Service Providers' Perceptions on the Uptake of Computerised Cognitive Behavioural Therapy (CCBT)

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ABSTRACT

Studies suggest that Computerised Cognitive Behavioural Therapy (CCBT) is an effective self-help approach with or without therapist guidance for mild to moderate anxiety and depression. According to media reports, CCBT will be offered to patients across National Health Service (NHS) Scotland to save costs and as a solution to the long waiting lists for face-to-face therapy. However, the low adherence by patients to programmes of CCBT remains a concern. The attitudes and perceptions of practitioners toward CCBT may have an impact on the uptake and adherence. However, this has rarely been explored in previous research.

In-depth semi-structured interviews were carried out with service providers at different NHS organisations who were involved in both decision-making about the availability of CCBT and in providing support concerning its use. Interview data were analysed using Grounded Theory Methods.

The results confirmed that usability was not the only factor influencing the uptake of CCBT. One core category, "shaping behaviour" emerged from the interviews indicating that attitudes and perceptions of practitioners toward this intervention might have compromised the effective use of CCBT and its service delivery. Several elements of these attitudes were identified. Specifically, "shaping behaviour" related to issues surrounding challenging practices; increasing awareness and understanding; promoting and marketing; getting buy-in and increasing acceptance; and believing in technology and its effectiveness. These factors are all critical to the success and clinical impact of this type of intervention.

1. Introduction

In Britain, mental illness accounts for one third of all illness (Department of Health, 2007). Nearly one in six people experience depression (National Institute for Health

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and Clinical Excellence [NICE], 2009a). Depression and anxiety may follow a pattern of lifelong relapse and remission (NICE, 2011). Psychological treatments, such as one-to-one Cognitive Behavioural Therapy (CBT) or "talking therapies", are in high demand and the waiting list can range from six months to two years (Department of Health, 2007; Rethink, 2009). There are an inadequate number of therapists available to meet the demand and the cost can be very expensive (Layard, 2005; Holmes, March and Spence, 2009; Rethink, 2009).

To fill the gap created by the high demand and low supply for CBT services, the range of CBT self-help approaches is increasing, from self-help books (Martinez, Whitfield, Dafters and Williams, 2008) to self-help guided programmes that are delivered via technology-based interventions, and these have been used in healthcare settings. These technology-based interventions include the telephone, videoconferencing, the Internet, CDs, virtual reality (VR), and palm top computers (MacGregor, Hayward, Peck and Wilkes, 2009). Additionally, more advanced, positive and interactive technologies in the field of cyberpsychology are being implemented to improve psychological treatments and well-being, such as virtual applications (Riva, Banos, Botella, Wiederhold and Gaggioli, 2012; Serino et al., 2013; Riva 2005, 2009). Cybertherapy is another term for computer-aided psychotherapy in which computers are used to facilitate therapy. Cybertherapy also comprises various therapeutic applications of information technologies, such as e-therapy, virtual therapy, VR treatments, and others (Botella, Garcia-Palacios, Banos and Quero, 2009). E-therapy as defined by Botella et al. (2009) is a method of delivering mental health services online using emails, discussion lists, chats or audiovisual conferencing.

Moving onto a more advanced technology, VR integrates complex computer graphics and other sensory input and output devices to create a virtual world where a user is immersed in this environment as if it were real life; the session is normally assisted by a therapist (Peck, 2007). Usually, the user wears a head-mounted display that is equipped with an electromagnetic sensor (Rothbaum et al., 1995). Riva (2005) further clarified VR in the role of psychotherapy as "an advanced communication interface based on interactive 3D visualisation, able to collect and integrate different inputs and data sets in a single real-like experience" (p. 225). According to Botella et al. (2009), there have been a significant number of studies carried out previously to evaluate the effectiveness of virtual reality in delivering CBT, starting from use with phobias to the more recently developed VR treatment programmes for severe disorders (e.g., panic disorder, posttraumatic stress disorder, eating disorders, and pathological

bereavement). While these technologies are all aimed at enhancing psychotherapy delivery, the main focus of the present paper is on Computerised Cognitive Behavioural Therapy (CCBT).

