

Summary

Depression and anxiety are frequently seen in clinical practice and are associated with personal suffering, reduced quality of life and high economic costs. Their identification and treatment are therefore important. However, depressive and anxiety disorders often remain unrecognized. Detection might possibly improve with simpler, shorter, more reliable and valid depression and anxiety self-rating. Screening conducted via the internet could further improve fast-track screening by offering easy and quick access to large numbers of users at low cost. However, only a minority of people who are recognized as having symptoms of depression or anxiety receive psychological treatment delivered by a mental health professional. Low-intensity interventions, such as psychoeducation or (internet-based) self-help interventions are directly accessible and of low cost and thus may offer a first step in a stepped care model or an alternative to face-to-face therapy for people with mild to moderate depressive and/or anxiety disorders. In this thesis, the possibilities of low-intensity screening and interventions for common mental disorders are explored.

Chapter 1 presents the general introduction to the contents of this thesis. The use and purpose of low-intensity screening are mentioned, as well as a description of the psychometric properties of screening questionnaires. Benefits and issues of online screening are described, and previous relevant research is discussed. Low-intensity interventions are discussed and compared with face to face treatment, embedded in results from prior work. The advantages and disadvantages are presented, and the role of support in such interventions is highlighted. *Chapter 2* describes the validity of the Dutch version of the Kessler-10 (K10) as well as an extended version (EK10) in screening for depressive and anxiety disorders in primary care. Data are from 1,607 adult participants of the Netherlands Study of Depression and Anxiety (NESDA). Participants completed the K10, extended with five additional questions focusing on core anxiety symptoms, and were screened with the WHO Composite International Diagnostic Interview (CIDI lifetime version 2.1) to assess DSM-IV disorders (major depressive disorder, dysthymia, generalized anxiety disorder, social phobia, panic disorder, agoraphobia). Reliability (Cronbach's α) of the Dutch K10 was 0.94. Based on Receiver Operating Characteristics (ROC) analysis, the area under the curve (AUC) for the K10 for any depressive and/or anxiety disorder was found to be 0.87. The extended questions on the EK10 significantly improved the detection of anxiety disorders in particular. With a cut-off point of 20, the K10 reached a sensitivity of 0.80 and a specificity of 0.81 for any depressive and/or anxiety disorder. For the EK10, a cut-off point of 20 and/or at least one positive answer to the additional questions provided a sensitivity of 0.90 and a specificity of 0.75 for detecting any depressive and/or anxiety disorder. The Dutch version of the K10 is appropriate for screening depressive disorders in primary care, while the EK10 is preferred in screening for both depressive and anxiety disorders. *Chapter 3* reports the validity of the Web Screening Questionnaire (WSQ) to screen for: depressive disorder, alcohol abuse/dependence, GAD, PTSD, social phobia, panic disorder, agoraphobia, specific phobia, and OCD. The WSQ was developed to fulfill the need for quick

ways to triage would-be users of internet-based self-help systems appropriate for their disorders. It can also be quickly used to screen patients prior to consultation with a GP. A total of 502 subjects (aged 18 - 80) answered the WSQ and 9 other questionnaires on the internet. Of these 502, 157 were assessed for DSM-IV-disorders by phone in a WHO Composite International Diagnostic Interview with a CIDI-trained interviewer. Positive WSQ "diagnosis" had significantly higher means on the corresponding validating questionnaire than negative WSQ "diagnosis". WSQ sensitivity was 0.72 - 1.00 and specificity was 0.44 - 0.77 after replacing three items (GAD, OCD, and panic) and adding one question for specific phobia. The Areas Under the Curve (AUCs) of the WSQ's items with scaled responses were comparable to AUCs of longer questionnaires. The WSQ screens appropriately for common mental disorders. While the WSQ screens out negatives well, it also yields a high number of false positives.

Chapter 4 includes findings from our study of the validation of three self-rated measures to screen for depression on the Internet: SID (single-item depression scale), CES-D (Center for Epidemiological Studies Depression scale) and K10 (Kessler psychological distress scale). Data are from the WSQ-study. Cronbach's α for both web self-rated measures CES-D and K10 was 0.90. The SID correlated 0.68 with the CES-D and with the K10. The CES-D correlated 0.84 with the K10. Subjects with a DSM-IV diagnosis for any depressive disorder had significantly higher means on the three self-rated measures for depressive symptoms than subjects without a diagnosis of any depressive disorder. Using any depressive disorder as the gold standard, the area under the curve (AUC) of the SID was 0.71, which was significantly lower than the AUC of the CES-D (AUC: 0.84) and of the K10 (AUC: 0.81). The AUCs for the K10 and CES-D did not differ significantly from each other. The CES-D and K10 are reliable, valid tools for care providers to quickly screen depressive patients on the internet and for researchers to collect data.

