, or a combination of both interventions on HRQoL and emotional well-being in cancer patients. No significant effects were found for the intervention group as compared to standard care during two years of follow-up. The result suggests that most cancer patients seem to handle cancer-related concerns with the support available in standard care; the rehabilitation interventions were given to all patients included in the intervention group without assessment of their needs. These authors recommended screening to target those at risk for severe problems and in need of support, to evaluate the effects of rehabilitation interventions in future studies [11]. Earlier cancer rehabilitation research suffers from methodological limitations and the effects of the interventions vary. Future research should include different multidi-
dimensional outcomes such as quality of life (QoL) measures with their various subdomains [12].

Distress
Psychological aspects and care constitute an important part of comprehensive care for cancer patients and a part of the cancer rehabilitation. In 1997 the National Cancer Center Network (NCCN) in the USA initiated a multidisciplinary panel (also including patient advocacy members), “the panel of psychosocial distress management”. The panel’s first task was to find an encompassing word that would cover psychological, social, and spiritual concerns and they chose the word “distress” as less stigmatizing than “psychiatric, psychosocial, and even emotional”. Cancer distress is defined as:

an unpleasant emotional experience of a psychological, social, and/or spiritual nature which extends on a continuum from normal feelings of vulnerability, sadness and fears to problems that are disabling, such as depression, anxiety, panic, social isolation, and existential and spiritual crises [13].

The overall prevalence of distress in large populations of cancer patients with mixed diagnoses varies between 22 and 44% [14-16]. Prevalence of distress varies between cancer diagnoses. In a previous study, patients with prostate cancer reported less distress than patients with other cancer diagnoses, and distress was most reported in patients with lung, pancreas, head and neck, Hodgkin’s disease, and patients with central nervous system (CNS) tumors [16]. Distress, anxiety and depression are transient for most cancer patients but for some, these problems remain over time [17].

A cancer diagnosis, the treatments, and their side-effects imply physical, social, and psychological strains on the patient. These may consist of reactions to the diagnosis of a severe and possibly life-threatening illness, fear of unpleasant symptoms (e.g. pain, nausea, vomiting, and body changes), disruption of life plans, and worry about progression or recurrence. During the treatment phase, the patient has access to healthcare staff for complementary information and support along with the medical treatment. Support from family and friends are also sources for maintained well-being. Social supports serve as protective factors against distress, and increase HRQoL for cancer patients [18-20]. Most patients appear to be able to adjust, and to handle the situation maintaining their psychological well-being. In one large cross-sectional cohort of 8,265 cancer patients in various stages of the illness trajectory, about to start oncology treatment, 70% had no anxiety or depression [21]. Thus, a diagnosis of cancer does not mean that all patients are in need of professional support or treatment for psychological distress although many patients experience physical, social, and psychological strains during the illness trajectory.
About one-third of the patients experience physical and/or psychological problems to a greater extent. In a large cross-sectional study with cancer patients approximately one-third of patients about to start radiotherapy reported physical, social, and psychological problems and needs [22]. Patients receiving oncology treatment may perceive physical problems such as fatigue, sleep disturbances, appetite loss, nausea and vomiting, pain, hair loss and other body changes, and concentration difficulties. The most common problems reported by cancer patients are fatigue, pain, managing emotions/stress, anxiety, and depression [16, 23]. Moderate to severe fatigue was reported by 45% of patients with breast, colorectal, and prostate cancer receiving active oncological treatment [24]. Sleep disturbance was reported for about half of patients with lung or breast cancer, often in patients receiving chemotherapy and in combination with other symptoms such as pain, fatigue, and psychological distress [25, 26]. Sleep difficulties are not always a consequence of the cancer; they may be pre-existing but are often aggravated by the cancer [27].

Certain predictors for developing and sustaining physical and psychological problems have been found. Age, gender, diagnosis, receiving oncology treatment, and lack of social support are reported predictors for occasional or continuous physical and psychological distress in cancer patients [16, 28-30]. Advanced disease, deficiency of social support, and anxiety and depression at diagnosis also predict a similar status six months later in cancer patients [31].

**Anxiety**

Anxiety is a natural response and a necessary warning adaptation in humans. Anxiety consists of cognitions (e.g. “I will go mad” or “I am going to die”), behaviors (e.g. irritability, restlessness) and physical reactions (e.g. chest tightness, breathing difficulties, and sleeping difficulties). Anxiety can become a pathological disorder when it is excessive and uncontrollable, requires no specific external stimulus, and manifests with a wide range of physical and affective symptoms and changes in behavior and cognition. As outlined in DSM IV, anxiety disorders include generalized anxiety disorder (GAD), social anxiety disorder, specific phobia, panic disorder with and without agoraphobia, obsessive-compulsive disorder (OCD), posttraumatic stress disorder (PTSD), anxiety secondary to medical condition, acute stress disorder (ASD), and substance-induced anxiety disorder [32].

**Anxiety in cancer patients**

Among patients with cancer, anxiety is a natural and common response to threats of uncertainty, and to fear of suffering and mortality. These responses may however also motivate the patient to adhere to the medical treatment. The prevalence of anxiety in cancer patient varies. Strong et al. reported 23% with anxiety in a large sample of 3071 cancer patients with varied diag-
noses [14]. In other studies of heterogeneous groups of cancer patients the prevalence varies between 12-34% [33, 34]. Stark et al. reported almost half (48%) of the patients in their study with sufficient anxiety for further assessment. As a second step, a semi-structured diagnostic interview was used where 30% of the earlier identified patients fulfilled the ICD-10 criteria for anxiety disorder [35]. The prevalence for anxiety of 10% in a recent meta-analysis was unusual low compared to previous studies [36].

**Depression**

Symptoms of depression occur even if the criteria for major depressive episodes are not fulfilled. For mild to moderate depression the symptoms are the same as for major depressive episodes but less severe. It may be difficult to estimate the proportions of symptoms as they vary from natural emotions to severe symptoms with disability in daily activities. According to DSM-IV, a person who suffers from a major depressive episode has either a depressed mood or a loss of interest or pleasure in daily activities consistently for at least a two-week period. This mood must represent a change from the person’s normal mood. Social, occupational, educational or other important functioning must also be negatively impaired by the change in mood. This episode is characterized by the presence of at least five of the following symptoms during the same two-week period: depressed mood, diminished interest or pleasure in almost all activities, significant weight loss/gain, insomnia/hypersomnia, feeling of restlessness or being slowed down, fatigue or loss of energy, feelings of worthlessness or excessive or inappropriate guilt, diminished ability to think or concentrate, recurrent thoughts of death, suicidal ideation without a specific plan, or suicide attempt or a specific suicide plan. The symptoms cause clinically significant distress or functioning impairment and are not due to a general medical condition, substance abuse, or bereavement [32].

**Depression in cancer patients**

The prevalence of depression among cancer patients is still unclear despite many years of research, chiefly due to methodological difficulties. There is a variety of self-assessment questionnaires used in various studies to identify symptoms of depression or clinical depression, while some studies use structured interviews for diagnosis. Different settings, different times of measurement, different cultures, and different cancers are other factors that make it difficult to get a good estimate. The prevalence of depression is 8-24% in cancer patients during or after treatment, in non-palliative-care [36-38]. The prevalence of anxiety and depression was twice as high in hospitalized cancer patients compared to the prevalence in the general population [39]. Depression is associated with poorer treatment adherence and prognosis [40, 41]. In a large cohort of 8265 heterogeneous cancer patients, 6% had pure depression and 12% had mixed anxiety/depression [21]. Cancer survivors
are at increased risk for hospitalization for depression when compared to persons without cancer. A large population-based study showed an increased risk for both men and women for admission to hospital for depression after a cancer diagnosis. The risk was highest during the first year after the diagnosis; the significantly increased risk persisted for ten years or more after diagnosis [42]. Depressive symptoms are also risk factors for all-time mortality one to ten years post-diagnosis in cancer survivors [43].

Psychological interventions

The goal of psychological interventions is to relieve emotional distress and promote well-being in its effort to improve or sustain the patient’s HRQoL [44]. Clinical guidelines recommend cognitive behavior therapy (CBT) and psycho-educational interventions as effective in the treatment of anxiety and depression. It is assumed that effective interventions collected from other populations are generalizable to cancer patients [45]. The overall effectiveness of psychological interventions in promoting cancer patients’ well-being is positive but inconsistent. One review suggests that psychological interventions are effective in managing distress [46], while another review provides no convincing evidence of effective psychological interventions for reducing distress [47].

CBT is a relatively brief, goal-oriented, problem-focused treatment based on learning principles and cognitive and behavior changes. The personal skills of the therapist form the basis upon which the therapeutic relationship is established (as in other therapies). CBT involves collaboration in solving problems, where the therapist helps the patient to test beliefs through guided discovery. Behavioral interventions and experiments provide effective means of challenging negative attitudes, providing a sense of personal control and teaching self-help methods. The collaborative relationship is a part of the structured therapy session, which uses agenda setting, summaries and regular feedback to optimize the alliance between the patient and the therapist in learning new skills for coping with cancer. Whether the techniques are cognitive or behavioral, the structured collaborative therapy session is a hallmark of CBT [48].

CBT has been used with positive effects for cancer patients with anxiety, depression, distress, insomnia and low quality of life [49-52]. Individual interventions were more effective than group interventions. In studies conducted with advanced cancer patients, CBT intervention was effective for depression and feelings of sadness but not for anxiety [53]. Also, a problem-solving intervention was effective to reduce psychological distress and the effect was maintained over one year [54]. According to a recent Cochrane review [55], there is a lack of convincing evidence of the effects to support implementation of interventions to improve general QoL in newly diagnosed (within one year) cancer patients. Psycho-educational nurse-delivered inter-
ventions combined with support attention indicated the most promising results. Future studies should test assessment methods designed to identify patients who may benefit from psychosocial interventions. It is still unclear which patients will benefit from interventions. A recent review sought to identify impacts of psychosocial moderators of the effect of psychosocial interventions on psychosocial well-being of cancer patients. It is still suggested that individuals with high symptom burdens and low QoL would likely benefit from psycho-educational and CBT interventions [56].

Patient-reported outcome measures

By tradition, assessments of patients’ symptoms and functioning (activities of daily living, depression etc.) have been made by healthcare staff, although assessments of changes in those domains depend on the patient’s perception. In order to consider the patients’ individual perceptions, patient-reported outcomes (PRO) in oncology clinical trials have been gradually introduced and used over the past 25 years. The Food and Drug Administration introduced the umbrella term PRO, and evaluates such instruments for their usefulness in measuring the benefit of medical product treatment. Patient-reported outcome measure (PROM) is a measurement of any of the patient’s health status aspects that come directly from the patient without interpretation of the patient’s responses by anyone else. Assessments using PROMs can be carried out by self-reported questionnaires or interviews. End points measured by PROMs are often used in support of claims that refer to a patient’s symptoms or ability to function [57]. HRQoL has been assessed with PROMs during the past three decades as a complement to objective measures (laboratory, imaging) in clinical trials. However, the collection and results of HRQoL data is not often used in day-to-day clinical practice, and more research into application of HRQoL assessment in clinical practice is suggested [58]. Self-reported individual HRQoL data correspond to the disease course and patterns over time when compared to the patient’s medical record. At a group level patients report more HRQoL problems than mentioned in the medical records [59]. Velikova et al. indicate that routinely repeated HRQoL assessment in individual patients is feasible and an effective approach for improving medical practice, and that it facilitates the communication between the patient and the physician [60]. The questionnaires used in this thesis for screening and assessments of anxiety, depression, distress, and HRQoL are PROMs.

