Research report

Increasing the acceptance of internet-based mental health interventions in primary care patients with depressive symptoms. A randomized controlled trial

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ABSTRACT

Background: Internet-based interventions (IBI) are effective in treating depression. However, uptake rates in routine care are still limited. Hence, this study aimed to (1) assess the acceptance of IBIs in primary care patients with depressive symptoms and to (2) examine the effects of a brief acceptance facilitating intervention in the form of an informational video on patients' acceptance of IBIs.

Methods: Primary care patients ($N=128$) with Minor or Major Depression were randomly assigned to an intervention (IG) or control group (CG). Patients in the IG were shown a brief informational video about IBIs before receiving a questionnaire that assessed their acceptance of IBIs and other secondary outcomes. Patients of the CG filled out the questionnaire immediately.

Results: Baseline acceptance of IBIs in the CG was high for 6.3%, moderate for 53.1% and low for 40.6% of patients. Acceptance of IBIs was significantly higher in the IG when compared to the CG ($d=.71$, 95%–CI:.09–2.91). Except for social influence and the general attitude towards psychological treatment, all secondary outcomes were also significantly improved (e.g. effort- ($d=.40$) and performance-expectancy: $d=.65$; knowledge about Internet interventions $d=.35$).

Limitations: Depression of the participants was only assessed using a self-report measure (PHQ-9).

Conclusion: Primary care patients' acceptance of IBIs for depressive symptoms was low but could be increased significantly using a brief acceptance facilitating intervention on the basis of an informational video. Future studies should further examine the potential of acceptance facilitating interventions for patients and health care providers to exploit the public health impact of IBIs.

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1. Background

Depression is one of the most prevalent mental disorders with a lifetime prevalence rate of 16% and higher (Alonso et al., 2004; Kessler et al., 2001). It is associated with a considerable quality of life decrement (Ustün et al., 2004) and substantial economic costs (Berto et al., 2000; Luppa et al., 2007). Moreover, depression is expected to become the leading cause of disability in high-income countries by 2030 (Mathers and Loncar, 2006).

Psychotherapy is one of the established evidence-based treatment options for depression (Cuijpers et al., 2008). However, people often remain untreated (Mack et al., 2014; Wang et al., 2007; Wittchen et al., 2011). People who could benefit from treatment disregard it for several reasons such as a lack of knowledge, high costs, anticipated negative (social) consequences and preference for self-help (Kessler et al., 2001). Furthermore, those seeking help hardly receive immediate access because of long waiting lists for psychotherapeutic treatment (Kessler et al., 2001). Limited availability of clinicians, geographical inaccessibility, and difficulties in attending therapy during usual business hours are additional barriers.

Using the Internet to provide evidence-based guided self-help interventions may help to overcome some of the limitations of traditional treatment services (Andersson and Titov, 2014; Ebert et al., 2014a; Lin et al., 2013). Internet-based guided self-help

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strategies have several advantages over face-to-face approaches. For example, (a) Internet interventions are more easily accessible at any time and place (b) interventions provide a greater potential for the integration of acquired skills in daily life because of the emphasis on the participants' active role in (guided) self-help interventions, (c) participants can work at their own pace and go through materials as often as they want, (d) travel time and costs for both, participants and clinicians are eliminated, (e) and web-based interventions may attract people who do not make use of traditional mental health services.

A large number of studies indicate that Internet-based interventions (IBIs) are effective in the treatment of Major Depression (Hedman et al., 2012) or subthreshold depression (Spek et al., 2007), including maintenance treatments (Ebert et al., 2013a, 2013b; Holländare et al., 2011). For example, a systematic review of 19 randomized controlled trials evaluating IBIs for symptoms of depression in 2996 participants (Richards and Richardson, 2012) found a mean effect size of $d=.78$. Furthermore, a recent meta-analysis found that Internet-based cognitive behavioral treatments can have comparable effects to traditional face-to-face psychotherapy, even when they are compared directly to each other (Andersson et al., 2014).

However, a basic prerequisite to exploit the potential of any effective treatment is that affected individuals are willing to utilize the treatment. Although the topic of IBI uptake is studied insufficiently, the few studies yet conducted indicate that uptake rates of IBIs for depression are currently rather low, with uptake rates found varying between 3% and 25% (Kaltenthaler et al., 2008; Lillevoll et al., 2014; Whiteside et al., 2014; Woodford et al., 2011). One suggested reason may well be the low level of acceptance of IBIs in the target population (Jimison et al., 2008; Mitchell and Gordon, 2007; Murray et al., 2003). Research exploring causes for low acceptance of Internet-interventions is scarce. Potential barriers identified in the literature include (a) low expectancies regarding its effectiveness, (b) worries about data security, (c) low comfort using such programs, (d) influence by important social contacts such as family and health professionals, (e) negative attitudes towards seeking psychological help in general, (f) low Internet experience, and (g) high Internet anxiety (Celik and Yesilyurt, 2013; Cranen et al., 2012; Gun et al., 2011; Jimison et al., 2008; Lindblom et al., 2012; Mitchell and Gordon, 2007; Mohr et al., 2010; Musiat et al., 2014; Young, 2005).