Chapter 5 elaborates on the psychometric properties of the web-based self-rated 7-item GAD-7, its shortened 2-item GAD-2 and a single item from the GAD-7 (GAD-SI) scale to screen for GAD, using the WSQ-sample. The GAD-7 had good reliability. Subjects with a GAD-diagnosis had significantly higher means on GAD-2, GAD-SI and GAD-7 than subjects without a GAD-diagnosis. The AUC (area under the curve) of the GAD-SI and GAD-2 was accurate and not significantly different to the GAD-7 AUC. We suggest that the web-based GAD-SI, GAD-2 and GAD-7 are reliable, valid tools to quickly screen for GAD in busy mental health settings and clinical research. More research is needed to validate the GAD-SI 'Do you have trouble relaxing' to see if its screening properties approach those of the GAD-7.

Chapter 6 examines the effectiveness of passive psychoeducation in reducing symptoms of depression, anxiety or psychological distress. We conducted a meta-analysis in which Cochrane, PsycInfo and PubMed databases were searched and additional materials were obtained from reference lists. Papers describing passive psychoeducational interventions for depression, anxiety and psychological distress were included if the research design was a randomized controlled trial and incorporated an attention placebo, no intervention or waitlist comparison group. In total, 9010 abstracts were identified. Of these, five papers which described four research studies targeting passive psychoeducation for depression and psychological distress met the inclusion criteria. The pooled standardized-effect

size (four studies, four comparisons) for reduced symptoms of depression and psychological distress at post-intervention was $d = 0.20$. Although it is commonly believed that psychoeducation interventions are ineffective, this meta-analysis revealed that brief passive psychoeducational interventions for depression and psychological distress can reduce symptoms.

Chapter 7 provides results from a meta-analysis investigating whether guided self-help for depression and anxiety is equally effective as face-to-face treatments. A systematic search in bibliographical databases (PubMed, PsycINFO, EMBASE, Cochrane) resulted in 21 studies with 810 participants in which guided self-help was directly compared with face-to-face psychotherapies for depression and anxiety disorders. The overall effect size indicating the difference between guided self-help and face-to-face psychotherapy at post-test was $d = 0.02$, in favour of guided self-help. At follow-up (up to 1 year) no significant difference was found. No significant difference was found between the drop-out rates in the two treatments formats. This study suggests that it seems safe to conclude that guided self-help and face-to-face treatments can have comparable effects.

Chapter 8 describes the protocol of an ongoing randomized controlled trial examining whether an internet-based self-help intervention with a coach is more effective than the same intervention without a coach in terms of clinical outcomes, drop-out and economic costs. Another aim is to investigate which level of support by a coach is more effective compared to other levels of support. A total of 500 subjects (18 year and older) from the general population with mild to moderate depression and/or anxiety will be assigned to one of five conditions: (1) web-based problem solving through the internet (self-examination therapy) without a coach; (2) the same as 1, but with the possibility to ask for help from a coach on the initiative of the respondent (on demand, by email); (3) the same as 1, but with weekly scheduled contacts initiated by a coach (once per week, by email); (4) weekly scheduled contacts initiated by a coach, but no web-based intervention; (5) information only (through the internet). The interventions will consist of five weekly lessons. Primary outcome measures are symptoms of depression and anxiety. Secondary outcome measures are drop-out from the intervention, quality of life, and economic costs. Other secondary outcome measures that may predict outcome are also studied, e.g. client satisfaction and problem-solving skills. Measures are taken at baseline (pre-test), directly after the intervention (post-test, five weeks after baseline), 3 months later, and 12 months later. Analysis will be conducted on the intention-to-treat sample. This study aims to provide more insight into the clinical effectiveness, differences in drop-out rate and costs of interventions with and without support, and in particular different levels of support. This knowledge is important in relation to the dissemination and implementation of internet-based self-help interventions.

Chapter 9 gives a general discussion of the thesis by summarizing the main results from our studies in the light of previous findings. It discusses the studies main limitations and gives recommendations for clinical practice and future research.