Health-Related Quality of Life

HRQoL is conceptualized as a multidimensional and subjective construct encompassing the physical (e.g. symptoms), functional (e.g. role functioning), psychological (e.g. distress), and social dimensions (e.g. relationships)
of the impact of disease or treatment [61]. A large sample of the general Swedish population indicates that many diseases, and physical inactivity are the most important covariates for poor HRQoL and poor HRQoL is associated with increased use of health services [62].

All dimensions of HRQoL can be influenced by cancer and its treatment. Depression, anxiety and pain are associated with decreased HRQoL in cancer patients [35, 40, 63, 64]. Anxiety and depression have strong and independent association with mental health domains and somatic symptom burden, where depression also has a broader association with multiple other domains of HRQoL [63]. It is important to recognize and treat depression and anxiety in cancer patients to decrease the suffering caused by the disorders themselves but also to ease their adverse effects on multiple HRQoL domains. Poor HRQoL is associated with poor survival [65, 66].

Screening

Screening is a process of identifying overtly healthy people who may be at increased risk of a disease or condition. They can then be offered information, further tests, and appropriate treatment to reduce their risk and/or any complications arising from the disease or condition [67]. An examination or a test intended to be used for screening has to be judged on its accuracy in identifying individuals with the current disease or problem in question. The test must be able to correctly identify patients with the illness and correctly dismiss healthy individuals. Sensitivity refers to how good a test is at correctly identifying individuals who have the disease. Specificity refers to how good a test is at correctly identifying individuals who are well. Positive predictive value refers to the probability that an individual with a positive test result has the disease/problem and negative predictive value refers to the probability that an individual with a negative test result is well.

Screening for distress in cancer patients

Assessment and screening for psychological distress in cancer patients has developed over the past two decades. The NCCNs panel of psychosocial distress management (1997) initiated a systematic evaluation of psychological distress in cancer patients. They used the model from pain management, as similar barriers in the patient’s and the physician’s attitudes were experienced with pain as with distress. The Distress Thermometer (DT), a one-item question for the patient to rate their distress on a scale from 0-10 was initiated. In the late 1990s clinical guidelines for distress were established and in 2003 the NCCN panel published standards for psychosocial care and distress management:

Distress should be recognized, monitored, documented, and treated promptly at all stages of disease. All patients should be screened for distress during the initial visit, at appropriate
intervals, and as clinically indicated, especially with changes in disease status such as remission, recurrence, disease progression. Screening should identify the level and nature of the distress. Distress should be assessed and managed according to clinical practice guidelines [13]. In 2004 Canada approved distress to be the 6th vital sign to be measured (after pulse, respiration, blood pressure, temperature and pain). National guidelines from the UK and Australia also recommend routine use of screening for emotional distress in cancer patients [68, 69]. In Sweden, the National Cancer Strategy for the Future (2009) proposed that measurement of HRQoL and patient satisfaction with care should be included in all national quality registers in the field of cancer as a way to strengthen follow-up and evaluation from a patient perspective [70].

**Identify cancer patients with distress in clinical practice**

In clinical practice, oncology nurses and physicians show deficiencies in their abilities to correctly identify cancer patients with emotional distress, and the patients’ problems remain unrecognized and untreated to a great extent [71-73]. Most oncologists perceive barriers in communicating on psychosocial aspects with the patients. These barriers include lack of time and resources to take care of discovered problems, and lack of methods to evaluate the patients’ psychosocial health in clinical practice [74, 75]. Early detection of emotional distress is warranted and there is a need for systematic identification systems in clinical practice [15]. Mitchell et al. examined cancer professionals’ (specialists’ and non-specialists’, nurses’ and doctors’) acceptability of using common screening methods, and only 6% reported using a formal questionnaire while the majority (62%) relied on their own clinical judgments. Of the professionals 75% reported that they probably would accept ultra-short methods such as the DT for use in clinical care [76].

**Screening procedure**

Screening tools for mental disorders are generally self-assessment questionnaires that measure symptoms in an easy-to-understand language. The analysis of the results takes place with reference to a cutoff score, which defines whether the sum of the positive responses indicates the likely presence of a mental disorder (screening-positive persons) or not (screening-negative persons). Between those levels, there is a group of “doubtful cases”, expressing mild functioning impairment and symptoms. Some screening instruments distinguish only between “non-cases” and “clinical cases”, while others divide the levels into three groups including “doubtful cases”. There is a need to further explore how to handle “doubtful cases” as they are vulnerable and may benefit from early identification and early support interventions. It is recommended and essential to use a careful clinical assessment and management in addition to the use of a screening tool [77]. To establish diagno-
sis, a structured standardized interview is required, or further assessments with more diagnosis-specific questionnaires. In screening for anxiety and depression in cancer patients it is often preferable to use a screening instrument with high sensitivity with the knowledge that some patients will be “false positive” when further assessed. Choosing a screening instrument with high specificity will increase the risk of missing possible cases. The procedure for screening individuals for distress to distressed individuals in need of support is illustrated in Figure 1.

Figure 1. Screening procedure consists of screening, feedback from the healthcare staff to the patient with information, recommendation, and referral to further assessment or/and support services, clinical assessment face to face or with expanded questionnaires, and support services appropriate for the patients’ distress.

**Questionnaires and assessments**

Screening tools for psychological distress in cancer patients are divided into ultra-short measures consisting of 1-4 items, short measures consisting of 5-20 items and long measures of 21-50 items. The DT is an ultra-short measure, first evaluated in 1998, for screening of psychological distress in prostate cancer patients [78]. In a recent meta-analysis of the overall accuracy for ultra-short measures the DT was comparable to the short measure HADS (14 items) [77].

The HADS is a short self-assessment scale designed in 1983 for detecting presence and severity of anxiety and depression in patients under investigation and treatment for medical and surgical diseases [79]. The HADS consist of one anxiety and one depression subscale. HADS is the most extensively validated and widely used scale in screening for anxiety and depression in cancer patients [80], with a balance between sensitivity and specificity of about 0.80 for anxiety and for depression using a cut-off >7 on the anxiety or depression subscales (HADS >7) [81]. In a recent systematic review of existing tools the HADS demonstrated adequate psychometric properties. Ten of the studies showed high, fourteen studies showed moderate, and two studies reported low screening performance for the HADS. However, the cutoff
scores for distinguishing anxious or depressed patients from non-anxious, non-depressed patients differed widely between studies with cutoffs from 5-11 for the subscales and 8-22 for HADS total score [82]. A meta-analysis conducted to find optimal, empirically derived cutoff scores for the HADS suggests the best thresholds for screening of mental disorder scores as HADS 10 to 11 total score, 5 on the depression subscale, and 7 or 8 on the anxiety subscale [83]. The HADS have both strengths and limitations; it performs well as a screening instrument but is not recommended as a case-finding instrument [84]. In a recent review, the HADS ability to differentiate between the construct anxiety and depression is questioned [85]. The construct validity of the Swedish version of HADS has been validated in breast cancer patients, supporting the utility of scoring based on the original bi-dimensional model [86].

Beck Depression Inventory (BDI) is an example of a long diagnostic measure commonly used in clinical practice and also used for screening [87, 88]. BDI was designed in the early 1960s, to assess presence and severity of symptoms of clinical depression in patients in mental health facilities. A second major revision was conducted in 1996 [89], and after that it was widely used as an assessment tool by healthcare professions and researchers in a variety of settings. BDI-II consists of 21 items and is also used for screening and assessment of depression in cancer patients [87, 90, 91].

Clinical assessment of distress and structured clinical diagnostic interview
Psycho-oncological clinical assessments are performed by specially trained oncology staff and have a structured format with open-ended questions. Compared to screening, it is an extended inventory of the patients’ functioning and symptoms. The information from the screening can be complemented at the clinical assessment with an inventory of the patient’s social network, planned, ongoing or finished oncology treatment, as well as earlier depression, which is a well-known risk factor for emotional distress. The staff member is responsible for formulating questions and encouraging the patient to freely express thoughts and emotions and for ensuring that psycho-oncological topics including symptoms of anxiety and depression are covered. Such a face to face assessment is an appropriate second step to evaluate patients who may suffer from psychosocial concerns according to a screening tool. It can also prioritize the different problems according to the patient’s functioning and symptoms and decide the focus of possible further interventions together with the patient [92].

In cases of severe symptoms and with the aim of diagnosing anxiety or depression or other mental disorders, the Structured Clinical Interview for DSM-IV (SCID) is recommended. A SCID is performed by a trained expert, who besides the structured pre-constructed questions formulates additional questions to verify the diagnostic criteria. The standardized Composite International Diagnostic Interview (CIDI) is another option. It is manual-
Based, with questions and response interpretations built on criteria from diagnostic systems, DSM or similar. However, most oncology patients who experience significant difficulties, including psychological distress, symptoms of anxiety and depression, do not have a psychiatric diagnosis.

Screening for psychological distress is also questioned. Thombs et al. are critical and call attention to lack of randomized controlled trials to support evidence that distress screening improves health outcomes. They point out that the concept of distress is poorly operationalized and that the NCCN’s guidelines lack evidence on patient benefit [93]. The benefit of distress screening has also been questioned, as almost two-thirds of patients with treated disorders remain distressed and the identification of patients with untreated psychiatric disorders is low [94].

The prevalence of patients judged to have emotional distress is commonly higher when using questionnaires for screening, compared to a structured interview by a specialist. Advantages with questionnaires are their possibility to be used in large populations. Even though a proportion of patients will be “false positive” cases, focus should thereafter be on those who during a clinical assessment turn out to be clinical cases for support interventions. Already at feedback from healthcare providers some patients declare no need or no wish for further assessment or support. The amount of “false positives” may be seen as a disadvantage in using questionnaires. Using clinical assessment or structured interview as the screening program would imply a higher specificity (less false positive), but is not feasible in clinical care as it requires large personnel resources. Further research is warranted concerning what screening questionnaire to use and how to implement routine screening in clinical care. Several previous studies have been conducted in screening for distress in cancer patients, which is important in the proceeding research and clinical work with psychological issues, often with a specific target such as prevalence [15, 21], screening tools [95, 96], or support and treatment [51, 97].

The screening procedure has also been studied. In a previous RCT on screening for distress, three various screening conditions were evaluated with the most comprehensive condition consisting of several questionnaires, individual feedback on telephone, and referral to resources as the best predictor of decreased anxiety and depression [98]. In another large RCT, screening with computerized triage versus personalized triage suggest similar results where personalized feedback to the patient by telephone to discuss referral options facilitate for the patients to access services offered to them, resulting in decreased distress [99]. Sellic et al. used retrospective data to evaluate the process of screening, telephone feedback from a psychosocial department and one or more appointments with a psychosocial counselor in a routine support care program [80]. However, no prospective longitudinal study of the whole screening procedure including screening, feedback with referral, clinical assessment, and completed psychosocial support services and the effect on distress, anxiety, depression and HRQoL has previously been done.
Rationale for the current thesis

Most cancer patients seem to cope with the disease and its medical treatment consequences in an adequate way. However, every fourth to every third patient experiences psychological distress, anxiety or depression to such extent that they may require extended support during their cancer trajectory. There is a need to evaluate methods to identify patients who requires extended support in addition to the support provided in standard care.