The use of CCBT as an alternative delivery method to traditional face-to-face CBT is increasing within the United Kingdom (UK) in response to the high demand for CBT coupled with shortages of trained therapists. This is also part of the Stepped Care approach, which Kenicer, McCLay and Williams (2012) define as, "a flexible model of healthcare delivery in which patients can begin their treatment with a low intensity intervention requiring only limited practitioner support such as guided self-help" (p. 1).

CCBT usually refers to several methods of delivering CBT via an interactive computer interface (NICE, 2006). It can be delivered through a standalone computer in a health care setting, or through the internet, via smartphone, or the telephone using interactive voice response (IVR) systems (Kaltenthaler and Cavanagh, 2010). CCBT provides several advantages for the user, such as flexibility: users can access it at a time and place that is convenient for them and it also provides privacy (Green and Iverson, 2009). Moreover, CCBT or internet-based self-help programmes can be delivered with or without therapist guidance (Hoifodt et al., 2013).

Evidence from several meta-analyses, systematic reviews, randomised controlled studies, and other journal articles suggests that CCBT is a positive and effective treatment (Proudfoot, 2004; Kaltenthaler et al., 2006; Kaltenthaler, Parry, Beverley and Ferriter, 2008; Spek et al., 2007; Kaltenthaler and Cavanagh, 2010; Andrews, Cuijpers, Craske, McEvoy and Titov, 2010; Gerhards et al., 2010; Berger, Hammerli, Gubser, Andersson and Caspar, 2011; Lintvedt et al., 2013). However, Coull and Morris (2011) carried out a systematic review on thirteen studies, specifically on guided self-help with therapist input, and concluded that long-term follow-up effectiveness for this particular modality was still inconclusive.

CCBT has also been recommended by NICE to use in the National Health Service (NHS) Primary Care for management of mild to moderate anxiety and depression (NICE, 2006; 2009b) and as one option for low intensity interventions (Rhodes and Grant, 2012). Furthermore, "The Scotsman" newspaper announced in February 2012 that CCBT would be offered to patients across Scotland, as an alternative to face-to-face sessions with trained therapists, and as a solution to cut costs and waiting times (Scotsman.com, 2012). NHS 24 (operated in the UK by the National Health Service), a nurse-led 24 hour telephone service for public access to confidential health advice and information, was asked to support the business case for CCBT and to provide its

services in Scotland (NHS 24, 2010; EHealth INSIDER, 2012). However, low adherence to CCBT programmes remains a concern (Kaltenthaler et al., 2008; Waller and Gillbody, 2009; Cavanagh, 2010). This raises questions as to whether software usability influences the likelihood of clients persisting with therapy and completing the CCBT programme or whether other factors impact on the effectiveness of how it is used. Usability is defined in the field of Human-Computer Interaction[1] (which is based on the definition given by International Standards Organisation (ISO) standard 9241) as, "The effectiveness, efficiency and satisfaction with which specified users achieve specified goals in particular environments" (Dix, Finlay, Abowd and Beale, 2004, p. 277).

Existing studies have demonstrated that attitudes and perceptions of practitioners can be an important element in determining the effective use and/or non-use of CCBT (Fleming and Merry, 2013; Gun, Titov and Andrews, 2011; Stallard, Richardson and Velleman, 2010; MacLeod, Martinez and Williams, 2009). Whitfield and Williams (2004) conducted a survey to investigate the use of CCBT and they highlighted that only 2.4% of CBT therapists used it. Fleming and Merry (2013) investigated the youth work service provider's attitudes to CCBT and concluded that training and resources would be required in order for CCBT to be utilised. Gun et al. (2011) conducted an online survey to determine levels of acceptability of internet-based treatment programmes for anxiety and depression to health professionals and non-health professionals. The survey revealed there were no differences in the ratings between these two groups. Additionally, other researchers highlighted that clinicians' attitudes can be a determining factor toward technology integration (Richard and Gloster, 2006). Kavanagh and Deane (2010) also implied that acceptance of integration of low intensity intervention CBT can be increased if it is shown to be compatible with practitioners' existing attitudes and practices.

