Guided self-help via internet for panic disorder: Dissemination across countries

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ABSTRACT

Guided self-help via Internet is a promising way of treating panic disorder (PD). The present study examined the effects of a self-help program via Internet with weekly therapist contact for PD after dissemination to a new country. Predictors of outcome were also examined. The study was an open trial with 27 participants with PD with or without agoraphobia as their primary diagnosis. Medium to large effects on PD-symptoms were reported after treatment and at 6 months follow-up, with smaller effects on secondary outcome measures, i.e., depression, interpersonal problems, and sleep problems. The attrition rate of 30% in present study was higher than in Swedish studies. Predictor analysis showed that participants with longer duration of PD-symptoms had less improvement on all outcome measures, whereas higher age predicted more improvement. The guided self-help program remained effective when disseminated to a new country, but the high attrition rate needs to be addressed in future studies.

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1. Introduction

Panic disorder (PD) have a lifetime prevalence at nearly 5% in the adult population (Kessler et al., 2006a), resulting in substantial costs both for those with the diagnosis and for society (Deacon, Lickel, & Abramowitz, 2008; Kessler et al., 2006b). There are several effective treatments for PD, but there is a challenge to make these available for those in need of treatment (Collins, Westra, Dozois, & Burns, 2004; McManus, Grey, & Shafran, 2008). Guided self-help treatment based on Cognitive Behavioural Therapy (CBT) delivered through the Internet is a promising way of helping those with PD (Kaltenhalter, Parry, & Beverley, 2004; Titov, 2007).

The effects of a CBT-based guided self-help program for PD developed by Andersson and Carlbring when disseminated to a new country (from Sweden to Norway). The second aim of the study was to examine effects of the guided self-help program on PD symptoms and quality of life from this treatment have been reported (Carlbring et al., 2003, 2006), but outcome on sleep and interpersonal problems should also be of interest, as these are two domains in which those who suffer from PD often report problems (Hoffart, Hackmann, & Sexton, 2006). The third aim of the study was to examine possible predictors of outcome. There are few consistent findings regarding predictors of outcome in the novel field of guided self-help via Internet, and more research on predictors is needed (Andersson, Carlbring, & Grimund, 2008).

2. Methods

2.1. Recruitment and inclusion

Participants were recruited through an ad in the local newspaper and 87 persons responded during the recruitment period (3 days). Initially, telephone screening based on the following criteria was used to select persons for face-to-face interview: (1) positive on two of three opening questions on the Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) (First, Spitzer, Gibbon, & Williams, 1995), (2) regularly access to Internet, (3) able to attend the face-to-face...
interview, (4) consulted general practitioner for physical complaints if relevant, and (5) not use anxiety reducing medication more than an average of once a month, and only then for special occasions (e.g. dentist or fly travel by plane). A total of 38 persons (13 men) fulfilled the screening-criteria and 36 attended the face-to-face interview, conducted by four experienced clinical psychologists, all involved in the pilot study. Inclusion criteria were: (a) PD according to Structured Clinical Interview for DSM-IV, (b) PD-symptoms with a severity of at least four on the Clinical Severity Rating (CSR; Brown, DiNardo, & Barlow, 1994), (c) had PD for at least 6 months, (d) PD was the main problem, (e) age 18–65 years of age, (f) no other disorder in acute need of treatment, (g) total score on Beck Depression Inventory (BDI; Beck, Erbaugh, Ward, Mock, & Mendelsohn, 1961) less than 26 and maximum one at item nine concerning suicidal ideation, (h) if antidepressant medication was used, it have had to be stable for the last 3 months, and remain on a stable dose during the treatment period. Flow-chart of participants are presented in Fig. 1.