Nurses and doctors in clinical care have deficiencies in their abilities to correctly identify patients in need of extended assessment, support, and treatment. Many clinically relevant physical and psychological problems remain unrecognized, and patients with distress remain untreated despite access to support and treatment options. Studying and extending the use of PROMs in clinical practice is one way to increase knowledge. It will, for example, improve the patients’ possibilities to express their own experienced levels of functioning and symptoms, increase the possibility of identifying patients with psychological distress, and confirm symptom-free patients. It is important to evaluate methods, not only to identify the distressed patients, but also to measure the level of symptoms and patient functioning. More knowledge about what happens to patients who initially appear to cope well and studies of the stability and changes of anxiety, depression, and HRQoL over time for these patients are needed to evaluate to what extent re-assessment is needed.

Cancer consists of over 200 different diagnoses, and the focus for research is often on the most common diagnoses such as breast or prostate cancer. To study screening and assessment of anxiety and depression in a clinical setting including different cancer diagnosis, both men and women and patients at different stages in the disease trajectory expand the knowledge of heterogeneous patients who are cared for in oncology care. There is a need to study the feasibility of existing screening instruments for anxiety and depression when used in a routinely clinical setting and to examine a more novel instrument, the DT in a Swedish oncological context. More knowledge is needed in order to improve the management of psychological aspects in cancer patients and use of healthcare resources in an effective way.
Aims

The overall aim of this thesis was to evaluate methods of screening and assessment of distress, anxiety, and depression in cancer patients. A further aim was to evaluate the effects of a psychosocial support intervention and to explore changes in distress, anxiety, depression, and HRQoL in cancer patients. Specific aims of Papers I-IV were:

I To explore the feasibility of screening, and changes of anxiety, depression, and HRQoL over six months in patients screened with symptoms according to HADS. A further aim was to explore the use and the effects of a screening, assessment, and support intervention procedure compared to standard care.

II To validate the Swedish version of the DT against the HADS for screening of distress, and to explore how well it measures changes over time compared to HADS.

III To compare HADS with a thorough clinical assessment with regard to the number of patients judged to be at risk for anxiety, depression, and distress and the outcomes as a function of age, sex, and treatment intention.

IV To explore stability and changes over six months in two cohorts of oncology patients scoring as non-cases according to HADS at initial assessments. In addition, to compare HRQoL of stable non-cases with that of the general population, and lastly, to explore a cut-off >4 on HADS subscales for identification of individuals who may be candidates for repeated screening or a clinical assessment.
Methods

Design
Two studies are included in this thesis. Study I was an intervention study that used a longitudinal prospective historical control group design. The intervention was conducted at the Psychosocial Outpatient Clinic (POC) that was part of the regular services at the Department of Oncology, Uppsala University Hospital. For that reason, the control group, designated the standard care group (SCG) was included first and then the intervention group (IG), to avoid interference with standard care possibilities of referral and utilization of psychosocial support. Study II used a cross-sectional design. The sample from Study I is used in Papers I, II and IV, and the sample from Study II is used in Paper III.

Study I
Patients and settings
The patients were recruited from the Department of Oncology, Uppsala University Hospital between September 2005 and June 2006. Exclusion criteria were inability to speak and understand Swedish, cognitive impairment, or constant need of hospital care (Karnofsky <40). Out of 751 eligible patients, 644 consecutive patients were approached at the time (<1 month) of their first visit, regardless of diagnosis, stage, or time since diagnosis. A research assistant (RA) gave verbal and written information and invited the patients to participate in the study. A total of 547 (85%) patients consented to participate. Fifty-two (10%) dropped out before completing baseline assessment, whereas 495 completed the baseline assessments. The final assessment was completed after six months by 340 (62%) patients (Figure 2).
Figure 2. Flow charts, Study I.  

a 0-7 points on the anxiety and the depression subscales,  
b 8-21 points on the anxiety or/and the depression subscales,  
c Patients with <8 were not included in the follow-up at the beginning of the project. Discontinued includes patients who actively discontinued participation and patients who stopped returning questionnaires.
Paper I

Patients
All outcomes from the 176 patients with >7 on any of the subscales were analyzed and comparisons were made between SC (n=92) and IG (n=84) patients. Furthermore, all 751 eligible patients (380 and 371, respectively in the two groups) as well as the 495 patients (248 and 247, respectively) who completed the HADS were shown in a participant flow chart.

Clinical sample of oncology patients
Oncology patients (n=97) who were referred or who referred themselves to the POC for psychosocial support 2005-2007 constituted a clinical sample. The patients completed HADS and EORTC QLQ-C30 before onset of support services. HADS and EORTC QLQ-C30 data (unpublished data) are presented here in the results of the thesis as a comparison to patients identified by screening with HADS. Demographic and medical characteristics for the clinical sample of 97 patients were similar to those of our study group, except that the majority was women (74%). No other data for the clinical sample will be presented.

Standard care
Patients in the SCG were not informed about the results of the screening and they did not receive any information on additional psychosocial support besides the general information given in routine clinical practice. They were free to contact the POC (self-referral), and referrals from health-care staff were possible in routine clinical practice. The POC consisted of three part-time employee nurses and with an oncologist, a dietitian, a physiotherapist, a social worker and a deacon from the hospital church as consultants and collaborators. Additionally, there were two social workers at the Department of Oncology.

The intervention
The intervention was for patients with anxiety or depression symptoms according to screening with HADS >7 (Figure 2). It consisted of telephone follow-up, clinical assessment, and further psychosocial support (see below).

The RA contacted IG patients by telephone within a week of the screening assessment, and recommended referral to the nurse at the POC for further clinical assessment and psychosocial support. If the patient consented, the RA sent the referral. The patients could also get an extra phone call from the nurse at the POC for additional information about the intervention.

The clinical assessment (45-60 minutes each) was performed face to face at the POC by an oncology nurse with an undergraduate degree in CBT. It included an assessment of the patient’s need for psychosocial support related
to individual problems and risk factors, as well as assessment of the patient’s coping skills, social support, functioning, and information about available support services. Decisions about continuing psychosocial support were made jointly by the nurse and the patient and depended on the degree of anxiety and depression, type of problems, and patient preferences.

Psychosocial support consisted of counseling, individual CBT, support groups or referral to other specialists. Counseling (1-2 sessions) included psycho-education, problem-solving, and practical help, e.g. information and brochures from the Swedish Cancer Society or patient assistant organizations, fund applications for items such as rehabilitation or direct economic support. Individual CBT (>2 sessions) was problem focused and goal-oriented. The patients formulated their goals on a written handout between the first and the second session after decision on an individual contact. Home-work, depending on the type of problem and the goal was performed by the patient between the sessions. The last session contained a summing-up, how to move forward using new strategies or acceptance, and an evaluation of the goals. Support groups consisted of education and support for patients and next of kin (6 sessions), and the “Look Good Feel Better” workshop for women undergoing oncology treatment [100]. Referrals to; oncologist, GP, psychiatrist, speech therapist, and social worker were performed.

Paper II

Patients
All 462 patients who completed the DT and the HADS at first assessment were analyzed and described for six-month follow-up.

Paper IV

Patients

Study group
All 319 patients with <8 on the HADS anxiety and the depression subscales and changes from the initial assessment over six months regarding anxiety, depression, and HRQOL were analyzed and described, designated study group (SG) in Paper IV. Fifty-three patients were lost to follow-up because patients with HADS <8 were not included in the follow-up assessments at the beginning of the project. The study protocol was modified in November 2005 with follow-up assessments for all patients.

Validation group
A validation group (VG) was used to investigate if stability and/or changes in anxiety and depression symptoms in the SG could be replicated in another
group of oncology patients. Patients in the VG were included in a random-ized controlled trial (RCT) between September 1993 and December 1995. Newly diagnosed patients with colorectal, gastric, prostate, or breast cancer were included. The aim of the RCT was to evaluate the effects of individual support and/or group rehabilitation on anxiety, depression, and HRQoL. There were no significant effects of the intervention compared to standard care [11]. Thus, we used the data for all patients from the initial assessment and the three and six-month follow-ups as a VG to the SG. A total of 309 patients, with HADS<8 on the anxiety and the depression subscales at the initial assessment and approached for follow-up, constituted the VG, and 266 (86%) of them completed the six-month assessment.

Normative data for EORTC QLQ-C30
To compare stable non-cases in the SG with a random sample of the Swedish population with regard to HRQoL, normative published data for EORTC QLQ-C30 from 2008 (n=4910) were used [101]. Published EORTC QLQ-C30 data from another random sample of the Swedish general population from 2005 (n=3069) were used [102] for comparison with stable non-cases in the VG.

Study II

Paper III

Patients and settings
Oncology patients at the Department of Oncology, Uppsala University Hos-pital were recruited between April 2009 and October 2010. The patients were identified so as to equally represent both sexes, different ages (<65/≥65), treatment intention (curative/palliative), type of oncological ther-apy (chemotherapy/radiotherapy), and intensity of care (outpa-tient/inpatient). To achieve a sample with the desired heterogeneity, an RA identified patients from the oncology department’s computerized lists of current inpatients and outpatients without knowledge of whether or not the patient was experiencing distress. Exclusion criteria were inability to speak and understand Swedish, cognitive impairment, or constant need for hospital care (Karnofsky<40). Two-hundred and fifteen oncology patients were ap-proached by an RA who provided verbal and written information and invited the patients to participate. One hundred and seventy-one patients (80%) con-sented to participate, and twenty-five (15%) dropped out before completing baseline assessment, whereas 146 (85%) patients completed the study. The characteristics of the study samples are shown in Table 1.
The thorough clinical assessment
An oncology nurse, and a social worker (the assessors), both with an undergraduate degrees in CBT and experience working with oncology patients, performed the clinical assessments. Each session was scheduled to take 60 minutes and conducted undisturbed in a separate room at the oncology department. The clinical assessment had a structured format and a predefined content including open-ended questions covering the following topics: the patients’ current situation, social support, anxiety and depression symptoms, additional emotional reactions and possible problems due to the cancer or its treatment. The assessors had not read the patients’ medical records and were blinded to the patients’ HADS scores. Patients judged to be anxious, depressed, or distressed during the session were referred for support and treatment, provided they agreed to such referral (n=12). A leaflet with information about where to turn and whom to contact for self-referral to support later on was given to all patients. The clinical assessment was documented in the patient’s medical record.