Furthermore, Human Computer interaction (HCI) studies have also identified that the acceptance of technology is one of the factors that can be affected by the perceptions of stakeholders within the socio-organisational context. The stakeholders as defined here are CCBT health care professionals, service providers, and practitioners involved in decision-making about the availability of CCBT from the implementation, promotion and delivery, to the provision of support for its use. One of the socio-organisational issues and software engineering requirements discussed by Dix et al. (2004) is the

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[1] Human-Computer Interaction (HCI) is a discipline concerned with the design, implementation, and evaluation of interactive computer systems in the context of the users' tasks and work.

stakeholder requirement. Dix at al. (2004) define stakeholders as "anyone who is affected by the success or failure of the system" (p. 458), and their needs can be both complex and conflicting. Stakeholder requirements have to be identified in the socio-organisational context. According to Dix et al. (2004), technology does not exist in a vacuum but has to be considered in the specific context in which it will be used. This specific context can be influenced by many factors and one such factor is the stakeholder, who will be affected by the introduction of a new system or technology.

It is essential to identify the needs of all stakeholders, including both users and others who would be affected directly or indirectly by the system within the context in which it will be used. However, the requirements captured in software engineering methodologies are often primarily focused on the functional requirements of the system and what it must be able to do, less so on non-functional human issues, such as usability and acceptability (Dix et al., 2004). Taking this into account with regard to CCBT service delivery, it is important therefore to understand the needs, concerns, and other factors that might have affected health care professionals and practitioners in promoting or advocating CCBT as a therapy of choice in order for CCBT to be successfully used. Practitioners (e.g., Clinical Psychologists, General Practitioners, and Mental Health Nurse Specialists) act as the gatekeepers in making CCBT available to patients. Since they will decide whether to refer patients into CCBT as part of a Stepped Care model, their attitudes and perceptions towards CCBT may have a direct impact on the uptake of CCBT and subsequent adherence rates by patients. However, this important factor is neglected in the literature to date.

We conducted a mixed method study, which examined usability of CCBT as a whole. One of the qualitative portions of this study aimed to explore whether factors other than usability might influence the effective use of CCBT. To this end, we gathered the perceptions of service providers who implement, manage, promote, and deliver CCBT services. We wished to explore their views concerning the acceptance of CCBT and potential influencing factors on CCBT service delivery. Findings from the qualitative portion of the overall study are presented here.

This paper is organised as follows. Section 2 describes the research methods. Section 3 illustrates the results, highlighting the core category and its subcategories identified from the data analysis. Section 4 discusses the findings. Section 5 emphasises the limitations of the study and concludes with future directions.

2. Methods

2.1 Sample

Nine service providers engaged in CCBT delivery (Psychologists, CCBT Project Coordinators and Managers, and Technical Specialists) from different organisational perspectives within NHS Scotland were interviewed. The respondents were five men and four women, whose ages ranged from 25 to 55 (average age 39), who were identified through psychological therapy services across NHS regions. While some of the senior managers were clinical practitioners, our interviews were not directed toward their clinical practices but toward their particular responsibilities for the deployment of CCBT in their regions.

2.2 Ethical Considerations

Ethical approval was obtained through the University of Edinburgh's School Research Ethics Committee. Before the interviews started, the respondents were briefed about the aims of the study and were also made aware that university research ethical approval had been granted. All respondents opted to take part in the study and gave their verbal consent to participate (as this was not a vulnerable population, there was no requirement to obtain written consent). The main ethical issues in the present study relate to protecting the identities of participants. To ensure anonymity and confidentiality of the respondents, all indicators of persons' names, NHS locations, as well as any other names or places mentioned in the transcripts were removed. Additional care was also taken to safeguard respondents' NHS professional positions so that they were not easily identifiable.

2.3 Procedure

The interviews were conducted by the main author. All interviews were recorded using a digital recorder and lasted from one to two hours. The interviews were transcribed verbatim and independently checked for accuracy.

Semi-structured interviews were conducted using the following guiding questions:

- How do you set up and deliver CCBT programmes to participants and how are participants referred into the programme?
- What do you think about the current service provided?
- What you think is working and what is not working and why?
- What are the challenges that relate to widening access?