2.2. Materials

Guided self-help program. The program was mainly based on Clark’s (1986) cognitive model for PD (Carlbring et al., 2001). The program comprised ten modules with an average of 13.4 pages (range 5–25) of text and pictures. Participants accessed a new module every week on the following topics: psychoeducation, exercises for breathing and hyperventilation, cognitive restructuring, interceptive exposure, exposure in vivo, and relapse prevention. At the end of each module participants were asked to explain the most important part of the module they had just read, and write down the experience and result of the exercises. A multiple choice quiz was also included at the end of each module. The program was translated into Norwegian by professional translators and further edited by the research group. Before inclusion, all participants were informed about the length and scope of the self-help program, what the modules comprised, and how much time (suggested 3–5 h) they were expected to spend on the modules on a weekly basis.

Therapist guidance. The program was introduced by the therapist. The therapist then telephoned the participants on a weekly pre-scheduled basis. The aim was to answer questions regarding the modules, to give feedback, and for participants to bring up additional problems. Telephone calls were done according to written guidelines and were to be approximately 10 min. Due to restriction given by Norwegian laws, the present study did not involve an online discussion group for the participants or email-contact with the therapist, as used in the Swedish studies. The therapists attended a 1-day work-shop on guided self-help via internet by Carlbring prior to the study.

Outcome measures. The participants were assessed at T1: pre-treatment, T2: post-treatment, T3: at 6-month follow-up.

Primary outcomes. The Agoraphobic Cognitions Questionnaire (ACQ; Chambless, Caputo, Bright, & Gallagher, 1984) consists of 19 items rated on a five-point scale and measures catastrophic cognitions as a consequence of experiencing anxiety. The reliability of ACQ, estimated by Cronbach’s alpha, was T1: 0.69.

The Body Sensations Questionnaire (Chambless et al., 1984) have 16 items rated on a five-point scale and measures fear of bodily sensations associated with autonomic arousal. Cronbach’s alpha; T1: 0.81.

The Mobility Inventory-Alone (MI-A; Chambless, Caputo, Jasin, Gracely, & Williams, 1985) have 24 items rated on a five-point scale and measures agoraphobic avoidance behaviour in relation to different situations when alone. Cronbach’s alpha; T1: 0.87.

Secondary outcomes. Beck Depression Inventory (BDI; Beck et al., 1961) have 21 items and measures depressive symptoms during the last week. Cronbach’s alpha; T1:0.87.

The Bergen Insomnia Scale (BIS; Pallesen, Bjorvatn, Nordhus, Siversten, & Hjørnevik, 2008) have six items rated on a eight-point scale and measures sleep-problems and related day-time functioning during the last week. Cronbach’s alpha; T1: 0.87.

Inventory of Interpersonal Problems 64 (IIP-64; Horowitz, Rosenberg, Baer, Ureño, & Villaseñor, 1988; Monsen, Hagtvet, Havik, & Eilertsen, 2006) have 64 items rated on a five-point scale, based on a circumplex model for interpersonal problems. Cronbach’s alpha of IIP-64; T1: 0.95.

2.3. Baseline predictors of outcome

Socio-demographic factors. Age and level of education.

History and severity of PD-symptoms. Duration of PD and clinician rated severity (CSR).

Comorbidity. Depressive symptoms (BDI), sleep-problems (BIS), and Interpersonal distress (IIP-64).

2.4. Satisfaction with treatment

Global evaluation and satisfaction. SLUTTP (Havik et al., 1995) comprises global ratings of change, satisfaction with the treatment, evaluation of the importance of different aspects of the program, and how demanding the program was.

2.5. Statistical analysis

Group differences between treatment completers versus drop-outs at baseline were analysed with t-test for independent groups. Change in average pre-treatment, post-treatment and follow-up scores on outcome measures were tested with t-test for dependent samples. Within-group effect-size was estimated with pooled standard deviation (Kazdin, 2003). Analysis of satisfaction with treatment and evaluation of program was based on treatment completers only. The relationships between selected predictors and residual gain scores of primary outcome measures were analysed in multiple regression analyses. Residual gain scores estimate the individuals’ change on the outcome measurement corrected for their initial level of that measure (Chambless, Tran, & Glass, 1997). In the regression analyses predictors were entered in one model in order to identify predictors of outcome at post-treatment and 6-month follow-up. Statistical analyses were done by SPSS version 15.0.1.

