

ORIGINAL ARTICLE

Significant events in an Internet-delivered (*Space from Depression*) intervention for depressionDerek Richards^{1,2,*} , Mairéad Dowling¹, Emma O'Brien¹, Noemi Viganò¹ & Ladislav Timulak¹¹ E-mental Health Research Group, School of Psychology, University of Dublin, Trinity College Dublin, Dublin, Ireland² SilverCloud Health, Dublin, Ireland

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Abstract

Objective: The advantages and effectiveness of Internet interventions have been established. Little is known about the critical processes of change in Internet-delivered interventions and of the psychological experience of users. These are both clinically relevant and have a link to the overall outcome of therapy. The goal of this article was to gain an insight into the important therapeutic processes in an 8-week supported online self-administered CBT-based treatment for depression. *Method:* Respondents were participants ($N = 88$) in a randomised controlled trial with an initial score of 14–28 on the Beck Depression Inventory (BDI-II), who completed at least one module of the online intervention, and at least one Helpful Aspects of Therapy (HAT) questionnaire. *Analysis:* The HAT data were analysed using descriptive–interpretative qualitative analysis to (i) identify helpful and hindering events, (ii) describe key events and (iii) describe the corresponding impacts of these events on the clients. *Results:* In total, *six* helpful events were reported (provision of information, core CBT activities, mindfulness, platform accessibility and usability, supporter, personal stories and examples) and *eight* associated impacts (applying new coping skills/behavioural change, awareness and insight, improved well-being, support/validation, expression/relief, self-efficacy/empowerment/sense of achievement, personal connection). In total, *five* hindering events were identified (platform features/design, external factors, internal factors, supporters' feedback and content of the programme) and *five* associated impacts (disappointment, frustration/irritation, confusion, mood deterioration and being self-critical/blaming) were reported. *Conclusions:* The current results support previous findings that CBT principles are important in online delivery. The role of the supporter emerges as a key ingredient in online delivery worthy of further investigation.

Keywords: cognitive behaviour therapy, community sample, depression, Internet-delivered, significant events research

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Introduction

A growing number of studies are examining technology-assisted interventions aimed at overcoming barriers to receiving traditional face-to-face therapy (Lindfors & Andersson, 2016). Computerised and Internet-delivered interventions for the treatment of depression have become common

formats used in research and, more gradually, in clinical settings (Andersson & Cuijpers, 2009). Meta-analytic studies support the efficacy and effectiveness of Internet-delivered interventions for depression and anxiety (Cuijpers et al., 2009; Richards & Richardson, 2012; Richards, Richardson, Timulak & McElvaney, 2015a). To date, however, little is known of the psychological experience of users of Internet-

delivered interventions. The psychological experience of users may be important in determining the factors influencing adherence and usage of any intervention and may reveal ways in which any intervention can be improved (Feather et al., 2016).

This study sought to gain an insight into the important therapeutic processes in an 8-week, supported, online, self-administered CBT-based treatment for depression. Specifically, we wanted to know what participants found helpful and/or hindering in their online CBT treatment for depression. Learning more about what may be working or not in this type of delivery format is potentially useful for developers of online psychological treatments and to those who implement and research such interventions.

Significant events in Internet-delivered treatments

Research that investigates the helpful and hindering events of therapy is an example of the 'events paradigm' (Elliott, Slatick & Urman, 2001), and is one method of evaluating and understanding the user's experience of any psychological intervention. Significant events research is based on examining client-identified important moments in the therapy process – both helpful and hindering – and classifying them into types (Elliott, 1985), which through examination may further our understanding of how any therapeutic intervention works (Timulak, 2007).

Studies investigating significant events in face-to-face therapy have identified several impacts for clients including awareness/insight, behavioural change/problem solution, empowerment, relief, exploring feelings/emotional experiencing, feeling understood, client involvement, reassurance/support and personal contact (Timulak, 2007). Not surprisingly, these are impacts (cognitive, emotional, behavioural, motivational and relational) emphasised by different theoretical approaches (Timulak, 2010). Hindering events have been shown to be reported less frequently than helpful events (cf. Elliott, 1985; Timulak, 2010).

Helpful and Hindering Events in online delivered CBT

A small number of studies have investigated the psychological experience of users in Internet-delivered treatments (Bendelin et al., 2011; de Graaf, Huibers, Riper, Gerhards & Arntz, 2009; Gerhards et al., 2011).