- What are the percentages for completion, dropout and discharge rates?

- What do you think the reasons are for high dropout rates? Was there any follow-up on participants after they dropped out from the programme?

- What factors do you think may have influenced uptakes since there seemed to be high dropout and discharge rates?

- How does the dropout rate compare with that for other clinical situations you have worked with?

- Do you think that we got buy-in from psychologists in adopting CCBT? If not, how can this be overcome?

- What do you think about the current CCBT programme(s) or package(s) used?

- What types of technical issues have been reported by the participants? What kind of problems have you encountered?

- Do you think these self-guided programmes have influenced or impacted on participants' mood swings? If so, do you attribute this to the design of the application or to the materials presented and to which part/session in particular?

- In terms of improvement, is there any area that you think could be improved or better promoted? And why?

2.4 Data analysis

Data collection, field notes, and transcript analysis were carried out concurrently. The data were coded and analysed by the main author and were then reviewed by second and third authors for reliability and agreement on category content. For the current study, a Constructive Grounded Theory analytical approach (Charmaz, 2006) was used.

The coding procedure was comprised of two main phases: Initial and Focused coding. Each interview was initially coded line-by-line and incident-by-incident to identify processes and patterns of behaviours of respondents within the data. The data were coded as actions, as recommended by Charmaz, instead of themes or topics, by using words that reflect actions, such as "being different from other places", "feeling insecurity and fears", and "changing behaviour". Coding this way helps "to see actions in each segment of data rather than applying pre-existing categories to the data" (Charmaz, 2006, p. 47).

Next, focused coding was carried out. This involved sorting, synthesising, integrating, and organising the initial codes such that the most frequent and significant ones (those that made the most analytic sense in categorising the data) were selected. These

selective codes were finally grouped into core thematic categories with their own distinct properties. Constant comparison of data, codes, and categories from the different interviews for similarities and differences was undertaken throughout all coding stages to guide analytical decisions and to help to identify and refine the core category, which is discussed in this paper.

Reflective memos, a key component of Grounded Theory analysis, were also written throughout the analytical process by the main author and these guided the development and refining of categories. This involved recording thoughts, emergent ideas, questions, and interpretations about the codes and their relationships.

3. Results

The findings highlighted the factors that might have influenced the effective use of CCBT and its service delivery. The core category identified from the analysis was "shaping behaviour". This category will be discussed in relation to its subcategories and will be illustrated using extracts from the interviews of the respondents.

"Shaping behaviour" represents respondents' perceptions concerning the attitudes and acceptance toward CCBT by other practitioners who acted as the decision makers in giving users access to the service. Central to this were beliefs concerning practitioners' attitudes and behaviour toward change, and their insecurity and fears. Shaping behaviour was frequently mentioned by most respondents when describing the challenges in current practices and what approaches needed to be taken to change behaviour. This core category is comprised of five subcategories, which will be addressed in turn below.

3.1 Challenging practices

This subcategory highlighted some of the challenges in current practices that are associated with change, such as responding and adapting to CCBT as a new method of delivery compared to traditional face-to-face therapy. Most respondents believed that changing people's behaviour, especially changing people's minds towards doing something new or different, is never easy as practitioners become attached to what is familiar. It also takes time and effort for them to adjust and incorporate new ways into their usual practices:

". . . I mean even changing behaviour within this service is difficult, you know. Changing anyone's practice takes time." (ID 08)

". . . some areas that are quite partisan in the way that they kind of want to adhere to just the type of service that they provide." (ID 06)

As also stated by Kets de Vries, Ramo and Korotov (2009), changing mindsets is difficult to accomplish; a strong "jolt" is needed in order for people to realise the way they used to do things is no longer adequate. Similarly, one respondent pointed out that in some areas the local health boards might not want to consider an alternative treatment model unless they have massive waiting lists and could no longer cope with high demands:

". . . if a service is absolutely overloaded with massive waiting lists and individuals cannot cope with the demand that's been placed upon them. In such times they may be more willing to accept change or to accept any form of assistance that can help them manage their waiting lists." (ID 06)

