

A Pilot Trial of 'Panic Online' as a Self-Guided Treatment for Panic Disorder

Britt Klein (bklein@swin.edu.au)

Faculty of Life and Social Sciences
Swinburne University of Technology, Hawthorn VIC, Australia
and
Department of General Practice
Monash University, Notting Hill VIC, Australia

Kerrie Shandley (kshandley@swin.edu.au)

Faculty of Life and Social Sciences
Swinburne University of Technology, Hawthorn VIC, Australia

David Austin (daustin@swin.edu.au)

Faculty of Life and Social Sciences
Swinburne University of Technology, Hawthorn VIC, Australia

Sara Nordin

Department of Behavioural Sciences
Linköping University, Sweden

Abstract

Panic Online (PO) is a well-established evidence-based internet intervention program for panic disorder (PD) (with or without agoraphobia), when supported by a therapist (email or face-to-face). However, there has been no exploration to date as to whether PO is also effective when administered in a self-guided format (i.e., with no therapist assistance provided). The objective of this pilot trial was to examine whether PO as a self-guided program was effective at reducing panic symptomatology and furthermore, whether participants found the program format satisfactory. Pre- and post-treatment clinical interviews were conducted by telephone with six participants and experience of using the self-guided PO program was also explored. Paired samples *t*-tests revealed that PD and agoraphobia were significantly reduced by post-treatment, but panic frequency (over the previous month) did not significantly change. Qualitatively, all participants reported being satisfied with the program, however all participants reported that access to human support during the intervention (e.g., to answer questions, to be heard, to help motivate) was preferable. Initial pilot data suggests that PO self-guided works effectively as a stand-alone clinical internet-based treatment program for PD, however additional research is required to definitively establish its efficacy.

Keywords: *Computer-aided psychotherapy; panic disorder and agoraphobia; self-help; CBT*

Introduction

The development of innovative, time and cost-effective methods of treating mental health problems are necessary. Specifically, treatment options are

needed that adequately address psychological help-seeking barriers such as stigma and embarrassment, and accessibility barriers such as shortage of health personnel and travel (especially in remote areas) (Abbott, Klein & Ciechomski, 2008; Barak, Klein & Proudfoot, 2008). The use of therapeutic internet interventions represents an opportunity to dramatically increase the accessibility of mental health care internationally.

Internet-based therapeutic interventions have fast become an effective means of delivering treatment (Barak, Hen, Boniel-Nissim & Shapira, in press; Barak et al., 2008; Marks, Cavagnagh & Gega, 2007; Palmqvist, Carlbring & Andersson, 2007; Spek, Cuipers, Nyklicek, Riper, Keyzer & Pop, 2007) that greatly improve the accessibility of mental health treatment at a lower cost, greater convenience, and with reduced stigma. Broadly speaking, there are two major types of therapeutic internet interventions; self-guided and human supported.

Self-guided internet interventions involve the provision of psychological treatment information whereby a consumer works independently through a structured self-help program without human assistance (professional or peer). In some ways, it resembles bibliotherapy formats that have been transferred to an online format. However, feedback or support may be offered by way of online activities and interactive programming. Human supported internet interventions usually combine a structured cognitive behavioural therapy (CBT) treatment program with human

assistance (e.g., via email) in the form of support and feedback.

Panic Online (PO) is an example of a highly effective human supported internet intervention for people with a DSM-IV diagnosis of panic disorder (with or without agoraphobia; PD/A). Over multiple trials we have shown that PO produces reductions in panic symptomatology when compared to a self-monitoring condition (Klein & Richards, 2001); that PO is clinically effective when compared to information only control conditions (Klein, Richards & Austin, 2006; Richards, Klein & Austin, 2006), other forms of manualised and telephone based CBT (Klein et al., 2006) and to the 'gold standard' of PD treatment (i.e., 12 sessions of face-to-face CBT delivered by psychologists) (Kiroopoulos et al., in press).