One study examined patients' experiences and the therapeutic processes in computer-based and face-to-face psychotherapy. Gega, Smith and Reynolds (2013) suggested that clients' experiences of Therapist-led

Cognitive Behaviour Therapy (tCBT) and Computerised Cognitive Behaviour Therapy (cCBT) are distinct and favour tCBT. While awareness building through CBT was identified as a theme in terms of helpfulness in both tCBT and cCBT, the findings highlight the importance of the interpersonal aspect of CBT and suggest that cCBT has less impact on patient understanding and problem-solving. Gega et al. (2013) suggest that creating more personalised cCBT programmes, better tailored to individual problems and different levels of patient understanding, may be more useful. CCBT programmes which would help clients to make a connection between feelings, thoughts and behaviours and which demonstrate the application of therapy techniques through relevant case studies are recommended (Gega et al., 2013).

Richards and Timulak (2012) provide insight into clients' perceptions of helpful and hindering events of a therapist-delivered (e-mail) and self-administered (computerised) online CBT intervention for depression. They identified 15 helpful events in the online CBT treatments, such as provision of new information and scheduling/planning and seven associated impacts, such as awareness and insight and support/validation. A number of hindering events were also identified, such as frustration. They concluded that CBT principles remain established and important in online delivered treatments and that therapist responsiveness seems to have a noteworthy impact, beyond any established CBT techniques or strategies.

Method

Design

The study was conducted in the context of a randomised controlled trial, in which participants were assigned to one of two groups: (i) the Internet-delivered intervention for depression with support or (ii) the waiting-list control group (Richards et al., 2015a,b). A qualitative approach was adopted to identify and analyse the most helpful and hindering events, and their impacts reported by users. The goal of this analysis was to gain an insight into the important therapeutic processes in this intervention.

Participants

Between January 2014 and March 2014, all users of Aware services (an Irish charity supporting those with depression and bipolar disorder), who had expressed interest in participating in an online intervention *Space from Depression*, were eligible to participate. The

research study was advertised to users of Aware services on the Aware website. In two recruitment phases, 641 users self-referred read the information about the study and applied to participate in the research. Informed consent and baseline screening questionnaires were completed online. Thereafter, eligible participants were randomly assigned to the immediate treatment group ($n = 96$) or a waiting-list control group ($n = 92$). Participants in the treatment group were instructed to complete one module of the intervention per week. From week two onwards, participants in the treatment group logged into their account online and were asked to complete a HAT form about their previous online session.

The reader is directed to the following papers for further information on the study protocol (Richards et al., 2014) and main outcomes (Richards et al., 2015a, b). The principle inclusion criterion for the trial was a score of between 14 and 28 on the BDI-II. A number of exclusion criteria were also applied, namely participants reporting suicidal intent/ideation, psychosis, current engagement in psychological treatment for depression, prescription of medication for <1 month, alcohol or drug misuse and/or depressive symptoms preceding or coinciding with a diagnosed medical condition.

The findings outlined in this report are based on the analysis of 88 participants from the immediate treatment group who completed at least one module of the online intervention, had an initial score of 14–28 on the Beck Depression Inventory (BDI-II) and who completed at least one Helpful Aspects of Therapy (HAT) questionnaire.

Ethics

Participants were provided with information on their role in the research, and the aims and objectives of the study, prior to giving their consent to participate. Participants were also informed that they could withdraw from the study at any time. Participants who were excluded from the study, based on the criteria, were referred to other appropriate sources of support such as their GP or face-to-face counselling services. The study protocol, information on the study, informed consent and related materials were submitted and approved by the University ethics committee (22/11/2013).

Measures

Participants completed a battery of quantitative measures at baseline, post-treatment and at 3- and

6-month follow-up online. At baseline, the Beck Depression Inventory-II (BDI-II), Sociodemographic & History Questionnaire, Generalized Anxiety Disorder-7 (GAD-7) and the Work and Social Adjustment Scale (WASA) were completed for screening purposes. Thereafter, the BDI-II, GAD-7 and WASA were completed at the end of treatment, week 8 and at 3- and 6-month follow-up. The findings of these quantitative measures are published elsewhere (Richards et al., 2015b). The focus of this article was on the qualitative results of the Helpful Aspects of Therapy (HAT) Questionnaire, administered following each session of the intervention.

HAT Questionnaire

This is a brief, open-ended questionnaire completed by clients after each therapy session. Clients are asked to describe the most helpful events in the session and to rate their helpfulness (Llewelyn, 1988). They are also asked about hindering events in the session. The HAT questionnaire is the most common tool used to identify significant events in therapy (Timulak, 2007). In this study, participants were asked which event they found most helpful in a module. An event could be anything that happened during the session – it may relate to something the participant did or feedback from their supporter. They were also asked how the event was important. Participants were asked to describe any other helpful events and any hindering events that they experienced.

Interventions

Internet-delivered cognitive behaviour therapy (iCBT) program

Space from Depression is a seven-module, online, CBT-based, intervention for depression, delivered on a Web 2.0 platform using media-rich interactive content. The treatment comprises cognitive and behavioural components including self-monitoring and thought recording, behavioural activation, cognitive restructuring and challenging core beliefs. Each module follows a structured format that incorporates introductory quizzes, videos, informational content, interactive activities, as well as homework suggestions and summaries. The content of each module is described briefly in Table I below. In addition, personal stories and accounts from other users are incorporated into the presentation of the material.