According to Maltz (2008), resistance can be caused by unconsciously resisting the process of change. As mentioned by one respondent: "They don't want to necessarily consider any other alternative models. So all of the people, it's kind of human nature, they are kind of stuck in their way." (ID 06)

Some of the respondents also talked about insecurity and fears, which can elevate resistance to change: "I think it's fears, and you are kind of, you're reluctant to change; usually it is associated with insecurity and fear." (ID 06)

Furthermore, these respondents also pointed out that insecurity and fears are associated with lack of self-esteem and confidence. They felt that some practitioners were feeling undermined and threatened by the implementation of new technology. As a result, they think fewer jobs would be available and are fearful of being replaced by CCBT, especially if they are highly paid and skilled consultants. This would make it more challenging to manage change and, as highlighted by Maltz (2008), fear of loss with regard to job, position, status or expertise are at the heart of resistance to change:

"There is this idea that whenever you implement in an area, they always think it's going to replace jobs, is not designed to replace jobs, it's for a group of people that genuinely don't have access to certain degrees." (ID 04)

"Some clinicians are fearful . . . and some managers think that you can do away with direct face-to-face contact if you've got a programme or self-help literature or guidance self-help workers. You don't need as many individuals at the higher level." (ID 06)

In contrast, some respondents who used CCBT concurrently while seeing their patients on an individual basis did not feel undermined and threatened by it. They used it to save time and to cut down on the number of face-to-face therapy appointments: "I use it conjointly, if I am seeing someone." (ID 06)

Moreover, all respondents believed CCBT has succeeded in introducing CBT to patients and has eased the long waiting lists associated with traditional delivery of psychotherapy (Kaltenthaler et al., 2006, 2008).

3.2 Increasing awareness and understanding

It has been more than a decade since CCBT was first introduced (Griffiths, Farrer and Christensen, 2010; Foroushani, Schneider and Assareh, 2011; Gega, Marks and Mataix-Cols, 2004; Clarke et al., 2002), but it may still remain a mystery to some health care professionals and clinical practices. According to respondents, in some NHS regions in Scotland practitioners are ill-informed about CCBT interventions and have never used it as an intervention with their patients. However, this may not reflect a lack of interest on the part of the professional but could be due to a lack of awareness surrounding CCBT itself; it may not have been introduced or marketed in these regions or locations:

". . . not all General Practitioners know about Beating the Blues[2] you see, and not all General Practitioners feel confident to refer to Beating the Blues so they refer here even though they might say Beating the Blues, they might even use Beating the Blues in a referral but it's like you know they're maybe not confident . . . " (ID 08)

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[2] Beating the Blues: a Computerised Cognitive Behavioural Therapy programme for depression and anxiety.

"... as far as I am aware, they are not fully acknowledged about the options with Beating the Blues that are, sort of, out there." (ID 09)

Low confidence may also be associated with the lack of understanding and knowledge about CCBT. One respondent described how some General Practitioners sent referrals to the clinical team and asked them to refer patients into CCBT, even though they had the option of doing this directly at their local practice. However, several respondents further explained this might be because some General Practitioners were lacking confidence and/or were unsure if CCBT would be appropriate for the patients, and thus preferred to make the referral through a further expert practitioner.

In other locations, General Practitioners are much more aware of CCBT. They are even referring patients into CCBT directly without making referrals to traditional psychotherapy services in which the clinician's inputs would be required.

Moreover, some respondents also expressed that lack of awareness about CCBT might also play a role in practitioners' attitudes: "There is an attitude with it in relation to, you know the kind of protectionism of their own profession. A lot of times with psychologists not really understanding what CCBT is or what it could be in the future . . . " (ID 04)

To overcome fears and increase the acceptance of CCBT and its service delivery, the respondents felt that practitioners should be more aware of CCBT, what it actually is and what it is about: "Firstly, General Practitioners have to be more aware of it. Secondly, clinicians have got to be aware of it, because clinicians, I still think, feel undermined and threatened by it." (ID 06)

3.3 Promoting and marketing

According to most respondents, CCBT has been widely introduced and marketed successfully in some areas in Scotland. They therefore believed promoting and marketing CCBT is an important element in gaining positive responses and attitudes from practitioners towards it. Moreover, the respondents noted that this also helped to improve their own understanding and awareness of CCBT. In some NHS regions, a local champion[3] is selected to promote and market CCBT and also has the responsibility to increase its use as well as to change the behaviour of practitioners:

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[3] Champion: a clinical volunteer person, who shows enthusiasm, and is able to visit General Practitioners' practices and promote CCBT packages to a variety of different clinicians. The Champion also aims to encourage change in clinicians' behaviours.