We have also demonstrated that PO achieves similar patient outcomes regardless of whether it is supported by general practitioners (GPs) consulting face-to-face with their patients or by psychologists using email (Pier et al., in press; Shandley et al., 2008). In addition, PO was one treatment delivery model used in an exploratory economic analysis looking at the different pathways of primary mental health care. This study demonstrated that PO had the potential to be highly cost-effective whether assisted by a psychologist or GP at around \$10,000 per DALY averted. This ratio is much less than the commonly used threshold (or cut-off) for cost-effectiveness of around \$40,000/DALY reported for pharmaceuticals within the Australian Pharmaceutical Benefits Scheme (Milhaploulos, Kiroopoulos, Shih, Gunn, Blashki & Meadows, 2005). Nevertheless, the effectiveness of PO when delivered as a fully self-guided therapeutic internet intervention program (without any human support) is likely to offer substantial additional cost benefits. However, this delivery format has not, to date, been explored. Investigating the potential effectiveness of PO as a self-guided intervention is central to the future mass dissemination capabilities of this clinical treatment modality.

If PO proves effective when delivered in a self-guided format, it has the capacity to reach a far greater number of individuals worldwide than when supported by a therapist. Furthermore, as a self-guided internet program requires no therapist time, it would be more sustainable due to the substantial reduction in operating costs. Our first aim was to modify the current PO human supported internet program for use as a self-guided program. Our second aim was to conduct a small pilot trial of the PO self-guided program to evaluate whether it was effective in reducing panic symptomatology. The third aim was to explore participant's thoughts and experiences of using the self-guided program. We hypothesised that the PO self-guided version would significantly reduce scores on the three primary outcome measures (PD and agoraphobic

DSM-IV clinician severity ratings and the number of panic attacks in the last month).

Method

Participants

Within a 3-week period, 23 people registered their interest in the PO self-guided pilot trial via our website. Six people met the criteria for PD/A and agreed to participate in the study. Inclusion criteria for this study were that participants were Australian residents and had a primary diagnosis of PD/A according to DSM-IV criteria (American Psychiatric Association, 1994).

PD/A was considered to be the primary diagnosis when the severity was estimated to be two points higher than any secondary diagnosis on the clinician's nine-point severity rating scale in the *Anxiety Disorders Interview Schedule-IV* (ADIS-IV; Brown, Di Nardo, & Barlow, 1994). Exclusion criteria were presence of a seizure disorder, stroke, schizophrenia, organic brain syndrome, heart condition, alcohol or drug dependency, or chronic hypertension. They agreed not to undertake any other type of psychological therapy or self-help procedure during the study. Participants taking medication for anxiety or depression were accepted if they had been stabilised on their medication for at least 12 weeks but continued to experience panic symptoms and meet a diagnosis of PD/A.

The six participants (5 female, 1 male) had a mean age of 36.7 years ($SD = 10.5$); mean education of 12.2 years ($SD = 1.7$); and the number of panic attacks experienced within six months prior to assessment was 40.50 ($SD = 71.7$). Four participants had a primary diagnosis of PD with agoraphobia and two without agoraphobia. The number and type of the clinical secondary diagnosis for the entire sample was: one with depression, one with social anxiety disorder, one with obsessive compulsive disorder, one with generalized anxiety disorder and one with alcohol abuse. Of the six participants, three were using psychotropic medication (benzodiazepines, SSRI or anti-depressant medications).

Measures

Clinical interviews were conducted by telephone. The ADIS-IV and the *Mini International Neuropsychiatric Interview Schedule* (MINI; Sheehan et al., 1998) were used to determine the primary diagnosis of PD/A and the presence of any co-morbid secondary conditions. Participants were also asked whether they were using medication, and the type and dosage. Rohde, Lewinsohn, and Seeley (1997) have found that telephone based clinical assessments demonstrate excellent inter-rater reliability with face-to-face clinical assessments.