Table 1: Space from Depression: description of module content.

Module name	Brief description
Getting started	Outlines the basic premise of CBT, provides information about depression and introduces some of the key ideas of <i>Mind Balance</i> . Users are encouraged to begin to chart their own current difficulties with depression
Tune in I: Getting to grips with mood	The focus in this module is on mood monitoring and emotional literacy. Users can explore different aspects of emotions, physical reactions, action and inaction, and how they are related
Tune in II: Spotting thoughts	This module focuses on noting and tracking thoughts. Users can explore the connection between their cognitions and their mood and record them graphically
Change it I: Boosting behaviour	This module focuses on behavioural change as a way to improve mood. Ideas about behavioural activation are included, and users can plan and record activities, and chart their relationship with their mood
Change it II: Challenge your thoughts	This module supports users to challenge distorted or overtly negative thinking patterns, with thought records, as well as helpful coping thoughts
Change it III: Core beliefs	This module outlines the role that deeply held core beliefs can play in mood and depression. Users can use a range of interactive activities to identify, challenge and balance any unhelpful core beliefs
Bringing it all together	In this final module, users are encouraged to bring together all the skills and ideas they have gathered so far, note their personal warning signs and make a plan for staying well

Supporters

The supporters in this study were trained volunteers from the charity Aware. The role of the supporter was to monitor participants' progress and provide postsession feedback. Each supporter was assigned eight participants and was provided with additional training (15 hours) in the SilverCloud platform and the delivery of feedback. Supporters could review each of their assigned participants' level of engagement with the programme content by means of a dashboard interface. Supporters were also divided into groups of five and assigned to a senior supporter, who acted as their group's mentor for supervision purposes. Supporters met within their group on a weekly basis to discuss any difficulties encountered and for guidance on supporting participants. Their work was overseen by the Clinical Director of Aware,

who helped manage any risk or other issues that emerged during the study.

Data analysis

The HAT data were analysed using descriptive–interpretative qualitative analysis (Elliot & Timulak, 2005). This method was used to (i) identify helpful and hindering events, (ii) describe key events and (iii) describe the corresponding impacts of these events, based on clinical judgement. In this study, the process of data analysis followed distinct steps:

1 *Preparation of the data*: Relevant data relating to helpful and hindering events and impacts were identified from the data set and sifted through thoroughly to gain a broad understanding of the data.

2 *Meaning units*: Data were divided into meaning units which communicated sufficient information to the reader on their own. The meaning units were the basis of the analysis.

3 *Organising structure*: The data were divided into domains of helpful and hindering events and the impacts of each type of event. The events and their impact were interpreted by the researcher based on participants' responses in relation to the helpful and hindering aspects of the intervention. If the participant appeared to be referring to a specific helpful/hindering aspect of the module, this was considered a helpful/hindering event. If the participant was describing an internal reaction to some specific aspect of the programme, this was considered a helpful/hindering impact.

4 *Categorisation of meaning units*: Similar events and similar impacts were clustered together to form categories of events or categories of impacts. Categories were created based on the researchers' interpretation of the participant accounts. The names of categories were based on the wording of participants' accounts within categories. The (names of) categories also incorporated categories identified in previous research (Richards & Timulak, 2012).

5 *Describing and presenting categories*: The categories of helpful and hindering events and their impact were listed with definitions for each. Tables outlining the frequency of events and impacts were produced to clearly illustrate the representativeness of categories to the sample.

The first phase of analysis was carried out by one of the authors (MD). Categorisation of the data followed those identified in previous research and extended these where appropriate. A second phase of analysis was carried out by another author (EO'B); there was

an 80% agreement in inter-rater reliability between the authors. At this stage of the analysis, the categories were collapsed and re-organised to best represent the data. A further quality check was conducted by the authors (NV, DR), resulting in a final list of helpful and hindering events and their impacts. The categories were then audited by another author (LT).

Results

Of the 88 participants included in the analysis, 66 (74%) were female and 22 (26%) were male, with ages ranging from 21 to 60 years ($M = 37.93$, $SD = 9.82$). All participants had an initial BDI-II score within the mild-to-moderate range, that is 14–28 ($M = 20.93$, $SD = 3.85$). The computer literacy level, employment and civil status of the participants are outlined in Table II.

The treatment programme comprised seven modules, and on average, participants logged on 20.3 times during the study ($SD = 14.3$). The participants completed a total of 265 HAT Questionnaires ($M = 3.01$, $SD = 2.18$). Twenty-nine and a half per cent (29.5%) of participants completed five or more HAT questionnaires. The distribution of completed HATs is illustrated in Figure 1.