"You need local champions, without any shadow of doubt. And local champions have got to get something out of being a local champion, for me the way of actually changing behaviour." (ID 06)

"You know the resistance can be overcome through clever marketing and genuine promotion, openness, you know showing people the programme, and understanding how it works, and addressing the issues that they have . . ." (ID 04)

"I would suggest that a really positive way of marketing would be to get into the General Practitioners' Surgeries and tell the General Practitioners, 'this is something that you can use, and this is something you can use successfully and you know, that it's found to be effective and it's a treatment option . . . '" (ID 08 who was also a local champion)

3.4 Getting buy-in and increasing acceptance

All respondents acknowledged that there are a range of different perspectives and individual differences with regards to CCBT and its acceptance. As one said, some NHS areas would embrace it while others may not want to consider it as an alternative model. These discrepancies between NHS areas may be attributed to several issues, such as resistance to change, insecurity and fears, lack of confidence in CCBT and its effectiveness versus traditional therapy, and/or financial constraints. Furthermore, it was suggested by most respondents that getting buy-in from local health board authorities and practitioners must be achieved in order to increase their acceptance of CCBT and its service delivery: "You've got to buy the clinician in, the clinician's got to think about Beating the Blues as a product, as an effective treatment option and I think that is, and that might be a sales task actually." (ID 07)

Additionally, in some areas, CCBT has also been introduced as part of a research innovation. This was suggested as another promotion option for getting buy-in and for increasing its acceptance, which has been proven to be successful:

"In other areas you may well introduce it as part of a research packet, or package, as we've done here XX. So there's different ways to get it into the system but it really depends on what the local pressures are." (ID 06)

". . . is to actually introduce a far more robust research base to service deliveries, in the way that we did years ago down in XX because I think research is one of the ways to introduce innovation." (ID 06)

3.5 Believing in technology and its effectiveness

Most respondents commented that practitioners still have some concerns and reservations about CCBT and its effectiveness. They felt that it might not deliver as effectively as face-to-face therapy. These concerns have also been acknowledged by other researchers (Whitfield and Williams, 2004; Learmonth, Trosh, Rai, Sewell and Cavanagh, 2008; Stallard et al., 2010; Rhodes and Grant, 2012), and further reassurance is also necessary to improve clinical outcomes for this intervention (MacLeod et al., 2009; Whitfield and Williams, 2004):

". . . they may actually just feel that, you know kind of it doesn't deliver exactly the same way that face-to-face therapy can delivery. So it lacks the kind of personal touch, so it's about the impersonal." (ID 06)

". . . we can all say it works but unless the General Practitioner thinks it's going to work for Mrs Smith, right there, he is not going to refer, and is this idea that we all talk about evidence based and not least addressing things but that means nothing to the General Practitioners, you know really, because it is how it is applicable to that person there." (ID 04)

". . . because the General Practitioners can be very harsh critics. If they have somebody going back to them and saying 'this is rubbish' then . . . they won't use it, they won't refer." (ID 02)

4. Discussion

It has been almost a decade since researchers described the drawbacks and implications of the lack of knowledge and training on the part of practitioners in the use of computer-mediated therapy. In addition, the lack of evidence at the time concerning its effectiveness has led them not to utilise, or minimise its use (Whitfield and Williams, 2004). Since then, the evidence base for CCBT has been expanding (Barazzone, Cavanagh and Richards, 2012). Studies have indicated that CCBT is an effective

treatment of common mental health problems (Kaltenthaler et al., 2006, 2008; Learmonth et al., 2008; Spek et al., 2007; Gellatly et al., 2007; Proudfoot, 2004; Andersson et al., 2005; Marks et al., 2003).