In addition to the diagnostic clinical interview at post-treatment, participants were asked a series of semi-

structured questions about their experiences with the self-guided PO program and general attitudes to therapeutic internet interventions. Participants were asked about the manner in which they worked through the program (e.g., linear or non-linear), motivational levels to complete the online activities, and whether they would have preferred support, and if so, what type and how often. Participants were also asked whether they would use a self-guided internet intervention again and what they perceived the advantages and disadvantages were of this modality.

Design

After study eligibility was determined, participants were emailed access details to immediately commence the PO self-guided internet treatment program.

Panic Online: Self-Guided Version

Panic Online consists of two internet interventions. Panic Online (Step 1) is an open access internet-based education intervention consisting of five modules of psycho-education panic information and a registration page. Panic Online (Step 2) is the password protected PD/A CBT treatment program comprising of four learning modules and introductory and relapse prevention modules. Content includes common treatment methods used in standard CBT for PD (i.e., instructions for controlled breathing, progressive muscle relaxation, cognitive restructuring and interoceptive and situational exposure). For the purposes of this study, the PO therapist-assisted version was modified only in that it read as a self-guided program without reference to therapist assistance.

The program itself contains standardised instructions and information, including downloadable audio (for both tense-relax and passive progressive muscle relaxation) and sequenced photographic slide shows of two gradual exposure in vivo exercises (i.e., going to the supermarket and driving a car). Participants were able to enter and self-monitor their weekly panic summary information online. Links to other useful panic/anxiety websites were also contained in the program. In addition, PO includes an adjunct stress management program that incorporates six learning modules (coping with daily stresses, time and anger management, tuning into one's thoughts, relaxation, and social connectedness) and a benzodiazepine reduction program consisting of five learning modules.

Procedure

This study was approved by the Monash University Human Research Ethics Committee. Self-referred participants were recruited into the trial via Australian mental health websites and local media. Upon registration, a brief telephone screen was conducted with each participant. A plain language statement and informed consent form was then emailed to the

participant if it appeared probable that they would meet eligibility criteria. Once informed consent was obtained, a full clinical telephone assessment using the ADIS-IV and MINI was conducted, taking from 60-90 minutes. Two psychologists (one probationary, one fully registered), trained in the administration of the ADIS-IV and MINI, conducted all the screens and telephone assessments. The first author (clinical psychologist) supervised the probationary psychologist. After a primary diagnosis of PD/A was established, eligible participants were provided with login details to the PO self-guided version.

Post-treatment clinical telephone assessments (using the ADIS-IV and MINI) were conducted following six weeks of program access. Additionally, participants were given the opportunity to provide feedback regarding their experience and use of the PO self-guided program. The clinician who conducted the pre-treatment assessments did not conduct the post-treatment assessments.

Results

Statistical procedures and analyses

Data analysis involved intention-to-treat (ITT) analyses. That is, for those participants who were not contactable at post-assessment ($n = 1/6$, 16.7%), pre-assessment scores were carried forward and used in post-treatment. ITT analysis is the standard and most widely advocated strategy to address the problem of attrition (Gross & Fogg, 2004; Lachin, 2000). This form of analysis has become common practice in psychological and internet-based treatment research (e.g., Barlow, Gorman, Shear & Woods, 2000; Carlbring et al., 2005; Klein et al., 2006). All dependent variables were normally distributed and no transformation was necessary. The means and standard deviations for each dependent variable at both assessment phases are shown in Table 1.

Table 1. Means and standard deviations on treatment outcome measures at pre- and post-assessments

Variable	<i>N</i>	<i>M</i>	<i>SD</i>
ADIS-IV PD Rating			
Pre-assessment	6	5.17	.98
Post-assessment	6	2.83	2.04
ADIS-IV Agoraphobia rating			
Pre-assessment	6	5.00	2.53
Post-assessment	6	2.50	1.52
PAMTH			
Pre-assessment	6	8.83	12.86
Post-assessment	6	1.33	1.51

Note. ADIS-IV PD rating = Clinician's panic disorder severity rating; ADIS-IV Agoraphobia rating = Clinician's agoraphobia severity rating; PAMTH = number of panic attacks in the past month.