In total, six helpful events were reported (provision of information, core CBT activities, mindfulness, platform accessibility and usability, supporter, personal stories and examples) and eight associated impacts (applying new coping skill/behavioural

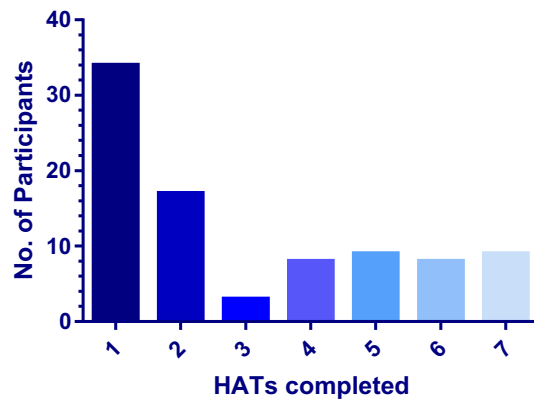


Figure 1: Distribution of completed HAT questionnaires.

change, awareness and insight, improved well-being, support/validation, expression/relief, self-efficacy/empowerment/sense of achievement, connection). In total, five hindering events were identified (platform features/design, external factors, internal factors, supporters’ feedback, content of the programme), and five associated impacts (disappointment, frustration/irritation, confusion, mood deterioration, self-critical/blaming) were reported. The complete list of helpful and hindering events and impacts and their definitions can be found in Tables III, IV, and V, VI, respectively. Table VII shows the instances of helpful events and helpful impacts, and Table VIII shows the instances of hindering events and hindering impacts.

Table II: Participants’ characteristics.

Characteristic	Frequency	Per cent of total sample
Computer literacy level		
Average	10	11.4
Mildly confident	2	2.3
Confident	33	37.5
Very confident	43	48.9
Employment		
Full-time	37	42
Part-time/Student	25	28.4
Stay-at-home parent	13	14.8
Unemployed	12	13.6
Retired	1	1.1
Civil status		
Single	23	26.1
Married	42	47.7
Separated/Divorced	5	5.7
Have a partner	15	17
Widowed	1	1.1
Other	2	2.3

Helpful events

The helpful events and associated impacts are presented in Table VII: the numbers correspond to the number of participants identifying each item and the number of counts of each of the qualitative items. The most frequently reported helpful events were provision of information ($n = 88$), core CBT activities ($n = 81$) and the supporter ($n = 72$), followed by mindfulness ($n = 27$), accessibility and usability ($n = 14$) and personal stories and examples ($n = 10$).

Participants stated that being provided with psychoeducational information was helpful. This included information explaining CBT, the TFB cycle, the importance of behavioural activation, learning about emotions, learning about core beliefs, thinking styles, and negative thoughts, and the relationship between behaviours, thoughts and emotions.

I expected my feelings to be hard to define but just with the TFB cycle, I see a complex subject has been

Table III: Definitions of helpful events.

Helpful event	Definition
Provision of information	The delivery of psychoeducational information to the user about some aspect of the programme, for example explaining CBT, the TFB cycle, the importance of behavioural activation, learning about emotions, learning about core beliefs, thinking styles and negative thoughts, and the relationship between behaviours, thoughts and emotions
Supporter	The availability/presence of a supporter, contact with a supporter or reference to the provision of feedback, for example personalised feedback, advice/guidance, feeling listened to and encouraged
Core CBT activities	An instance where the client has reported the use of a CBT activity in the treatment programme, such as completing a TFB cycle, tracking and monitoring thoughts and mood, behavioural activation/experiments, journaling, challenging thoughts, goal setting
Mindfulness	Reference to mindfulness activities in the programme and particularly the practice of mindfulness activities
Programme accessibility & usability	Comments related to programme structure, layout or format. Includes accessing the programme and the provision of social interaction functions
Personal stories & examples	Reference to the personal stories and example provided within the programme

broken down into its component parts, making it much easier to analyse.

It was also helpful to read what kind of thoughts we can have, whether they are presumptuous thoughts, black and white way of thinking or over generalising. I like the saying that thoughts are just merely thoughts, they are not facts and this is something I need to remember

Engagement with the various core *CBT activities* in the intervention was identified as a helpful event. Activities included the following: using the TFB cycle ($n = 13$), challenging thoughts ($n = 9$), recognising emotions ($n = 2$), recognising triggers ($n = 7$), behavioural activation ($n = 17$), lifestyle charting ($n = 3$), goal setting ($n = 5$), journaling ($n = 9$), mood tracking/monitoring/recording ($n = 15$).

To just do something, not wait until you're motivated, it's hard at first but very rewarding when you finish it.

Table IV: Definitions of helpful impacts.