2.6. Procedure

Participants, attrition, and intention to treat. Twenty-seven participants were included in the study. More than two thirds (70%) of the sample were female, had higher education at least at college level (69%), were co-habiting (77%), and employed (73%). Participants had an average age of 40 years (M = 40.5, SD = 12.4) with an onset of panic attacks 12 years ago (M = 11.8, SD = 11.2). The majority of the participants (63%) had agoraphobia. Two thirds had been using medication the last 2 years and 60% of the participants used medication at the onset of treatment. The majority (85%) had sought help for their PD-symptoms prior to the study.

Seven participants (26%) dropped out during treatment and one who completed the self-help program did not come to the post-treatment assessment interview. For this group, pre-treatment scores were carried forward according to the intention to treat principle.

Participants who had not sought help for their problems the last 2 years did have a greater risk at dropping out during treatment (t (24) = 2.191, p = .04), otherwise no significant differences were found between treatment completers and drop-outs on the study variables, including the primary and secondary outcomes.

3. Results

3.1. Primary and secondary outcomes

Average changes from pre-treatment to post-treatment and 6-month follow-up respectively were statistically significant on all primary outcome measures. Table 1 shows medium to large within-group effect-sizes from pre-treatment to post-treatment. No significant changes were observed from post-treatment to 6-month follow-up.

Secondary measures did change significantly from pre-treatment to post-treatment and changes remained stable or had further improvement at 6-month follow-up (Table 2).

3.2. Predictors of outcome

Table 3 shows interactions and multiple regression analyses of possible predictors within three categories: socio-demographic variables, history and severity of PD-symptoms, and co-morbid symptoms. The regression model showed significant interaction between predictors and residual gain score of outcome on agoraphobic behaviour (MI-A) at post-treatment and 6-month follow-up (Table 3), whereas the full regression model did not predict outcome on BSQ and ACQ at post-treatment and 6-month follow-up.

Table 1

<table>
<thead>
<tr>
<th>Measurers</th>
<th>Mean</th>
<th>SD</th>
<th>ES*</th>
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</thead>
<tbody>
<tr>
<td>BSQ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>42.37</td>
<td>11.61</td>
<td>0.61</td>
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<tr>
<td>Post-treatment</td>
<td>35.15</td>
<td>12.10</td>
<td>0.61</td>
</tr>
<tr>
<td>Follow-up (6 months)</td>
<td>36.85</td>
<td>14.02</td>
<td>0.43</td>
</tr>
<tr>
<td>ACQ</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Pre-treatment</td>
<td>44.56</td>
<td>9.74</td>
<td>–</td>
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<tr>
<td>Post-treatment</td>
<td>36.41</td>
<td>10.67</td>
<td>0.80</td>
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<tr>
<td>Follow-up (6 months)</td>
<td>37.70</td>
<td>12.46</td>
<td>0.61</td>
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<tr>
<td>MI-A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-treatment</td>
<td>54.85</td>
<td>18.05</td>
<td>–</td>
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<tr>
<td>Post-treatment</td>
<td>45.74</td>
<td>14.89</td>
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<tr>
<td>Follow-up (6 months)</td>
<td>46.67</td>
<td>17.90</td>
<td>0.46</td>
</tr>
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</table>

Notes.  * p < .05; ** p < .01. p Values are based on paired samples t-tests compared with pre-treatment.

Table 2

<table>
<thead>
<tr>
<th>Measurers</th>
<th>Mean</th>
<th>SD</th>
<th>ES*</th>
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<tbody>
<tr>
<td>BDI</td>
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<tr>
<td>Pre-treatment</td>
<td>12.04</td>
<td>7.48</td>
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<tr>
<td>Post-treatment</td>
<td>9.70</td>
<td>8.33</td>
<td>0.30</td>
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<tr>
<td>Follow-up (6 months)</td>
<td>9.89</td>
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<td>0.27</td>
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<tr>
<td>BIS</td>
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<tr>
<td>Pre-treatment</td>
<td>16.81</td>
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<td>–</td>
</tr>
<tr>
<td>Post-treatment</td>
<td>13.41</td>
<td>10.19</td>
<td>0.33</td>
</tr>
<tr>
<td>Follow-up (6 months)</td>
<td>13.41</td>
<td>10.50</td>
<td>0.33</td>
</tr>
</tbody>
</table>

Notes.  * p < .05; ** p < .01. p Values are based on paired samples t-tests compared with pre-treatment.