Table 1. Characteristics of identified and consented participants in Study II, regarded to treatment intention, age, and sex (n=171)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Number of patients</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curative treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;65 years female</td>
<td>33</td>
<td>19</td>
</tr>
<tr>
<td>&lt;65 years male</td>
<td>22</td>
<td>13</td>
</tr>
<tr>
<td>≥65 years female</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>≥65 male</td>
<td>27</td>
<td>16</td>
</tr>
<tr>
<td>Palliative treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;65 years female</td>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td>&lt;65 years male</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>≥65 years female</td>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td>≥65 male</td>
<td>22</td>
<td>13</td>
</tr>
</tbody>
</table>

Data collection
Procedure
Study I
Questionnaire data were collected at four time points over six months: at the time (<1 month) of the patients’ first visit to the Department of Oncology, and after one, three, and six months (Table 2). For IG patients who accomplished clinical assessment and support, a patient satisfaction questionnaire was collected by regular mail one week after completion.
Study II
The patients completed questionnaires (Table 2) within seven days before the scheduled time point of the thorough clinical assessment. The assessors completed a study-specific protocol after the clinical assessment (see measurements below). Additionally, a patient satisfaction questionnaire concerning the clinical assessment and including socio-economic questions was collected by regular mail one week after the clinical assessment. To evaluate agreement between the two assessors, 10% of the assessments (eight made by the oncology nurse and eight by the social worker) were audio recorded. The oncology nurse and the social worker listened to each other’s interviews and made a secondary judgment (blinded to the previous assessment) in the study-specific protocol.

Measures in Study I and Study II

Distress
To assess distress, the one-item DT developed for identifying psychological distress in patients with cancer was used. The patient reports distress on a thermometer similar to the 11-point Likert scale with scores from 0 (no distress) to 10 (high distress) [78]. The accompanying Problem List which identifies sources of distress was also used. It consists of 35 problems commonly experienced by cancer patients, categorized into five areas: practical problems, family problems, emotional problems, spiritual/religious concerns, and physical problems. Patients indicate (yes or no) if the items have been a problem during the present week [13]. The DT was translated into Swedish according to the forward- and back-translation procedure [103]. Translation of the American version into Swedish was done by an authorized bilingual translator who was born and grew up in Sweden. Back-translation of the Swedish version into American English was done by an authorized bilingual translator who was born and grew up in the USA. The differences between the two versions were discussed in a telephone conference. The few cases of divergent back-translated terms and phrases were discussed in order to agree upon the best translation. HADS total score ≥15 points was also used to assess distress (see below).

Anxiety and depression
The HADS was used for screening and assessment of symptoms of anxiety and depression. It consists of 14 questions, seven measuring anxiety and seven measuring depression. The patient is asked to rate emotional status during the past week on four-graded Likert scales from 0-3. The score of each scale is summarized with a maximum of 21 points. We used the recommended cutoff scores for each subscale: HADS 0-7 points categorized as non-cases, HADS 8-10 points as doubtful cases, and HADS 11-21 points as
clinical cases [79]. For screening we used >7 on any of the two subscales. We chose the cutoff score recommended for doubtful cases to reduce the number of undetected cases. HADS total scale can be summarized with a maximum of 42 points. HADS 0-14 points categorized as non-distress and HADS 15-42 points categorized as distress are recommended when using the total scale [104].

**Health-Related Quality of Life**
The EORTC QLQ-C30 version 3 was used to assess HRQoL during the present week. It consists of 30 items, of which the first 28 items have four-graded Likert scales format from 0=not at all to 4=very much. The remaining two items assessing global quality of life and health status, respectively, have seven-graded scales from 1=very poor to 7=excellent. The responses are categorized into five functional scales (physical, role, cognitive, emotional, and social functioning) three symptom scales (fatigue, pain, nausea and vomiting) and a global QoL scale. The six single items are: dyspnea, appetite loss, sleep difficulties, constipation, diarrhea, and one item addressing financial impact from the disease [105]. All questionnaire responses were transformed into scores on a linear 0-100 graded scale according to the EORTC scoring manual [106]. For functional scales and global QoL, a higher score means better level of functioning, while for the symptom scales, a higher score means more severe problems.

**Clinical judgment by the assessors**
Four domains, i.e. anxiety, depression, additional emotional problems (e.g. stress, crisis, sadness, grief, fear, disappointment, irritation, body image) and other psychosocial problems (financial, social, or existential) were judged by the assessors in a study-specific protocol completed after the clinical assessment. For each domain, the assessors categorized the patients as non-cases, doubtful cases, or cases, categories analogous to those used in the HADS. In addition, complementary information for each domain could be noted in the protocol. Patients categorized as doubtful cases in two or more domains or as cases in at least one of the four domains were judged to be distressed. Patients categorized as having no or at most one doubtful case were judged to be non-distressed.

**Patient satisfaction**
A modified patient satisfaction questionnaire used in earlier studies [107, 108] was used to assess satisfaction with the clinical assessment and support provided in the intervention in Study I, and satisfaction with the thorough clinical assessment in Study II. Using category scales the patient was asked to rate to what extent the clinical assessment met the patient’s expectations, the content of the session, the most relevant problem for the patient to discuss, the result of the session (referral), number of sessions, and if he/she
would recommend clinical assessment to a friend in a similar situation. The questionnaire also included one question where the patient was asked to estimate on a four-graded scale from “not at all” to “to a great extent” to what extent 18 specific items were discussed during the clinical assessment and psychosocial support.

**Medical and socio-economic data**

A study-specific questionnaire (six questions) to collect socio-economic data was sent by regular mail together with the patient satisfaction questionnaire one week after the clinical assessment in Study II. One reminder including an extra set of the questionnaire was sent after two weeks. In Study I, demographic and medical background data were collected from the medical records.
Table 2. Time points of assessment and questionnaires from Studies I and II, used in Papers I-IV.

<table>
<thead>
<tr>
<th>Questionnaires from Study I used in Papers I, II and IV</th>
<th>n</th>
<th>First visit (&lt;1 month)</th>
<th>1 month</th>
<th>3 months</th>
<th>6 months</th>
<th>After completed intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper I</td>
<td>176</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>HADS</td>
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<tr>
<td>QLQ-C30</td>
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<td>PS</td>
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<tr>
<td>Paper II</td>
<td>462</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>HADS</td>
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<tr>
<td>DT</td>
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<tr>
<td>Paper IV</td>
<td>319</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>HADS</td>
<td></td>
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<td>DT</td>
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<tr>
<td>QLQ-C30</td>
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<table>
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<tr>
<th>Questionnaires and assessment from Study II used in Paper III</th>
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<tbody>
<tr>
<td>n</td>
</tr>
<tr>
<td>Paper III</td>
</tr>
<tr>
<td>HADS</td>
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<td>QLQ-C30</td>
</tr>
<tr>
<td>CA</td>
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<tr>
<td>PS</td>
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</tbody>
</table>

Abbreviations: CA, Clinical assessment; n, number of patients; PS, patient satisfaction form; QLQ-C30, EORTC QLQ-C30; (X), collected but not used in the paper.

Power

A power analysis was made for the comparisons between IG and SCG in Study I. A meta-analysis of trials of psychosocial interventions in patients with cancer who were screened for anxiety reported an effect size of 0.85 [109] meaning that 45 patients in each group would give a 92% power using a two-tailed test with the significance level $p<0.05$.

Data management and statistical analysis

Statistical analyses were performed using Statistical Packages for the Social Sciences (SPSS) version 14-22. The level of statistical significance was set at $p \leq 0.01$ in Study I and $p \leq 0.05$ in Papers II-IV. Missing values within subscales of the EORTC QLQ-C30 and the HADS were replaced with the mean of each patient’s responses, provided that at least half of the subscale items had been completed [106]. Because of an error in the web version of EORTC QLQ-C30, questions 29 and 30 (global QoL) all these answers were
excluded at baseline (n=79), at one month (n=24), and at three months (n=15). The error was detected and corrected in March 2006.

Attrition analyses
Attrition analyses were performed to compare patients completing with patients not completing the study. The independent sample t-test was used for continual variables, the Chi-square test was used for categorical variables, and the Mann-Whitney U-test was used for skewed data and ordinal variables.

Paper I
The Chi-square test and the t-test were used for between-group comparisons at baseline. ANOVA with repeated measures was used to explore the symptom development and the effects of the intervention on anxiety, depression, and HRQoL from baseline and over six months. Pair-wise comparisons, in cases of statistically significant differences, were performed using least significance difference (LSD). Data from all patients who completed the first and the six-month assessments were used to explore changes in HADS score categories. Changes in EORTC QLQ-C30 scores from baseline to the six-month follow-up were interpreted in terms of clinical relevance as small (5-10 points), moderate (11-19 points), or large (≥20 points) mean changes [110].

Paper II
Descriptive statistics were used for frequencies of the study population’s distribution on DT. Receiver Operating Characteristic analyses (ROC-curve) was used to investigate sensitivity and specificity of the Swedish translation of the DT at baseline, and at one, three, and six months. In addition, positive predictive values (PPV) and negative predictive values (NPV) were calculated for all different scores on the DT at baseline and for the cut-off score ≥4 at one, three, and six months. ANOVA with repeated measures was used to explore the development of distress over the six-month follow-up regarding HADS and the DT, respectively. Pair-wise comparisons, in cases of statistically significant differences, were performed using least significant difference (LSD). Kappa analyses were used to investigate the DT’s correspondence with HADS at repeated assessments during follow-up. Spearman’s rho was used to explore correlations between the DT and the HADS anxiety and depression subscales. Chi-square test was used at baseline to compare the DT’s ability to discriminate between medical and demographic subgroups. Chi-square test was also used for the DT and the HADS respectively, to
compare distressed patients with non-distressed patients regarding the number of problems on the accompanying “Problem List” at the initial assessment.

Paper III
Descriptive statistical analyses were used to investigate the outcomes of the HADS and the clinical assessment, respectively. We combined doubtful cases and clinical cases for each subscale of the HADS and the clinical assessment, respectively, as our aim was to examine HADS outcomes as a screening tool and because the number of doubtful case or clinical cases was quite small. Cohen’s kappa was used to explore agreement between the HADS and the clinical assessment. ROC analysis was used to evaluate HADS cut-off scores. Descriptive statistical analyses were also used to investigate the outcomes of the patient satisfaction questionnaires. The content of the answers to the open-ended question were divided into categories (by the first author). Some answers included more than one problem/need and could thereby contribute to more than one category. A second categorization was performed by a second assessor (not one of the authors) and agreement between the two assessments was achieved through discussion. Descriptive statistical analysis was used to evaluate the agreement between the two assessors.

Paper IV
As most variables were non-normally distributed, primarily, non-parametric tests were used. The Mann-Whitney U-test and the Chi-square test were used to compare patients completing with patients who dropped out from the study in the SG and the VG, respectively. The Mann-Whitney U-test was also used to compare stable non-cases with unstable non-cases at the initial assessment. The Friedman test was used to explore changes from the initial assessment over the six-month follow-up with regard to anxiety, depression and HRQoL in unstable non-cases in the SG and in the VG, respectively. Changes in the EORTC QLQ-C30 scores were also interpreted in terms of clinically relevant mean changes, as small (5–10 points), moderate (11–19 points), or large (≥20 points) [110]. Comparisons with normative data were adjusted for gender and age [111].