Impact of helpful events	Definition
Awareness and insight	The bringing into focus something previously unknown by the client and their recognition of that, or an event causing a reframing, a deeper recognition and understanding of something previously unknown to the client. Insight is characterised particularly, by a personal resonance that distinguishes it from awareness only
Applying new coping skills/behavioural change	Applying new skills or techniques learnt to successfully manage symptoms and improve mood/well-being. Includes the application of skills learned to life outside of the programme, resulting in positive behavioural changes for the client
Feeling supported/ validated	Outcomes of the clients being listened to, understood, acknowledged and/or validated. Includes outcomes of being encouraged, and/or advised by the supporter. May include a sense of reassurance that there is a supporter available to the client during the programme and may result in re-engagement with the programme
Self-efficacy/ empowerment/sense of achievement	A sense of progress or accomplishment that leads to some change in behaviour or thought. It includes a sense of being successful. May include feeling a renewed sense of self-belief that one can be the agent of one's own change and/or that one is capable of performing in certain ways to attain desired goals
Relief	Includes a sense of relief as a result of engaging with the programme
Improved well-being	A change in well-being including an improvement in mood, physical symptoms and lifestyle, for example sleep, diet, exercise
Connection	A client's ability to identify and relate to the personal stories and examples in the programme and as a consequence not feel alone with their difficulties

The mood monitor is helping me to focus on a healthy diet and good sleep hygiene and I notice I've been sleeping a lot better overall the last week or so.

A large number of participants identified the *supporter* as a helpful event. Participants reported that feedback in which they were encouraged or provided with advice or guidance was particularly helpful.

Feedback from my supporter was very positive and comments she made meant she took notice in what

Table V: Definitions of hindering events.

Hindering event	Definition
Lack of time	Where participants for one reason or another did not have the time to access the intervention, for example work and family commitments, being sick
Platform features/design	Relates to any comments made about any aspect of the programme and the form of its delivery, including the mode of delivery
Internal factors	An event which is internal to the client, such as psychological distress or symptoms, a lack of motivation or a sense of stigma, and which may prevent them from engaging fully with the programme
Content of programme	Relates to any comment made about any aspect of the programme's content that was difficult to use
Supporters' feedback	References to the problems in the content or adequacy of supporters' feedback

Table VI: Definition of hindering impacts.

Impact of hindering events	Definition
Confusion	Where the programme or some aspect of it has caused confusion for the client. It includes being left without a clear understanding of an element of the programme, or feeling confused in relation to navigating the programme
Frustration/irritation	Where the programme or some aspect of it has caused the client difficulties and consequently leaves them with a feeling of frustration or irritation
Mood deterioration	The client experiences a deterioration in mood related to engagement with the programme
Self-critical/blaming	Where the client is unhappy with their lack of engagement or utilisation of the programme, and consequently become critical of themselves. Includes perceptions of their own failures or inabilities or feelings of guilt
Disappointment	A sense where the client is left feeling upset or disappointed, includes disappointment in relation to supporters' feedback

I was saying and the work I've put in. It's nice to have that contact even though I'm only learning about the programme.

Mindfulness was frequently reported as a helpful event by participants, in helping them to connect with the present moment or in relaxation.

The Watching Thoughts mindfulness exercise had an immediate and powerful effect on my psychological state whenever I used it.

Some participants also commented on the helpfulness of the programme in terms of its *accessibility and usability*.

I really like the way the information in module 2 is layered on top of each other. Same information with a bit more added to it. It makes it all make sense.

The *personal stories and examples* used throughout the programme were identified as a helpful event for users.

One of the personal stories I read said exactly how I felt being around loved ones.

It was nice to read others' explanations of how CBT has helped them in their past experiences.

Helpful impacts

The most frequently reported helpful impacts were awareness and insight ($n = 82$) and applying new coping skills/behavioural change ($n = 50$). The next two impacts identified in the group were support and validation ($n = 28$) and self-efficacy/empowerment/sense of achievement ($n = 27$). Other impacts were identified including expression/relief ($n = 22$), improved well-being ($n = 15$) and connection ($n = 15$).

Awareness and insight were the most frequently reported helpful impacts of the *Space from Depression* programme. Participants felt that they became more aware of and better understood their depression and its contributing factors.

... it has helped me to become more aware of my beliefs about certain areas in life and that some of these negative beliefs can contribute towards depression.

I've noticed the really negative effects of some of my diet and how much it effects my mood.

Many participants reported that they had *applied new coping skills* to their daily lives or made a positive change to their behaviour as a result of completing the programme.

While I haven't always recorded my NATs when they arise, simply committing to that as a goal has made me more conscious of my thinking processes and how they might be helpful or unhelpful.

I'm keeping a journal now of my thought processes and writing down my hot thoughts and alternative thoughts.

Table VII: Instances of helpful events and helpful impacts.