However, only a small body of recent research has examined the attitudes of clinicians towards internet-mediated and CCBT treatment (Fleming and Merry, 2013; Gun et al., 2011; Stallard et al., 2010; MacLeod et al., 2009). These studies identified factors that might have played a pivotal role in determining if CCBT programmes are used with patients (Stallard et al., 2010). Stallard et al. (2010) researched clinicians' attitudes toward CCBT with children and adolescents and demonstrated that clinicians still showed some concerns about the effectiveness of CCBT. One of the major concerns expressed about CCBT by the researchers was the lack of support from a therapeutic relationship and therapist contact. As highlighted by Rhodes and Grant (2012), this has triggered anxieties for clinicians. They were concerned that young people would not understand what CCBT programmes had to offer and therefore such interventions would not be suitable to meet individual needs (Stallard et al., 2010; Rhodes and Grant, 2012). Further results from Stallard et al. (2010) on the "potential use and effectiveness of CCBT" (p. 549) have highlighted that the majority of clinicians believed CCBT would have worse or much worse outcomes than face-to-face therapy. Although most respondents from their study responded they would possibly use CCBT with children and adolescents, the researchers were sceptical about these responses. They believed that this might not necessarily be reflected in actual practice. This has been given support by previous studies which showed that CCBT use was much lower than would have been expected given the positive attitudes reported by clinicians (Stallard et al., 2010).

Adding to the existing research, our findings provide further explanations for what may have influenced practitioners' attitudes and behaviour toward CCBT. Our analysis emphasised that attitudes and behaviour of practitioners might have been associated with their insecurity and fears about new approaches to treatment and the reluctance to change to a new implementation through technology. This may therefore have led to the lack of acceptance of CCBT and impacted on its service delivery, which could also influence the uptake and adherence rates of this intervention by patients. In addition, the lack of understanding and awareness of CCBT from practitioners has also raised further concerns about this intervention and its effectiveness. As mentioned by Stallard et al. (2010), the attitudes of practitioners may be an important factor in determining whether CCBT would be provided to the users. Rhodes and Grant (2012) also added

that professionals with positive attitudes about self-help options could highly influence patients in their uptake of interventions. The practitioners, as drawing from the HCI socio-organisational context, are the stakeholders who can significantly influence and determine the success and/or failure of the technology. As a result, if the technology is not usable or is not used effectively, this will also affect and impact greatly on usability. To address these challenges and in order to gain higher acceptance of CCBT and its uses, our findings confirm that changing and/or shaping behaviour of practitioners toward accepting change is important. This could be achieved through effective marketing, openness, and genuine promotion of this technology intervention. This would involve reaching out, becoming more involved, and demonstrating CCBT to practitioners to help to accelerate their understanding and awareness of this intervention and also to reassure them of its effectiveness. In addition, getting buy-in and increasing acceptance from practitioners are also important, as this would increase CCBT service delivery. To conclude, the effective use and/or non-use of this CCBT intervention will depend on how it is promoted, implemented, and delivered to the end users. Practitioners, or anyone who is involved or has participated in these processes, are the stakeholders who will determine the success or the failure and usability of this intervention.

5. Limitations

Although adequate for qualitative analysis, the sample size of the study is small and it cannot be assumed that these results would generalise across a wider population. However, the results are of interest and suggest that attitudes and perceptions of gatekeepers toward CCBT are crucial to the success and clinical impact of the intervention when used by patients. Future research could expand this further by studying a larger population, including different groups of stakeholders and focusing in particular on the views of General Practitioners on CCBT.

6. Conclusions

The findings of this study have presented some important factors that might have influenced the use and effectiveness of CCBT. Health care professionals, policy makers, and the stakeholders will have a clearer picture on decision-making,

promoting, and delivering CCBT services more effectively and on increasing its use and acceptance in current practice.

Further research is necessary, particularly in looking directly at practitioners' attitudes and behaviour and at how to gain their confidence and increase the acceptance rate of CCBT usage. Additionally, the way in which CCBT is implemented and delivered in different NHS organisations is also an important consideration.

7. Acknowledgements

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