Ethical considerations
Ethical approvals were obtained from the Regional Ethical Review Board in Uppsala for Study I (Reg. no. 2004-Ö-436) and for Study II (Reg. no. 2009/070). Eligible patients received verbal and written information about
the studies and the voluntary participation. An informed consent form was signed by all participating patients. Answering questionnaires concerning distress, anxiety, depression, and HRQOL may raise emotions and thoughts that for some patients can be unpleasant. However, patients have previously reported a feeling of confidence after answering this kind of questionnaire, as they can relate to the statements and recognize symptoms. Patients in the intervention group who were recommended referral may have reacted with unpleasant feelings about the result of the screening. They could, however, decline referral or get an extra phone call from the oncology nurse with additional information. The intervention in Study I and the clinical assessment in Study II may also have been helpful for patients to get support. The benefits from the studies for the participants and for future cancer patients regarding increased knowledge of methods to identify patients who may require additional support were considered to exceed the potential ethical harm the studies could have caused the participants.
Results

Medical and demographic background data for all participants are presented in Table 3. Mean age was 62 years, with the youngest 18 and the oldest 88 years. Half of the patients were men and half were women. Most patients had a first-time cancer but those with recurrence and those with palliative treatment were also represented. Patients with a variety of cancer diagnoses were represented, although prostate, breast, and gastrointestinal cancers were most common. Most patients received oncological treatment with radiotherapy or chemotherapy, and the majority received combined treatments over the six-month follow-up in Study I (Table 3).

Study I

Paper I

Feasibility and outcomes of the screening, and of the intervention procedure

Four-hundred and ninety-five oncology patients were screened with HADS at the time (<1 month) of their first visits to the oncology department. A total of 319 (64%) patients scored <8 on HADS anxiety and depression scales. The screening identified in total 176 (36%) patients with anxiety or depression symptoms according to HADS >7. Half of them (n=84) received the intervention consisting of screening follow-up with referral, clinical assessment, and psychosocial support. However, at the telephone follow-up with the RA, over half (n=48) of these patients declined referral to clinical assessment with an oncology nurse. Twenty-five patients stated “no need” as explanation for declined referral. Thirty-six IG patients consented to referral and attended clinical assessment. In addition to anxiety and depression, problems with negative thoughts, emotional distress, body changes, communication with relatives, and negative medical experiences were revealed in the clinical assessment. Twenty IG patients received continuing psychosocial support after completed clinical assessment (Figure 3). Five (5%) patients in the SCG received clinical assessments, and two of them continued individual CBT.

There were no statistically significant mean differences between the IG and the SCG at the initial assessment or at follow-up with regard to anxiety,
depression or HRQoL (see Paper I). The following results are presented for all patients with HADS >7 at the initial assessment (n=176), as SCG and IG were comparable on all variables.

**Screening**

HADS >7 n=84

**Telephone follow-up**

with referral n=84 ➔ b Declined referral n=48

**Clinical assessment** n=36 ➔ c Completed n=16

**Psychosocial support** n=20

a Support activity:

Individual CBT n=13
Counselling n=5
Referral to other specialists n=5
oncologist, psychiatrist, GP, speech-therapist, social worker
Education and support group n=3
Look good feel better group n=3

Figure 3 Flowchart of the intervention group. HADS >7, 8-21 points on the anxiety or/and the depression subscales; a Nine patients used two support activities. b, c Patients’ explanations for declined referral and completed contact; no need (b n=25, c n=9), already established support (b n=6, c n=3), treatment in home town, too far to travel (b n=6, c n=1), gave no reason (b n=5), not interested (b n=4), poor health (b n=2, c n=3).
Table 3. Demographic and clinical characteristics of the patients in Studies I and II, Papers I-IV, n (%)

<table>
<thead>
<tr>
<th></th>
<th>Study I n=547</th>
<th>Study II n=171</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (min-max) years</td>
<td>61 (21-86)</td>
<td>62 (18-88)</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>103 (58)</td>
<td>231 (50)</td>
</tr>
<tr>
<td>Male</td>
<td>73 (41)</td>
<td>231 (50)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/cohabitant</td>
<td>130 (74)</td>
<td>352 (76)</td>
</tr>
<tr>
<td>Separate households</td>
<td>8 (5)</td>
<td>11 (2)</td>
</tr>
<tr>
<td>Single, widow/widower</td>
<td>38 (22)</td>
<td>98 (21)</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urogenital cancer</td>
<td>35 (20)</td>
<td>119 (26)</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>55 (31)</td>
<td>122 (26)</td>
</tr>
<tr>
<td>Gastro-intestinal cancer</td>
<td>42 (24)</td>
<td>86 (19)</td>
</tr>
<tr>
<td>Skin cancer</td>
<td>5 (3)</td>
<td>36 (8)</td>
</tr>
<tr>
<td>Gynecological cancer</td>
<td>5 (3)</td>
<td>14 (3)</td>
</tr>
<tr>
<td>Hematological cancer</td>
<td>7 (4)</td>
<td>19 (4)</td>
</tr>
<tr>
<td>Lung cancer</td>
<td>8 (4)</td>
<td>20 (4)</td>
</tr>
<tr>
<td>Sarcoma</td>
<td>3 (2)</td>
<td>4 (1)</td>
</tr>
<tr>
<td>Head neck cancer</td>
<td>8 (4)</td>
<td>10 (2)</td>
</tr>
<tr>
<td>CNS tumor</td>
<td>7 (4)</td>
<td>18 (4)</td>
</tr>
<tr>
<td>Other</td>
<td>1 (0.5)</td>
<td>14 (3)</td>
</tr>
<tr>
<td>Primary cancer</td>
<td>131 (74)</td>
<td>396 (86)</td>
</tr>
<tr>
<td>Local only</td>
<td>70</td>
<td>235</td>
</tr>
<tr>
<td>Loco-regional</td>
<td>42</td>
<td>97</td>
</tr>
<tr>
<td>Distant metastases</td>
<td>19</td>
<td>46</td>
</tr>
<tr>
<td>Inextirpable</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>Suspect malignancy</td>
<td>4</td>
<td>4 (1)</td>
</tr>
<tr>
<td>Missing</td>
<td>12 (7)</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Cancer recurrence</td>
<td>33 (19)</td>
<td>60 (13)</td>
</tr>
<tr>
<td>Local only</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
<td>Loco-regional</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Distant metastases</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>Treatment received</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgery</td>
<td>120 (68)</td>
<td>296 (63)</td>
</tr>
<tr>
<td>Radiotherapy</td>
<td>102 (58)</td>
<td>272 (59)</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>80 (45)</td>
<td>185 (40)</td>
</tr>
<tr>
<td>Endocrine therapy</td>
<td>35 (20)</td>
<td>102 (22)</td>
</tr>
<tr>
<td>Antibody</td>
<td>23 (5)</td>
<td>13 (4)</td>
</tr>
<tr>
<td>Treatment intention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curative</td>
<td>97 (57)</td>
<td></td>
</tr>
<tr>
<td>Palliative</td>
<td>74 (43)</td>
<td></td>
</tr>
</tbody>
</table>

1 Patients could receive more than one treatment modality.
Anxiety and depression at the initial assessment and changes of over time

The HADS mean scores at all points of assessment are presented in Table 4. Anxiety mean score was 10 at the initial assessment and decreased significantly at the one-month follow-up ($F=21.4$, df =3, $p<0.001$) to mean score 8, while depression decreased significantly from the initial assessment to the six-month follow-up ($F=5.9$, df =3, $p=0.001$). The number of patients categorized as clinical cases of anxiety according to HADS >10 was high at the initial assessment (n=53) and decreased at the six-month follow-up (n=33), while the number of clinical cases of depression according to HADS >10 was almost unchanged from the initial assessment (n=21) to the six-month follow-up (n=18). The levels of anxiety and depression decreased significantly over time for patients screened with anxiety and depression symptoms, but the mean for anxiety was still over cut-off score at six months.

For the clinical sample of oncology patients at the POC (unpublished data) evaluated in this thesis, the anxiety mean score was 10, and the depression mean score was 7 (Table 4) before initiation of support services. The number of patients categorized as doubtful cases and clinical cases for anxiety and depression was similar. Thus, at the initial assessment, patients identified by screening with HADS had many similarities with the clinical sample of patients at POC.
Table 4. HADS mean scores (SD) and statistically significantly changes over six-month follow-up for patients with HADS >7, and for patients with HADS<8 at screening and subgroups in Papers I and II as well as one assessment for a clinical sample from the Psychosocial Outpatient Clinic (POC)

<table>
<thead>
<tr>
<th>Anxiety</th>
<th>POC clinical sample</th>
<th>n</th>
<th>Baseline</th>
<th>1 month</th>
<th>3 months</th>
<th>6 months</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper I</td>
<td>HADS &gt;7 total</td>
<td>108</td>
<td>10 (4)</td>
<td>8 (4)</td>
<td>8 (4)</td>
<td>8 (5)</td>
<td>p&lt;0.001 D</td>
</tr>
<tr>
<td>SCG</td>
<td>55 10 (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IG</td>
<td>53 11 (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper IV</td>
<td>HADS &lt;8 total</td>
<td>199</td>
<td>3 (2)</td>
<td>3 (3)</td>
<td>3 (3)</td>
<td>3 (3)</td>
<td>p&lt;0.001 D</td>
</tr>
<tr>
<td>SG Unstable non-cases</td>
<td>41 5 (2)</td>
<td>6 (3)</td>
<td>7 (3)</td>
<td>7 (4)</td>
<td>p=0.001 I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VG Unstable non-cases</td>
<td>35 4 (2)</td>
<td>X</td>
<td>6 (3)</td>
<td>7 (3)</td>
<td>p=0.002 I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SG Stable non-cases</td>
<td>158 3 (2)</td>
<td>2 (2)</td>
<td>2 (2)</td>
<td>2 (2)</td>
<td>p&lt;0.001 D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VG Stable non-cases</td>
<td>225 3 (2)</td>
<td>X</td>
<td>2 (2)</td>
<td>2 (2)</td>
<td>p&lt;0.001 D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depression</th>
<th>POC clinical sample</th>
<th>n</th>
<th>Baseline</th>
<th>1 month</th>
<th>3 months</th>
<th>6 months</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper I</td>
<td>HADS &gt;7 total</td>
<td>108</td>
<td>8 (4)</td>
<td>7 (4)</td>
<td>7 (4)</td>
<td>6 (4)</td>
<td>p=0.001 D</td>
</tr>
<tr>
<td>SCG</td>
<td>55 8 (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IG</td>
<td>53 8 (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper IV</td>
<td>HADS &lt;8 total</td>
<td>199</td>
<td>2 (2)</td>
<td>3 (3)</td>
<td>3 (3)</td>
<td>3 (3)</td>
<td>n.s. 0.239</td>
</tr>
<tr>
<td>SG Unstable non-cases</td>
<td>41 4 (2)</td>
<td>6 (3)</td>
<td>5 (5)</td>
<td>6 (4)</td>
<td>p=0.012 I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VG Unstable non-cases</td>
<td>35 3 (2)</td>
<td>X</td>
<td>7 (4)</td>
<td>6 (3)</td>
<td>p=0.001 I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SG Stable non-cases</td>
<td>158 2 (2)</td>
<td>2 (2)</td>
<td>2 (2)</td>
<td>2 (2)</td>
<td>n.s. 0.977</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VG Stable non-cases</td>
<td>225 2 (2)</td>
<td>X</td>
<td>1 (2)</td>
<td>1 (2)</td>
<td>p&lt;0.001 D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Abbreviations: HADS<8, 0-7 points on the anxiety and the depression subscales, HADS>7, 8-21 points on the anxiety or/and the depression subscales; n, number of patients; SCG, standard care group; IG, intervention group; SG, study group; VG, validation group; X, no time point for assessment; I, increased mean score; D, decreased mean score over six-month follow-up.