Helpful events	iCBT <i>n</i> = 88		Helpful impacts	iCBT <i>n</i> = 88	
	No. of participants identifying each item	Number of counts of each item		No. of participants identifying each item	Number of counts of each item
Provision of information	88/88	113	Awareness and insight	82/88	136
Core CBT activities	81/88	90	Applying new coping skills/behavioural change	50/88	68
Supporter	72/88	92	Feeling supported/validated	28/88	36
Mindfulness	27/88	43	Self-Efficacy/empowerment/sense of achievement	27/88	31
Platform accessibility and usability	14/88	16	Relief	22/88	24
Personal stories & examples	10/88	11	Improved well-being	15/88	18
			Connection	15/88	19

Table VIII: Instances of hindering events and hindering impacts.

Hindering events	iCBT <i>n</i> = 88		Hindering impacts	iCBT <i>n</i> = 88	
	No. of participants identifying each item	Number of counts of each item		No. of participants identifying each item	Number of counts of each item
Time	19/88	19	Confusion	7/88	8
Platform features/design	12/88	17	Frustration/irritation	5/88	5
Internal factors	7/88	7	Mood deterioration	6/88	6
Content of the programme	8/88	9	Self-critical/blaming	4/88	6
Supporters' feedback	5/88	7	Disappointment	3/88	3

Participants reported impacts of feeling *supported or validated* while completing the programme. This feeling of support and validation may be a direct result of the inclusion and interaction with a supporter throughout the programme.

It's encouraging to get the supporter review letters. Have struggled with motivation and knowing that someone does follow my progress helps.

Getting feedback helped me engage with program more.

A frequently reported helpful impact was *self-efficacy/empowerment/sense of achievement*. The participants who identified this impact reported a sense of doing something positive for themselves that they were making progress or that they were capable of coping with difficult situations.

It just gave me the feeling that I'm doing something really positive and for the first time in a long time I'm feeling good about myself and life in general

I feel I am making progress and will be ok.

The impact of *relief* comes with the provision of a space to express self through journaling, and the

completion of activities in the programme. A sense of relief results from engaging with the programme.

... not really but after writing it all down I did feel a bit better and more hopeful about the future.

Improved well-being because of using the programme is a beneficial impact of note among participants.

The activity scheduling has continued to boost my mood.

I did feel a bit better and more hopeful about the future.

The final impact identified is personal *connection* as related to the personal stories and examples that the programme uses.

Reading the comments of others helped to put my own situation in context and help me realise that I am not alone in feeling this way.

Hindering events

In total, five hindering events were reported by participants in the study, and nine impacts were associated with these hindering events. The hindering

events and associated impacts are presented in Table VIII: the numbers correspond to the number of participants identifying each item and the number of counts of each of the qualitative items. The most frequently reported hindering events were lack of time ($n = 19$), followed by features/design associated with the platform ($n = 12$) and internal factors ($n = 7$). Other hindering events were content ($n = 7$) and supporter feedback ($n = 5$).

Of the five hindering events identified, the most frequently reported event was *time*. Twenty participants reported that sickness, lack of time due to family or other commitments, and technical problems with their Internet connection hindered their engagement with the programme.

... life stuff is time consuming and tiring so difficult to find time to do this.

A small number of participants also reported that the *programme features/design* could be hindering.

I found it a bit tricky to navigate the programme (see what to do first etc.) but am getting used to it.

A small number of participants reported that *internal factors* were experienced as hindering events for them in the treatment.

I thought i wanted to leave the programme after my first session because it made me feel scared and anxious about dealing with my problem.

Participants noted that in a minority of cases, the *content* could be hindering to their treatment.

This module was interesting to read. But I don't feel that it is really relevant to me.

The other hindering events that were noted included comments on the *supporters' feedback*, such as:

I feel my supporter might be too optimistic on how I am doing as I do not feel that way.

Hindering impacts

All in all, the identified hindering events and their impact were minimal, which is a positive for users of the platform and programme. Nevertheless, hindering impacts such as confusion ($n = 7$), frustration/irritation ($n = 5$), mood deterioration ($n = 6$) and self-criticism or blaming ($n = 4$), and disappointment ($n = 3$) did feature for some users.

The first of these was *confusion* and includes being left without a clear understanding of an element of

the programme, or feeling confused in relation to navigating the programme.

I would have liked a sample situation for the trigger cycle. I was a bit stumped with it to start off with and still don't know if I've done it right.

Some users experienced hindering aspects, causing *frustration and irritation*.

I find the website a little frustrating but am probably just getting used to it.

Other possible impacts would include where clients' *mood deteriorated*, or resulted in unhappiness with their use of the programme and a sense of failure or guilt, *self-criticism* and *disappointment*.

The hot thought process has concerned me. I seem to be dwelling on everything now. I'm feeling bit paranoid.