Evaluation of treatment effects

Three paired sample *t*-tests were conducted to compare pre- to post-treatment differences on the PD and agoraphobic clinician ratings, and number of panic attacks in the last month, to test whether participants significantly improved at post-treatment.

Treatment Outcomes

Panic symptomatology. Paired samples *t*-tests revealed significant changes from pre- to post-treatment on the panic disorder and agoraphobia clinical severity ratings, ($t(5) = 3.32$, $p < .05$ (eta squared = .20) and ($t(5) = 2.83$, $p < .05$ (eta squared = .22) respectively. However, no significant difference was found on the number of panic attacks one month before pre- and post-treatment assessment, ($t(5) = 1.61$, $p > .05$ (eta squared = .21). The eta squared statistics indicated large treatment effects (Cohen, 1988).

Qualitative responses. Qualitative responses given at post-treatment interviews ($n = 5$) were grouped according to the following key themes: program usage and general experience, assistance/support issues, and general attitudes to internet-based mental health treatments:

Program usage and experiences. Participants were asked 'how they found the PO self-guided program?' All participants stated that they enjoyed using the program and considered it easy to read and follow. Most participants ($n = 4$) also commented that the treatment information was pertinent and techniques helpful. However, one participant stated that it was "too simple, too short and a bit boring without bells and whistles". Participants reported a variety of different approaches to the question 'how they worked through the program?' All participants stated that they read the entire program upon first entry. Three participants reported that they then read each module week-by-week (as recommended). The other two participants stated that they returned to the program on an 'as needed basis' during the six week treatment period (usually when their anxiety rose or they had a panic attack). Participants were asked whether they undertook the recommended treatment exercises. Four participants reported trying them and the other stated that they found the exposure exercise too difficult.

Assistance/support issues. Participants were asked about their 'motivational levels' during the intervention period. All participants reported varying levels of motivational difficulties (from some to most of the time). All participants reported that reminders/prompts and/or external assistance would have assisted in increasing their motivation to engage more frequently with the program. More specifically, all participants reported that having access to some kind of human external support would have been preferable. The reported reasons for wanting access to external support included: provision of advice and support ($n = 5$),

connectedness and validation ($n = 3$), and motivational reminders to adhere to treatment ($n = 2$). There was some variation in how participants thought the support should be delivered: email ($n = 5$), telephone ($n = 2$) and chat room or bulletin board access ($n = 2$). One participant, however, stated being opposed to the use of chat rooms out of concern of "being sucked into other people's problems and groupthink mentality". There was also some variability in how frequently participants believed assistance should be dispensed: weekly ($n = 3$), fortnightly ($n = 1$), at least once or 'as required' ($n = 1$). All participants stated the automated reminders would have been helpful.

General attitudes towards therapeutic internet intervention programs. Participants were asked if they saw any disadvantages of using self-help internet treatments. All five participants reported that the lack of human support was the biggest issue. Additionally, three participants reported feeling slightly alienated and one reported that it made them feel a little guilty "makes me feel like it's something to be ashamed about as I am doing it alone". Two participants reported that self-discipline was hard to maintain without someone 'monitoring' their program usage/progress and three participants also reported that not having assistance made it difficult to clarify issues that they were struggling with.

Participants were asked if they saw any advantages of using self-guided internet interventions. Responses included the benefits of not having to leave the house to access treatment ($n = 3$); that this type of mental health treatment delivery format increases accessibility ($n = 3$); and that it reduced stigma ($n = 2$) with one participant commenting that once they completed the program, they realised 'they were not alone' and that should they require traditional mental health services in the future, they would not hesitate in seeking it.

Miscellaneous. Participants were asked whether they had searched the internet for self-help mental health treatment information online before commencing the study and all said 'yes'. All participants reported that they would use this modality again.