Given the low acceptance of Internet interventions for depression, finding ways to increase the acceptance seems to be crucial. However, research on strategies on how to overcome barriers to acceptance remains scarce (Cranen et al., 2011a). One repeatedly suggested solution might be to provide acceptance facilitating interventions (AFI) in which potential barriers of acceptance are addressed proactively (Cranen et al., 2011; Gun et al., 2011; Mitchell and Gordon, 2007; Murray et al., 2003).

One scalable form of such an AFI with high potential utility could be the presentation of evidence-based information about IBIs in routine general practice settings by means of a brief video. This type of intervention could, for example, be presented to patients while they are waiting for their GP-appointment. Many patients with mild to moderate depression receive treatment in primary care (Gaebel et al., 2013; Mack et al., 2014; Wang et al., 2000; Wittchen and Jacobi, 2005). Despite guideline recommendations for depression (National Collaborating Centre for Mental Health, 2010), treatment approaches are often limited to antidepressant drug prescriptions (Baumeister, 2012; Cameron et al., 2011; Gaebel et al., 2013), with psychotherapy being rarely provided (Davidsen, 2008; Fleury et al., 2012; Wiebe and Greiver, 2005). Thus, the general practitioner setting has often been suggested as an optimal setting to implement IBIs for depression (Hickie et al., 2010; Høifødt et al., 2013). Presenting a brief AFI video in the waiting-area would (a) easily reach affected people, (b) be cost

effective, (c) inform patients in an environment they trust, and (d) encourage follow-up consultations from the general practitioner.

The aim of the present study was 1) to evaluate the acceptance of IBIs for mental health problems in primary care patients with depressive symptoms, 2) to examine the effects of a brief AFI that provides information on patients' acceptance of IBIs and their perceptions of the barriers to acceptance.

2. Methods

2.1. Design & procedure

This was an experimental study, with a parallel group design in 128 primary care patients. Participants were randomly assigned to the intervention group (IG) or the control group (CG) in a 1:1 ratio. Participants were recruited in Germany by two independent research assistants from May 2014 to June 2014 in two different medical practices in Germany. To be eligible for the study, participants were required to (a) be waiting for a scheduled treatment appointment in a waiting room of one of the participating general practices, (b) be at least 18 years old, (c) fulfill criteria for at least subthreshold symptoms of depression according to DSM-IV criteria for Minor Depression as indicated by at least two criteria of the Major Depression symptoms present during the same 2-week period, and at least one of the symptoms of either depressed mood or markedly diminished interest or pleasure in activities, assessed with the German version of the PHQ-9 (Kroenke et al., 2001b; Löwe et al., 2002), (d) have sufficient German language skills (reading and understanding), and (e) be willing to sign an informed consent form.

During the recruitment period all patients in the waiting room were invited to participate in the study. Patients who signed the consent form were first assessed with the PHQ-9. Participants meeting all study criteria were randomly allocated to either the IG or the CG using a computer-generated randomization list. Patients in the IG were shown a brief informational video about IBIs before receiving the self-report questionnaires. Patients in the CG filled out the questionnaires immediately. The sample size was calculated to show a moderate effect of .50 based on a power $(1-\beta)$ of .80 in a two-tailed test with an alpha of .05. All procedures involved in the study conducted in accordance with the Declaration of Helsinki Declaration and approved by the University of Lueneburg ethics committee.

2.2. Acceptance facilitating intervention (AFI)

The AFI consisted of a 7 min video in which an expert (professor of psychology) and a model patient provided information about an IBI for depression with the intention of positively influence patients' acceptance. The intervention's content was designed based on theoretical assumptions of the unified theory of acceptance of technology (UTAUT) (Venkatesh et al., 2003) and the currently available evidence on barriers of acceptance. The information presented comprised evidence for the effectiveness of Internet-based approaches, data security and anonymity concerning Internet-based programs, diverse advantages (e.g., ease and comfort of use, flexible time management), and the possibility of receiving technical support. An exemplary patient talked about depressive symptoms, their impact on personal life and the effectiveness of the program to increase knowledge about depression and improve the outcome expectancy of patients. Aiming at reducing negative consequences of Internet anxiety as well as concerns about data safety, the login process was demonstrated and participants were informed about the use of an encrypted platform and anonymous data processing. Furthermore, an example of an evidence-based IBI was presented,