... activity scheduling it at specific times makes me feel more stressed, because it's adding to my list of things-to-do and I end up feeling guilty if I don't do it right on the dot.

Discussion

The current study sought to investigate what participants identified as helpful and hindering events in their Internet-delivered treatment for depression with support provided by trained volunteers. We found several impacts that are described in other studies (online and face-to-face CBT) including increasing awareness and insight, developing self-efficacy and feeling supported and validated to be present in the current sample (Richards & Timulak, 2012). Some of the hindering impacts observed are more closely aligned with what has been reported previously in online delivered interventions, including frustration and disappointment (Richards & Timulak, 2012).

Awareness and insight

The development of greater awareness and insight is congruent with the goals of therapy. It is encouraging to see how prevalent these impacts are noted in the current sample and are exactly what would be expected from in-session outcomes reported in face-to-face therapy (Timulak, 2010). Other studies have reported an increase in awareness and insight to be a significant event in therapy (Gershetski, Arnkoff, Glass & Elkin, 1996). It is likely that the development

of personal awareness and insight is one key step to initiate behavioural change (McConaughy, DiClemente, Prochaska & Velicer, 1989).

Behavioural change

The provision of psychoeducation throughout the modules and engagement with core CBT activities and skills learning have been identified as key components contributing to the success of the intervention, and likely influencing behavioural change in participants. Psychoeducation, including passive psychoeducation, has been demonstrated to have a positive effect on depressive symptoms and has been integrated into a number of psychotherapeutic interventions (Brown & Lewinsohn, 1984; Cuijpers, 1998; Cuijpers et al., 2009).

Based on our findings, it is also apparent that participants found it helpful to apply their learning both within the programme and externally in their day-to-day lives. Participants reported that using these skills enabled them to cope with difficult situations, change unhelpful behaviours, reflect, take perspective and gain an awareness, insight and understanding of their own situation. A key outcome from CBT therapy is to teach the necessary skills and strategies to help the person manage their emotions and thoughts and therefore live and feel better. The impact of learning new coping skills and their application is very welcome as an outcome from the treatment. What is also interesting is that both cognitive and behavioural CBT activities and skills were identified by participants, demonstrating the utility of both approaches to tackling low mood and depression. Therefore, CBT principles remain established and important, and support seems to have had a noteworthy impact, beyond and in addition to any established CBT techniques or strategies (cf. Richards, Timulak & Hevey, 2013).

Support and validation

Additional factors in the delivery of a treatment have been noted in the literature, among them the impact of the therapeutic alliance and the experience of being supported, validated, listened to and encouraged (Horvath & Bedi, 2002). The current study used lay volunteer supporters. It has been acknowledged in the literature that supported, Internet-delivered interventions do yield better outcomes (Baumeister, Reichler, Munzinger & Lin, 2014; Richards & Richardson, 2012), but the nature, type, duration of any support are still largely

unanswered as it seems that a variety of implementations of support can achieve the same outcomes (Richards & Richardson, 2012; Titov et al., 2009, 2010).

Findings suggest that the inclusion of human support is a critical component of online interventions for depression to optimise clinical outcomes, which is consistent with previous research (e.g. Gega et al., 2013). Participants in the study referred to 'human' support, and a sense that the feedback received throughout the programme was genuine and real. Interestingly, participants in this study referred to the helpfulness of a variety of aspects of their relationship with their supporter, namely personalised feedback, guidance or advice, support and reinforcement. This suggests that supporters may have tailored their role to the needs of participants from session to session; for example, a supporter may take an advisory role in suggesting or recommending appropriate exercises for a participant, while also taking a reinforcing role by highlighting participant's achievements for encouragement or motivational purposes.

The sense of being supported and validated also seems to be achieved through the use of personal stories throughout the intervention; an impact identified as '*connection*' in the current sample and reported elsewhere in studies of significant impacts in online interventions (Richards & Timulak, 2012). Where such a connection does not exist, it can lead to participants feeling unsupported and a lack of validation of their experience (Hind et al., 2009; Topolovec-Vranic et al., 2010). In summary, the findings presented here provide evidence for the role of a supporter in the development and implementation of tailored therapeutic interventions, improving adherence and increasing motivation among users of such interventions. Essentially, the inclusion of a supporter in online interventions may facilitate the transmission of certain aspects of face-to-face therapy to online interventions.

Self-efficacy

The experience of developing self-efficacy, and mastery over ones' problems, has been reported elsewhere as a significant therapeutic experience (Booth, Cushway & Newness, 1997; Elliott, 1985; Llewelyn, 1988; Llewelyn, Elliott, Shapiro, Hardy & Firth-Cozens, 1988; Martin & Stelmazonek, 1988). The sense of accomplishment from developing self-belief and feeling as the agent of one's own change cannot be overemphasised as a positive experience and a successful outcome from treatment. Building

awareness, and thereafter learning and developing skills and strategies to manage, can all contribute to an evolving sense of self as capable and efficacious.