**HRQoL at the initial assessment and changes over time**

At the initial assessment mean scores for global QoL, role functioning, and emotional functioning were low, and the mean scores for insomnia and fatigue were high. The mean values for the functioning scales improved and the symptoms decreased over time. However, HRQoL was still impaired at six months for patients identified by screening with HADS (Table 5). The QLQ-C30 mean scores at the initial assessment were similar for patients identified by screening with HADS to that of the clinical sample from the POC (Table 5).
Table 5. Mean values for EORTC QLQ-C30 at the initial assessment for a clinical sample of patients at a psychosocial outpatient clinic, study patients with HADS >7, patients with HADS <8 divided into unstable and stable non-cases, and data from a general population sample.

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Clinical sample</th>
<th>Paper I</th>
<th>Unstable HADS &gt;7</th>
<th>Stable HADS &lt;8</th>
<th>General population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=97 HADS=7</td>
<td>n=176</td>
<td>n=48 HADS&lt;8</td>
<td>n=196</td>
<td>n=196</td>
</tr>
<tr>
<td>Global health status</td>
<td>52</td>
<td>49</td>
<td>65</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>Physical functioning</td>
<td>78</td>
<td>69</td>
<td>81</td>
<td>86</td>
<td>88</td>
</tr>
<tr>
<td>Role functioning</td>
<td>57</td>
<td>52</td>
<td>65</td>
<td>81</td>
<td>88</td>
</tr>
<tr>
<td>Emotional functioning</td>
<td>50</td>
<td>52</td>
<td>74</td>
<td>87</td>
<td>85</td>
</tr>
<tr>
<td>Cognitive functioning</td>
<td>60</td>
<td>69</td>
<td>81</td>
<td>90</td>
<td>88</td>
</tr>
<tr>
<td>Social functioning</td>
<td>64</td>
<td>61</td>
<td>79</td>
<td>88</td>
<td>91</td>
</tr>
<tr>
<td>Fatigue</td>
<td>45</td>
<td>49</td>
<td>35</td>
<td>23</td>
<td>19</td>
</tr>
<tr>
<td>Nausea and vomiting</td>
<td>8</td>
<td>11</td>
<td>9</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Pain</td>
<td>29</td>
<td>33</td>
<td>20</td>
<td>12</td>
<td>19</td>
</tr>
<tr>
<td>Dyspnea</td>
<td>22</td>
<td>31</td>
<td>24</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>Insomnia</td>
<td>46</td>
<td>48</td>
<td>30</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>Appetite loss</td>
<td>26</td>
<td>25</td>
<td>10</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Constipation</td>
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<td>15</td>
<td>14</td>
<td>6</td>
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<tr>
<td>Diarrhea</td>
<td>12</td>
<td>16</td>
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<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Financial difficulties</td>
<td>15</td>
<td>25</td>
<td>13</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

Paper II

Validation of the Swedish version of the Distress Thermometer

The Swedish version of the DT was validated against HADS in a sample of 462 oncology patients. Most patients had a primary cancer diagnosis and received oncological treatment (Table 3). Using HADS ≥15 total score as the gold standard, the Area Under the Curve was 86% (95% CI, 0.82–0.90), sensitivity 87%, and specificity 73% for the DT ≥4. The Swedish DT ≥4 was chosen as most optimal to detect distress in this sample of heterogeneous oncology patients. The psychometric values were quite stable and the DT changed in the same direction as HADS at all four points of assessment over six-month follow-up. The mean levels of distress decreased statistically significantly from the first assessment to the one-month follow-up. Patients with distress, DT ≥4 reported statistically significantly more problems on the DT’s Problem List for all five categories: emotional problems, family problems, spiritual/religious problems, physical problems, and practical problems compared to patients with DT <4. However, even among the non-distressed patients, more than half reported physical problems.
Distress, anxiety, depression, and HRQoL at initial assessment and changes over time in patients screened with HADS <8

A total of 319 patients were screened with HADS <8 at the initial assessment (Figure 2), i.e. categorized as non-cases. The SG was constituted of all patients approached for follow-up (n=266) and the results are presented for patients with answers to one or more follow-ups (n=245). The VG was constituted of 309 patients, with HADS <8 at the initial assessment and approached for follow-up, and the results are presented for patients with answers to one or more follow-ups (n=282).

Demographical and clinical characteristics for the SG are presented in Table 3. Of the patients who completed the initial assessment and the six-month follow-up, 217 SG patients scored anxiety <8 at the initial assessment, and 195 (90%) of them scored anxiety <8 even at six months. For depression, 265 patients scored <8 at initial assessments and 232 (88%) of them even at six months (Figure 4).

The results in the SG and the VG were similar in all outcomes, although there was a decade between the two studies and they were not collected identically. In the SG, during the six months of follow-up, 196 (80%) of 245 patients remained <8 for anxiety and depression at all assessments, i.e. stable non-cases. A total of 49 (20%) patients scored >7 for anxiety or depression on one or several occasions during follow-up, i.e. unstable non-cases. HADS mean scores differed for anxiety (p<0.001) and depression (p<0.001) between stable non-cases and unstable non-cases at the initial assessment, although all patients were categorized as non-cases by HADS. The results were similar in the VG; 244 (87%) of 281 were stable non-cases and 37 (13%) patients were unstable non-cases. For unstable non-cases in the SG and the VG, respectively, anxiety and depression deteriorated statistically significantly over six months (Table 4).

If HADS >4 had been used as cut-offs for anxiety and for depression, most unstable non-cases would have been identified at the initial assessment in the SG as well as in the VG.

Most HRQoL dimensions deteriorated over the six-month follow-up for patients categorized as unstable non-cases, while in patients categorized as stable non-cases, HRQoL were stable and comparable to the general population at the initial assessment (Table 5) and during the entire follow-up (see Paper IV).
Figure 4. Patients who completed the initial and the six months assessment (n=329), Study I, number of patients (%). HADS anxiety and depression categories at the initial assessment and changes in each category to six months. Cases, HADS 11-21; Doubtful cases, HADS 8-10; Non cases, HADS 0-7.

Study II
Paper III
A comparison of the outcomes of HADS with the outcomes of a thorough clinical assessment

The identification of patients resulted in the desired heterogeneity in relation to age, sex, treatment intention, and type of treatment (Table 1). Of 171 consenting patients, 146 (85%) completed the study consisting of questionnaires and a thorough one-hour clinical assessment with an oncology nurse or a social worker at the Department of Oncology. The overall agreement between the HADS and the clinical assessment was moderate ($\kappa=0.45$). Fewer doubtful cases/cases of anxiety and distress were detected by the HADS than...
by the clinical assessment. For depression, the number of patients identified as doubtful cases/cases was quite similar in both methods.

The greatest differences were found to be a function of sex and age, where more men were identified as doubtful/clinical cases by the clinical assessment than by the HADS: distress (n=22 and n=6, respectively) and anxiety (n=15 and n=9 respectively). Also, more patients in the younger age group were detected using the clinical assessment than using the HADS, mainly for distress (n=40 and n=17). By treatment intention, agreement was equal for all three domains. The results of the ROC analyses suggested a lower cut-off, HADS >4 for both the anxiety and the depression scale and >5 for distress to identify about 80% of oncology patients who may experience psychological distress, if a clinical assessment is used as a reference.

Twelve patients 8% were referred to support as a result of the clinical assessment. In addition 15% (n=22) was recommended and offered referral but declined and another 13% (n=19) had established ongoing support. According to the patient satisfaction, the most discussed topics in the clinical assessment were worry, treatment by healthcare staff, and depressed mood. The least frequently discussed topics were practical problems, financial situation, and life and death. In their answers to the open-ended question, 78 (57%) patients reported several needs/problems that were important for them to talk about, most commonly emotional problems (n=50) (see Paper III).
Discussion

Summary of results
The main aim of this thesis was to evaluate methods of screening, assessment, and development of distress, anxiety, and depression and their impact on HRQoL in oncology patients. Surprisingly, half of the IG patients screened with HADS >7 for anxiety or depression declined referral to clinical assessment and support. Patients screened with HADS >7 had impaired HRQoL at screening and were comparable to a clinical sample of oncology patients at POC regarding anxiety, depression, and HRQoL. Symptoms of anxiety and depression decreased and HRQoL improved during follow-up, but for some patients the symptoms remained and HRQoL was impaired even at six months. The Swedish version of the DT with a cut-off ≥4 was most optimal for screening of distress and its ability to measure changes over time was comparable to HADS. A thorough clinical assessment identified more patients with distress and anxiety than the HADS did. Compared to HADS outcomes, younger patients and males were recognized more as bothered in the clinical assessment. HADS >4 for anxiety and depression, respectively, was suggested to be comparable to the clinical assessment outcomes. At screening with HADS, the majority (64%) of the patients had HADS <8 of anxiety and depression, categorized as non-cases. Their HRQoL were comparable to that of the general population at the initial assessment and they remained to a great extent unchanged during the six months of follow-up. A few of these patients developed anxiety and/or depression symptoms and impaired HRQoL during follow-up; for these patients a cut-off >4 on HADS subscales may be useful for early detection. The results of this thesis contribute knowledge of the entire screening procedure for distress, anxiety, and depression in oncology patients, as well as knowledge on the stability and changes of distress, anxiety, and depression and its impact on HRQoL for a period of six months.

Methods for screening and assessment
In this thesis we used HADS cut-off point for doubtful cases to minimize the risk of patients with possible needs remaining undetected. We were aware that some of the screened sample would be “false positive”. The design of
the intervention with a clinical assessment as a part of the screening procedure was included for further assessment of the patients’ needs and to supply support services. As previously described, half of the patients declined referral to clinical assessment mostly because of “no need” according to the patients, and the conclusion that HADS overestimates patients with problems was suggested. To get a clearer picture of the HADS when used for screening, we conducted an additional study where we compared the outcomes of HADS as a screening tool with the outcomes of a thorough clinical assessment as another method.