Discussion

The results from this open pilot trial suggest that, as hypothesised, the self-guided version of PO was effective in the treatment of PD/A. Significant reductions from pre- to post-treatment on the DSM-IV clinical status of panic disorder and agoraphobia clinician ratings support this. However, significance was not obtained for a reduction in panic attacks in the month prior to pre- and post-treatment assessment. Nevertheless, observation of the mean difference from pre- to post-treatment assessment and the eta squared effect size obtained suggest a trend towards a reduction in the frequency of panic attacks. It should also be

noted that as participants were reflecting on “number of panic attacks in the last month” and the treatment program only ran for 6 weeks, there was essentially only a 2 week period separating the pre and post “last month” periods.

Qualitative feedback suggested high levels of satisfaction with the program itself, although the preferability of human support during the treatment was unanimously endorsed. However, post-treatment results demonstrated that participants improved without support. It is important to note, however, that the effect sizes obtained in this study were, indeed, smaller than those obtained in our previous PO trials (with human assistance), (see: Klein et al., 2006; Richards et al., 2006; Shandley et al., 2008). These results are consistent with research from a recent meta-analysis (Spek et al., 2007) suggesting that although both types of internet interventions (self-guided and human supported) are effective, human supported internet interventions, do achieve, on average, higher treatment effect sizes. Additionally, correlational analysis by Palmqvist et al (2007) demonstrated a positive association between the amount of therapist time and group effect sizes.

Participant feedback also indicated that program completion aided in the reduction of feeling stigmatized and therefore increased willingness to access mental health services in the future, should they require it. Such responses suggest that stepped-care approaches might benefit from incorporating self-guided internet interventions as one of the first steps in this process. It is noteworthy that this model of “high volume, low intensity” self-guided internet support has already been adopted into a stepped-care model by the National Health Service in the United Kingdom. However, in this study, participants were provided with human contact (in the form of pre- and post-assessment sessions) and it is unknown what effect this may have had on their motivational levels to engage with, and complete the self-guided program.

As this was a small pilot trial, the treatment outcome results need to be interpreted with caution. The next step is to conduct a randomized control trial comparing the two versions of PO (self-guided and human supported) to a waitlist control. Only then will we be able to say with confidence, how effective the PO self-guided program is. Additionally, a formal cost effectiveness analysis should be integrated into this trial to inform our understanding of the relative cost-benefit profiles of these internet intervention models. In the future, however, the integration of both types of internet intervention (perhaps in a stepped care framework) will most likely be of tremendous benefit in increasing access to mental health treatment and significantly reducing health care costs.

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Research Profiles

Britt Klein is the Co-Director of the National eTherapy Centre and Associate Professor in the Faculty of Life and Social Sciences at Swinburne University. Britt's research involves developing and evaluating internet-based treatments for anxiety, mood, and alcohol and substance abuse disorders; including other addictive disorders and chronic physical health conditions.

Ms Kerrie Shandley is a registered psychologist and Research Fellow in the Faculty of Life and Social Sciences. Kerrie has worked on a number of internet-based research studies such as Self-Guided Panic Online, CVD & Depression portal and Stress & Anxiety portal. She recently commenced a PhD at Swinburne investigating Autism and Gastrointestinal dysfunction.

Associate Professor David Austin is a clinical psychologist and Co-Director of the National eTherapy Centre in the Faculty of Life and Social Sciences at Swinburne University. David's research work relates to investigations of cognitive models of anxiety disorders, psychometric evaluations of psychological assessments, and on the efficacy of internet-based treatments for mental health disorders.

Sara Nordin completed her Masters degree in 2007 at the Linköping University, Sweden in the area of self-help internet treatments for panic disorder.

Correspondence to:

Associate Professor Britt Klein
National eTherapy Centre
Faculty of Life and Social Sciences
Swinburne University of Technology
H31 PO Box 218
Hawthorn VIC 3122, AUSTRALIA
bklein@swin.edu.au.