Mindfulness

The *Space from Depression* programme also included a mindfulness component due to the growing body of research supporting its effectiveness in the treatment of depression, both as a stand-alone treatment and as an adjunct to usual treatment (Barnhofer et al., 2009; Coelho, Canter & Ernst, 2007; Desrosiers, Vine, Klemanski & Nolen-Hoeksema, 2013; Hofmann, Sawyer, Witt & Oh, 2010; van der Velden et al., 2015). The addition of a mindfulness component to CBT interventions and the delivery of mindfulness as a low-intensity self-help intervention have also produced positive treatment outcomes for depression (Cavanagh et al., 2013; Krusche, Cyhlarova & Williams, 2013). According to the literature, the purpose of mindfulness-based interventions is to facilitate awareness, compassion and the development of coping responses which are more flexible and adaptive (Edenfield & Saeed, 2012). Although the mindfulness component was not a core feature of the intervention, over 30% of participants identified the mindfulness exercises as being helpful.

Hindering impacts

In comparison with the benefits, the negative or hindering impacts are few, but still important to consider. Hindering events can cause ruptures in treatment and lead participants to disengage (Safran, Muran & Eubanks-Carter, 2011). There are occasions, and for different reasons, where participants can experience confusion or frustration or be disappointed with the intervention (Llewelyn, 1988; Timulak, 2010). Designers of Internet-delivered interventions need to be mindful of the user experience, considering technical issues, platform design and features, and content delivery. Involving domain experts, including subject matter experts, in the design of interventions potentially improves the intervention and its outcomes by pre-empting difficulties or challenges the user may encounter, and ensuring the programme is suitably tailored to minimise these difficulties.

Implications for Internet-delivered interventions

The research, using the significant events approach, has highlighted that CBT principles remain established and important in Internet-delivered

treatments. Furthermore, support seems to have a noteworthy impact, beyond and in addition to any established CBT techniques or strategies. This highlights the importance of using evidence-based CBT interventions that are theoretically robust and have demonstrated efficacy. This seems to be noteworthy in establishing the contributing factors to any theory of change in Internet-delivered intervention.

Further evidence from this sample highlights the importance of support accompanying self-administered interventions. There is, however, still further research to be done to examine the nature, type, duration and level of support types required to maximise Internet-delivered interventions. Understanding fully the potential of Internet-delivered interventions will necessitate a revisiting of the traditional role of the face-to-face therapist, or indeed the online therapist. This is a challenge for this field of work, but one that deserves further attention. A recent Delphi poll has predicted the use of a greater variety of support types in the future delivery of psychotherapies (Norcross, Pfund & Prochaska, 2013).

Evolving systems for the delivery of Internet-based treatment protocols are continually helping to tackle the issue of adherence; an issue that has plagued the historical success of some online and web-based interventions (Eysenbach, 2005). One aspect of this has been the tailoring of content through the development of relevant personal stories, examples and illustrations that facilitate a sense of connection and validation and do not alienate the user. A second aspect is the design and development of platforms and products. This raises the importance of ongoing evaluation and integration of feedback, a dynamic vs. a static platform to improve users' experience and maximise the potential of Internet-delivered treatments.

Limitations

As with most qualitative research, researcher bias can be an issue. However, in defence of our work, we employed new researchers to initially assess the data, establish the meaning units and categorise the data before other members of the team became involved. The sample for qualitative research can be seen as appropriate. However, only 30% of participants completed five or more HAT forms. Therefore, much of the data comes from the initial sessions and perhaps users' reasons for dropping out are not adequately captured in the data, especially if they dropped out for negative reasons. However, the

distribution of HAT questionnaires is reflective of participants' use of the intervention, which correlates to the outcomes in depression for the sample (cf. Richards et al., 2015a,b). The key point for future research would be to further examine the facilitative processes in Internet-delivered interventions, with a focus on the supporter.

Conclusion

The current study was part of a larger randomised controlled trial of an Internet-delivered intervention for the treatment of depression in a community sample, and for several reasons, the results are positive (Richards et al., 2015b, 2016). The use of the HAT measure allowed us to collect important data that gives us deeper insight and understanding of the important therapeutic processes that form the mechanics of an Internet-delivered treatment such as the one examined. These findings echo the results of an earlier study of significant events in online treatment by the research group (Richards & Timulak, 2012). There is significant overlap with previous studies in significant events research in face-to-face therapy (Timulak, 2007). Understanding more fully the experience of clients and what might be the routes towards treatment success, will hopefully allow us to develop more robust hypotheses of what might be the mechanisms for change in Internet-delivered interventions. Future research can help to build on current understandings and may direct the focus to the supporter, technical skills and competencies.

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