Surprisingly, the HADS identified fewer patients as having anxiety and distress than did the thorough clinical assessment, whereas the number of patients categorized as depressed was more similar. The needs/problems that the patients found most relevant to talk about in the assessment session are all included in the NCCN’s definition of distress and sources of possible emotional distress in relation to cancer. The outcomes of the clinical assessment and the patients’ reported needs point out emotional and other psychosocial problems that are largely not covered when the HADS is used for screening. A previous study has shown similar results, although in a small sample [92]. The overall agreement between the HADS and the clinical assessment was moderate (Cohen’s kappa 0.45). Mitchell et al. found overall agreement to be fair (Cohen’s kappa 0.31) when comparing cancer patients’ DT scores with nurse specialists’ assessments. The nurses’ ability to assess patients with distress was generally low; nurses were better at reassuring patients without distress. Compared to the patients’ assessment on the DT, the nurse specialists made almost twice the number of false negative errors as they did false positive errors, suggesting that specialist nurses in clinical practice might be overcautious in diagnosing and underlining the undetected psychological problems in clinical practice [112]. However, contrary results have been reported in another study where nurses overestimated the patients’ emotional distress and underestimated the patients’ coping resources and QoL. Patient-nurse agreement was more consistent for nurses with advanced education and previous responsibility for their patients’ care [113]. These findings are interesting, although not directly comparable to the clinical assessment in the current thesis, where the clinical assessments were performed in an undisturbed environment by an oncology nurse and a social worker, both CBT-trained and with several years of experience working with assessment and support for cancer patients.

The findings in this thesis when evaluating a cut-off >4 on any of HADS subscales to identify a group of patients who later developed symptoms of anxiety and depression could be feasible for proactive support and treatment. For cancer patients, lower cut-off scores for HADS have previously been described and recommended than cut-off scores recommended for use in primary care [114]. However, it is a matter of decisions and priorities to judge the benefit and cost consequences in lowering the cut-off scores, as the
amount of false positives will also increase then. To date there is no consensus about the “best” screening questionnaire, but ultra-short questionnaires such as the DT have been found to be at least as valid as the HADS, and preferably by professionals in busy clinical practice [77].

Our results in validating the Swedish version of the DT for screening revealed the same cut-off score as many previous studies using HADS as the gold standard [115-118], while other studies have recommended a cut-off score of 5 [119-121]. The DT is feasible for use in clinical practice as a first step in the screening procedure. Most problems covered on the DT’s Problem List can be handled by regular staff, and constitute the basic rehabilitation need for the patient. HADS may be used as a second assessment if the psychological problem is the most prevalent. Regardless of which questionnaire is chosen, it has been found better to use any questionnaire rather than none at all to identify cancer patients with distress [73].

Outcomes and feasibility of screening and assessment

Approached patients consented to participate in Studies I and II to a great extent. The HADS was feasible for use in screening in the current thesis because a short questionnaire with only 14 questions is feasible for the patients. However it needs calculations of scores and assessments of cut-off scores which were done by the RA, but which can be time-consuming and create a resistance problem for health care professionals if used in routine oncology care.

As previously discussed, we did not foresee that a large number of IG patients would decline referral to clinical assessment and possible support. If the intervention had included a compulsory clinical assessment for patients screened with HADS >7 for anxiety or depression, our results would be more reliable about problems and needs in the IG. However, the option to consent or decline recommended referral and the outcome thereof gave us valuable information about patient-perceived needs. Also in the thorough clinical assessment (Study II) referral was discussed in about twice as many patients than who consented and actually were referred to additional support.

Although half of the IG patients who declined referral reported “no need”, there may be many other reasons included in that expression, e.g. cultural aspects of receiving an intervention including “talking” to a professional. In some cultures, this is more accepted and less stigmatized. In the thorough clinical assessment, patients were also assessed as being in need and were offered referral to a greater extent than those who consented and actually were referred to support services. Additionally one-third of the patients identified with possible need of referral had established ongoing support. Carlsson et al. have reported similar results with patients’ perception of not needing any help, followed by lack of information about the services reported as
main reasons for not using psychosocial resources. In patients identified with significant levels of distress, almost half of them had not used support services in the past, did not do so at the time and had no intention to do so in the future [16]. In another previous study, almost all patients screened with distress accepted referral to psychosocial services but only about half of them scheduled an appointment and were actually seen by the service [122]. Patients also report lack of information on available psychosocial services, although the majority of patients who were informed about the services did not use them. Many patients indicated that they would have used the services if they had known about them. However, when asking if they would use these services (after information) in the next six months, the likelihood was low [123]. Stigma may be another reason to express “no need”.

The clinical observation from the oncology nurse who conducted the intervention, regarding patients in the study to have fewer problems compared to regular patients referred to psychosocial support, may be biased because of the small number of patients who consented and completed clinical assessment and used the support services, because when we compared HADS and QLQ-C30 data from such a clinical sample the outcomes were similar in both groups.

It can be concluded that psychological screening alone is not enough to bring distressed patients to psychosocial services in clinical settings. Psychosocial and other rehabilitation issues need to be accepted by healthcare staff and implemented as a natural part of routine quality care. In a retrospective study of a screening and supportive care program integrated in cancer care, the majority (84%) of the distressed patients attended support after screening and feedback from health care staff [80]. Hence, educational and training programs for healthcare staff about psychosocial oncology care as well as inclusion of psychosocial care in overall treatment and care planning for the patient is needed.

In this thesis, cost-effectiveness of the screening and support intervention was not performed. Previously, cost-utility analysis of a support intervention for women with breast cancer receiving adjuvant chemotherapy has shown individual support with a psychologist or a nurse to be cost-effective [124]. Hollingworth et al. explored cost-effectiveness of psychosocial screening and found that screening could be performed quickly and inexpensively by using the DT with its problem list, although it did not lower subsequent health care costs and was not cost-effective in improving the patients’ psychological health and HRQoL [125]. The cost-effectiveness of screening and support interventions needs to be examined further in future studies.
Distress, anxiety and depression, and stability and changes over time

The 34-49% of patients with distress identified by screening and assessment in this thesis is consistent with previous studies [15, 16, 126]. Over the follow-up period, distress, anxiety, and depression decreased significantly for most patients, similar to other studies [20, 127], but for some patients, distress, anxiety, and depression remained present over time, which has also been shown in other studies [17]. Patients with moderate to severe anxiety at screening had to a great extent (41%) sustained anxiety at the six-month assessment, while for moderate to severe depression only one in four still had depression of the same categorization at six months. These results is similar to those of a previous study where anxiety and depression close to the diagnoses predicted similar status at six months [31].

It should be noted that screening also identifies patients with pre-existing psychological problems and disorders from before the cancer diagnosis. Palmer et al. [94] indicate that screening identifies almost two-thirds of patients with treated disorders who remain symptomatic. Most of these patients should already have adequate medical and psychological treatment and support. However, it is also important to pay attention to patients with pre-existing disorders, as a diagnosis of cancer is a stressful event and psychotropic medication might need corrections. A psychological or psychiatric contact may need to be reestablished. That should also be considered when evaluating effects of psychosocial interventions on distress, anxiety, and depression. Gathering and using the information on the patients’ pre-existing psychological problems would be beneficial. In this thesis, information on pre-existing psychological problems was not formally collected, and we were therefore unable to report if distress, anxiety, and depression had arisen in connection to the cancer or were pre-existing.

In this thesis, the majority (80%) of patients screened with non-cases of anxiety and non-cases of depression remained that way over the six months of follow-up. However, calculated on the total amount of screened patients, 40% were stable non-cases of anxiety and depression from screening and during follow-up. These results are similar to those of a recent study where about half of the patients were stable as “never” cases for anxiety or depression (40-58%) during follow-up to 12 months [28].

Impact on HRQoL

The findings regarding the impact of anxiety and depressions on HRQoL were in line with previous findings, where anxiety and depression had independent and strong associations with mental health domains of HRQoL and somatic symptom burden in cancer patients [35, 40, 63]. The discovery of the impaired HRQoL for patients who were unstable non-cases for anxiety
and for depression was made by analyzing subgroups of patients who were all screened as non-cases. These are interesting observations (although in a small number of patients), which were not previously described but were probably also possible to detect in other studies where HRQoL for cancer patients were reported comparable to that of the general population [11]. This finding need to be further evaluated in future studies.

Methodological discussion

Study I

There are some methodological considerations to discuss. First, the use of a historical control group design has some limitations. Our main aim was to evaluate methods of screening and assessment, and to evaluate the effects of a psychosocial support intervention in patients identified by screening in a clinical setting. The preferred design in psychosocial intervention studies is the RCT [55]. However, it was not feasible, because patients randomized to a control group would receive concurrent information about the possibility to be referred or to contact the nurse at the POC by self-referral as the intervention took part at the regular psychosocial service at the Department of Oncology. Thus, the use of psychosocial support in the SCG could probably increase, resulting in a group of patients that differed from both the IG and patients in routine standard care. To decrease threats to internal validity the SCG was recruited during the first time period of the study, and subsequently the IG. Another threat to internal validity in designs not using the randomization is selection bias. It is possible that the groups are nonequivalent, and that they may differ in ways that are difficult to detect. The patients in the SCG and the IG were comparable regarding clinical and demographic characteristics, presence of anxiety and depression at screening, and number of patients who completed the study, although more patients in the SCG compared to the IG died during the study period. Thus, the fact that the SCG and IG were similar regarding collected data decreases the threat to the internal validity, although there may have been differences between the groups not measured in the study such as pre-existing psychological disorders.

The intervention targeted patients screened with anxiety and/or depression. This approach helps to reduce the “floor effects”, as those who are not experiencing distress dilute the possible effect of psychosocial interventions, a problem previously reported in studies of consecutive patients [11, 128]. The results of the assessment and support intervention were negative when analyzed in the entire group (including 57% who declined clinical assessment and support); thus we were not faced with judging to what extent it was possible to make an inference that the independent variable is truly influencing the dependent variable in this non-randomized design. A power calcula-
tion was done to estimate the number of participants needed in each group in order to detect statistically significantly differences between the groups. However, we had not calculated for the large number of decliners in the IG, and studies reporting similar results of decliners to referral and support interventions were not published at that time [120, 129]. Future studies evaluating the effect of psychosocial interventions should include a larger sample size of patients screened with distress.

We invited all patients to participate at their first visit to the Oncology Department or within one month after. The response rate was 85%, and 69% of the consenting patients completed the study. Our sample is representative of patients in oncology departments with equal distribution of men and women, with prostate, breast, and gastrointestinal cancer as most common, but also with a variety of other cancer diagnoses and with most patients with a first-time cancer receiving oncology treatments. There were some differences between the patients who completed the study and the 154 (31%) patients who did not complete the study. Regarding clinical characteristics, a higher proportion of patients who did not complete the study was in a more advanced disease stage (distant metastases, inoperable cancer, and death during the study period) with a poorer HRQoL at baseline. Gastrointestinal cancer was the most common diagnosis, compared to breast and prostate cancer, in patients who completed the study, although they did not differ significantly from completers regarding age and gender. It might have had an impact on the results if this more affected group had been able to complete the study. However, the completion rate was high, with 69% of the patients completing the study. This may indicate a satisfactory generalizability of the findings.

Another methodological aspect concerns the use of a validation group. There was a decade between the two studies and they were not identically collected. Patients in the VG were included in the study at an earlier stage of the disease and with specified cancer diagnoses. Patients in the SG were receiving oncological treatment to a greater extent than the VG which may be a consequence of the development of treatment regimens over the ten years but also a consequence of patients being included in the study in a later stage, and with various cancer diagnoses and various stages of the disease in the SG. However, despite some differences, it was valuable to evaluate the relevance of the findings in another cohort and the results were almost identical in the two cohorts which strengthens the reliability and generalizability of the findings.