3.3. Satisfaction with treatment and compliance

All participants who attended post-treatment assessment were satisfied with treatment, and perceived the treatment suitable for their problems. The majority (74%) reported to be satisfied with the reduction in symptoms they had obtained during treatment, whereas 5% reported negative impact of treatment.

Treatment-components’ was evaluated at the end of treatment as being of great or very great importance as follows by the participants: written material 90%, practical exercises 74%, phone-calls 68%, the quiz 37%, and the essay questions at the end of each module 32%. In an open-ended question, psychoeducation materials with explanations of anxiety symptoms during panic attack and breathing and relaxation exercises were specially mentioned to be of help. Suggested improvements to enhance the usefulness of the program were more time to complete the modules and more contact with the therapist.

Participants who completed the program had visited almost all modules (M = 9.8, SD = 0.7), and spent about 3.5 h per week with...
the program. The weekly telephone contact had on average lasted less than 10 min ($M = 7.7$ min, $SD = 2.6$ min).

4. Discussion

The results from present study indicate that the guided self-help program can be successfully disseminated from one country to another with a significant impact on primary and secondary symptoms. Medium to large effects on primary outcome measures were observed from pre- to post-treatment. Significant improvements were also observed in secondary measures from pre- to post-treatment, and the changes remained stable or had further improvement at 6-month follow-up. Longer duration of PD-symptoms did predict less improvement on all outcome measures, whereas higher age predicted more improvement.

Effect sizes in present study were comparable to what have been obtained in the earlier Swedish studies, see e.g. Carlbring et al. (2003). However, the present study had more drop-outs (30%) than the Swedish studies of the PD-program (Carlbring et al., 2001, 2003, 2005, 2006). This may be explained by the fact that the present study could not include unlimited email-contact with therapists or online discussion groups for the participants, such as in the Swedish studies (Carlbring et al., 2006), due to Norwegian laws. This may have left participants feeling less supported in the course of the program with subsequently more drop-out. On the other hand, the attrition rate was comparable to what have been reported in studies of guided self-help programs for depression (Andersson et al., 2005).

Due to the lack of knowledge regarding predictors of outcome on guided self-help programs for PD, analysis of predictors of were included in the study regardless of a small sample size. The predictor analysis revealed that duration of PD-symptoms was the strongest predictor of poorer improvement on PD-symptoms either at post-treatment, follow-up, or both. Higher age predicted better outcome on agoraphobic behaviour and fear of physical symptoms after treatment. The latter does somewhat contradict a concern that guided self-help programs via Internet are best suited for younger patients. The main predictor for poorer outcome identified in present study, duration of PD-symptoms, is in line with previous identified predictors after brief cognitive therapy for PD (Dow et al., 2007).

The main limitation of this study is a small study sample where we can only expect to document strong effects. Neither can we conclude that the positive outcomes found in the study were in fact due to the treatment as there was no comparison group. Even so, the participants had had PD-symptoms on the average for 12 years and the majority had previously received medical and/or psychological treatment, reducing the likelihood of spontaneous recovery. Also the stability of symptom levels from post-treatment to 6-month follow-up makes it reasonable to attribute the reduction in symptom level to the program.

This study gives further support to the findings that guided self-help via Internet is a useful treatment for those with PD, and there also seems to be a spill-over effect of improvement in depressive and sleep-related symptoms as well as interpersonal distress. There is, however, a need for further studies to confirm if the identified predictors in present study are relevant in other samples and settings, and if duration of PD-symptoms should be of special concern when guided self-help programs via Internet are considered as treatment option. There is, however, a need for studies to further explore the format and length of appropriate support within the frames of guided self-help programs, and thereby increasing the treatment effect and proportion of treatment completers.

Acknowledgement

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References