Study II
There are also some methodological issues to discuss in Study II. First there are some comments on the internal validity. The patients were identified by a
RA not involved in the patients’ care and she used the department’s computerized lists and a predetermined order in the identification process to avoid selection bias. To achieve a sample of oncology patients equally representing both sexes, different ages (<65/≥65 years), and treatment intention (curative/palliative), eligible patients were selected according to these conditions. For a cross-sectional design with the aim of comparing two methods of screening and assessment, the patient identification was not considered to be a threat to the internal validity.

A large proportion of patients consented to participate (80%), and most of them (85%) completed the study. The twenty-five (15%) patients who did not complete the study did not differ significantly regarding clinical characteristics from patients who completed the study. A common reason for not completing the study was organizational problems, e.g. difficulties with attending the scheduled appointment for the clinical assessment due to changed treatment plans, treatment side effects, or discharge from the hospital earlier than planned.

As a thorough clinical assessment itself has not yet been validated, there are methodological considerations to discuss about comparing HADS with a clinical assessment. A thorough clinical assessment is broad, aiming to identify patients with various problems due to cancer or its treatment. HADS has a more narrow perspective aiming at anxiety, and depression, although, also used for screening and assessment of the broader concept of distress. In clinical routine care, thorough clinical assessment performed by social worker and specially trained nurses is frequently used and an accessible method and has not previously been compared with HADS.

One limitation was the small sample size with regard to patients identified with distress, anxiety or depression, which did not allow separate comparisons for differences in subgroups, e.g. doubtful cases and cases for anxiety and for depression. Another limitation was that the patient evaluation questionnaire did not include items to evaluate the patients’ experience of the HADS as a tool for detecting emotional problems. Some information were collected in the patients’ comments on the patient satisfaction questionnaire e.g. “I appreciated the conversation, I find it easier to express myself in words than on a paper”. Another quote was: ”It must not be too much focus on anxiety and depression if we do not currently have symptoms of that”. A qualitative design using interviews or focus groups to explore the patients’ experience, perceived benefits, and preferences of various methods may be used in future studies. It would also have contributed to increased knowledge about various screening and assessment methods and feasibility if the DT had been used in Study II. However, the DT was not yet validated in a Swedish sample of cancer patients at the time.
Conclusions

- Screening for distress, anxiety, and depression with individual feedback to the patient is feasible for cancer patients in clinical settings and increases the possibility for individual recommendations and referral to support services.

- Many patients identified by screening and assessment seem to have resources to manage such problems without a need of additional support; some have established ongoing support, and about one in four use and benefit from psychosocial support services. In this thesis, patients referred for clinical assessment and psychosocial support did not improve more than patients in standard care.

- In patients screened with symptoms according to HADS, distress, anxiety, depression, and HRQoL improve over time, but symptoms of anxiety and impaired HRQoL are still present at six-months. These patients’ symptoms and HRQoL are similar to those of patients referred or self-referred to psychosocial support in routine oncology care.

- The Swedish version of the DT with a cut-off $\geq 4$ is valid for screening of distress in oncology patients, and its ability to measure changes in distress over time is comparable to that of HADS. It may be used routinely in oncology care for screening of distress in cancer patients.

- A thorough clinical assessment, of distress identifies more patients with distress, anxiety and depression compared to the HADS. When using the HADS for screening, healthcare professionals should be aware of the emotional and psychosocial problems perceived by patients but not covered by the HADS. Especially male patients and young patients appear to have potential problems that the HADS fail to identify.

- Most oncology patients who are categorized as non-cases of anxiety and depression according to HADS at screening remain as stable non-cases during a six-month follow-up with a HRQoL comparable to that of the general population, indicating no need for repeated screening. However, about one in five patients are unstable non-cases with a poorer and dete-
riorating HRQoL; for these a cut-off >4 on HADS subscales may be useful for early detection.

- Both the HADS and the clinical assessment seem to identify patients who have resources to manage their emotional concerns without additional support interventions. Thus, there is no need to hesitate using these screening methods because of concerns about identifying loads of patient who wants support resources.

Clinical implications and future research

- Psychosocial screening with feedback to the patient and information of available services should be provided by health care professionals as a part of the patients’ individual rehabilitation plans in routine oncology care.

- Health care professionals need to receive initial training and supervision in all stages of the screening procedure. The DT can be used in routine oncology care as a feasible first step in screening for distress in cancer patients.

- As a suggestion for future work, further efforts should be made in patients screened with distress, to explore their hesitation, resistance, and perception of not needing psychosocial services.

- Future studies of psychosocial interventions’ effects on psychological outcomes and HRQoL should include larger samples of cancer patients screened with distress.

- Our results suggest that the efforts in repeated assessments of anxiety and depression appear unnecessary and may be decreased without any negative effects for most patients scoring as non-cases at initial assessment. However, these results need to be evaluated further, preferably with a more longitudinal design.

- The cost-effectiveness of screening and support interventions need also to be examined further in future studies.
Avhandlingens syften var att studera metoder för att identifiera och bedöma oro/ångest, nedstämdhet/depression och andra psykosociala problem och dess inverkan på hälsorelaterad livskvalitet (HRQoL) hos patienter med cancer samt att följa utvecklingen av dessa symtom och HRQoL under sex månader. Ytterligare syfte var att undersöka effekterna av att remittera patienter med oro och/eller nedstämdhet till ett bedömningssamtal med möjlighet till extra stödinsatser.

Studie I


Delarbete I

Resultaten visade att patienterna i hög utsträckning (85%) tackade ja till att delta i studien. Drygt en tredjedel av patienterna (36%) hade tecken på oro/ångest och/eller nedstämdhet/depression vid det första mättillfallet (screeningen). I det uppföljande telefonsamtalas tackade mer än hälften av patienterna (57%) i interventionsgruppen nej till remiss till bedömningssamtal och
möjliga stödinsatser. Den vanligaste orsaken var att patienterna uttryckte att de inte upplevde behov av insatser. Av de patienter som fick sedvanlig vård var det fem patienter (5%) som blev remitterade eller själva sökte och genomförde bedömningssamtal för stödinsatser. Resultaten visade att screening med individuell återkoppling till patienten ökar möjligheten för remiss till vidare bedömning och möjlighet till stödjande insatser i större utsträckning än inom sedvanlig vård. Det var ingen skillnad gällande oro/ängest, nedstämdhet/depression och HRQoL mellan de patienter som fick sedvanlig vård och de patienter som fick interventionen. Patienternas oro/ängest och nedstämdhet/depression minskade och HRQoL ökade under sex månader men viss oro/ängest och nedstämdhet/depression och nedsatt HRQoL kvarstod vid sex månader.

Delarbete II
Syftet var att validera den svenska översättningen av screeningformuläret The Distress Thermometer i svensk cancervård. Formuläret är avsett att mäta oro/bekymmer hos patienter med cancer och består av en termometerliknande skala från 0-10 (ingen oro/bekymmer till extremt mycket oro/bekymmer) samt en problemlista där patienten anger Ja/Nej gällande 35 vanligt förekommande problem vid cancer och dess behandling. Jämförelsen gjordes med det etablerade och välanvända frågeformuläret HADS som gold standard. Resultaten visade att den svenska översättningen av frågeformuläret ”Problemtermometern” med ett gränsvärde ≥4 poäng visade sig lämpligast för att upptäcka oro/bekymmer hos patienter med cancer. Problemtermometerns förmåga att följa förändringar av oro/bekymmer över tid var jämförd med HADS.

Delarbete III
I delarbete III (Studie II) jämfördes utfallet av HADS med ett bedömningssamtal gällande förekomst av oro/bekymmer, oro/ängest, och nedstämdhet/depression. Patienterna som deltog i studien var tillfrågade utifrån att representera män/kvinnor, <65/≥65 års ålder, samt botande/bromsande onkologisk behandling. Totalt genomförde 146 patienter studien. Patienterna besvarade HADS samma vecka som de genomförde ett bedömningssamtal med en sjuksköterska eller en kurator på onkologikliniken. Resultaten visade att fler patienter med oro/bekymmer, oro/ängest och nedstämdhet/depression identifierades vid bedömningssamtalet jämfört med HADS. Framförallt yngre patienter och män identifierades i högre grad av samtalet i jämförelse med HADS. För att med HADS identifiera motsvarande antal patienter med besvär som identifierades med ett bedömningssamtal skulle gränsvärden för HADS behöva sänkas till >4 på respektive delskala. Identifieringen av pati-
enter med nedstämdhet/depression var mer samstämmig mellan samtalet och HADS.

**Delarbete IV**

De patienter som vid screening med HADS (Studie I) var besvärsfria under söktes vidare med avseende på hur många som fortsatt var besvärsfria och hur många som utvecklade oro/ångest eller nedstämdhet/depression och dess inverkan på patientens HRQoL under sex månader. För att bedöma relevant av resultaten användes en jämförelsegrupp med data från en tidigare studie av patienter med cancer (utförd 10 år tidigare). Resultaten var så gott som identiska i de två oberoende grupperna. Resultaten visade att en hög andel (80%) var fortsatt besvärsfria vid alla mättillfällen under sex månader. En mindre del (20%) som var besvärsfria vid screeningen utvecklade besvär av oro/ångest eller nedstämdhet/depression vid ett eller flera mättillfällen och med nedsatt HRQoL under sex månader. Många av dessa patienter hade kunnat upptäckas tidigare om ett lägre gränsvärde HADS >4 hade använts. Patienter som var fortsatt besvärsfria under hela studieperioden hade en HRQoL motsvarande svensk befolkning i allmänhet.

**Slutsatser och förslag till fortsatt forskning**

- Screening och bedömning med individuell återkoppling av resultaten till patienten är genomförbart i onkologisk vård. Det ökar möjligheterna för patienter med oro, nedstämdhet eller andra psykosociala problem att få en utförligare bedömning och ger möjlighet till stödjande insatser i högre utsträckning än inom sedvanlig vård.
- Många patienter som uppriser oro, nedstämdhet eller andra psykosociala problem enligt screeningformulär verkar ha resurser att hantera sin situation utan extra stödjande insatser. Orsaker till att patienter avböjer en utökad bedömning och möjlighet till stödjande insatser bör dock undersökas vidare.
- Problemetommeren med ett gränsvärde på ≥4 för oro/bekymmer kan användas som ett första steg i screening processen inom onkologisk vård.
- När HADS används för screening och bedömning bör vårdpersonal vara uppmärksam på psykosociala problem som patienter uttrycker men som inte fångas upp av HADS.
- Resurser för upprepade mätningar föreslås kunna minskas för patienter utan oro/ångest, nedstämdhet/depression vid screening men studier med längre uppföljningsperiod är önskvärda.
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References


Appendix
### Screeninginstrument för mätning av oro/bekymer

**Instruktioner:** Ringa först in den siffra (0-10) som bäst beskriver hur mycket oro/bekymer du har upplevt den senaste veckan, inklusive idag.

#### Extremt mycket oro/bekymmer

#### Ingen/inga oro/bekymmer

Ange nu om något av följande har varit ett problem för dig under den senaste veckan, inklusive idag. Markera antingen JA eller NEJ för varje alternativ.

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**Existeriella funderingar**

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**Övriga problem:**

__________________________________________________________________________________________
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