Internet Interventions 12 (2018) 165–175

Contents lists available at ScienceDirect

Internet Interventions

journal homepage: www.elsevier.com/locate/invent

Patient's experience with blended video- and internet based cognitive behavioural therapy service in routine care

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ARTICLE INFO

Keywords:
Blended therapy
Patient's experience
Depression
Routine care
Video-based psychotherapy
Internet-based self-help

ABSTRACT

Introduction: Internet-based guided self-help and face-to-face CBT have shown to be effective in the treatment of depression, but both approaches might not be an available treatment option for all patients. A treatment which blends internet-based guided self-help with video-based psychotherapy might reduce potential disadvantages of both approaches, while maintaining major advantages such as being location-independent. Additionally, it could provide a stronger focus on patient empowerment and lower resource use compared to traditional face-to-face treatment.

Aim: The aim of this study is to evaluate patient's experiences with blended internet- and video-based CBT (blended iCBT) treatment and to derive suggestions for the improvement of such services.

Methods: Semi-structured interviews were conducted with 15 participants of the blended iCBT treatment as part of the European MasterMind trial. Participants included adults suffering from Major Depressive Disorder. The interview guide assessed patient's experiences regarding the four treatment components program, 1. face-to-face diagnostic interviews, 2. video-based synchronous therapy sessions (VTS), 3. online self-help treatment modules (OTM) as well as 4. behaviour diaries and symptom monitoring. Interviews were analyzed using the framework method and outcomes regarding connections within and between participants and categories were generated by counting the statements within relevant themes.

Results: Overall, patients indicated to have been satisfied with all components of the treatment, highlighting the option to independently work from home in their own pace. While the OTMs allowed for a deeper reflection of the content, the VTS with the therapist were mentioned to provide the personal character of the service. The working alliance with the therapist was experienced as fostering the individual fit of the treatment. Patients reported a high self-perceived treatment effectiveness. Negative effects included that some patients felt overwhelmed by the service, e.g. by working with the content of the OTM as they forced them to address their problems. Within the combination of OTM and VTS, both components were rated as equally important and patients felt that the combination depicted a treatment at least equal to regular face-to-face treatment regarding the perceived effectiveness. Other identified themes included patient's individual factors, reactions in their social environment and suggestions for improvement of the service.

Discussion: Predominantly, patients reported positive experiences with the blended iCBT service and rate the treatment as adequate and effective to treat their condition. The importance of the VTS is highlighted. Following this approach might be an option to make affordable and effective evidence-based CBT available independent from regional barriers.

1. Introduction

Despite the proven effectiveness of psychotherapy in the treatment of depression, the provision of evidence-based treatments depicts a constant challenge given barriers such as the shortage, uneven distribution of trained providers, delayed treatment provision and inadequacy of treatment (Kessler et al., 2001; Mack et al., 2014; Wang et al., 2007; Wittchen et al., 2011).

Using the internet to provide guided self-help interventions may help overcome some of the limitations of traditional treatment services (Andersson, 2009; Ebert et al., 2017c). Such approaches (a) provide high accessibility at any time and place, (b) may attract people who do not make use of traditional mental health services, and (c) are easily scalable. Recent research suggests internet-based CBT (iCBT) to be

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https://doi.org/10.1016/j.invent.2018.01.003
Received 7 August 2017; Received in revised form 1 December 2017; Accepted 8 January 2018
Available online 23 February 2018

effective for the prevention (Ebert et al., 2017b; Sander et al., 2016) and treatment of a wide variety of mental health conditions (Andrews et al., 2010; Hedman et al., 2012; Königbauer et al., 2017; Richards and Richardson, 2012; Zachariae et al., 2015) as well as the maintenance of treatment effects (Ebert et al., 2013; Holländare et al., 2011). Studies were also able to show comparable effects to face-to-face treatments in adults (Andersson et al., 2016, 2014; Olthuis et al., 2015).

However, internet- and mobile based interventions (IMIs) with a strong focus on self-help might not be an attractive treatment option for all patients (Apolinário-Hagen et al., 2017; Baumeister et al., 2014; Ebert et al., 2015; Musiat et al., 2014). Moreover, patient's adherence to the treatment constitutes a challenge to some patients, especially in pure self-guided treatment, while for other patients the transfer of what they have learned can be low in these interventions (Gerhards et al., 2011; Sharry et al., 2013).

Telephone- and video-based treatments have also been proven to be an effective medium in the delivery of psychological care (Mohr et al., 2008, 2005; Osenbach et al., 2013; Simpson, 2009), and being acceptable to patients (Richardson et al., 2009). While the combination still requires professionals to administer the services (Mohr et al., 2013), there is no necessity for patient and practitioner to be in the same place thus providing the option to overcome the obstacles of regional barriers, delayed treatment provision and inadequacy of treatment. However, telephone- and video-based treatments (Gros et al., 2013; Kotb et al., 2015; Shore, 2013) do require a comparable amount of human resources of trained clinicians. Additionally, they entail disadvantages such as the limitation of material use such as worksheets and other therapeutic material.

The concept of blending face-to-face and iCBT components into an integrated depression treatment has been discussed as an innovative way to overcome obstacles of stand-alone IMIs (Erbe et al., 2017; Kooistra et al., 2014; van der Vaart et al., 2014), especially in the treatment of more severely depressed patients (de Graaf et al., 2009; Richards and Timulak, 2012), but conclusive results of the efficacy and (cost-)effectiveness of these treatments are still pending.

Combining telephone- and video-based interventions in the treatment of psychological disorders with IMIs may increase the utilisation of treatments as well as adherence to treatment by reducing logistical disadvantages such as travel time and cost and allowing practitioners to monitor symptoms more effectively and provide for closer treatment intervals if needed (Pruitt et al., 2014). Moreover, patient's satisfaction could be increased by these factors (Richardson et al., 2009) and such services may help to reduce drop-out (Lovell et al., 2006; Mohr et al., 2008) and increase patients autonomy in dealing with their mental health (Samoocha et al., 2010), Furthermore, combining telephone- and video-based interventions with IMIs may also help to overcome some patient's concerns about privacy and stigmatisation associated with seeking care in a local facility (Pruitt et al., 2014). Lastly, such services could lower associated resource use, although there is yet no evidence supporting such an assumption.

As part of the European “MasterMind” trial (Vis et al., 2015), the aim of this study is to evaluate patient's experiences of a new blended iCBT service under routine care conditions and based on this to derive suggestions for the improvement of the service. Patient's experience with the implemented iCBT service is considered to be an important factor for the evaluation of the implementation of a telemedical service (Kidholm et al., 2012) and there is an additional value of qualitative research in evaluating trial processes (Donovan, 2002; Oakley et al., 2006). Using qualitative methods can be helpful in investigating potential benefits and disadvantages of the treatment and foster the understanding of mechanisms of change during the treatment (Andersson et al., 2009; Bendelin et al., 2011; Khan et al., 2007). Additionally, recommendations for the further optimization of the treatment can be derived. To our knowledge, no study has to date investigated the patient's experience with a blended internet- and video-based iCBT (blended iCBT) service.

2. Methods

2.1. Participants

The current study was part of an evaluation of the implementation of a newly developed blended iCBT treatment for depression (“Depression Online”) in routine care practice. For the overall study, inclusion criteria comprised the presence of any form of Major Depressive Disorder assessed by semi-structured standardized interviews (SCID; First et al., 2002), not having any other primary psychiatric condition being the primary treatment reason (e.g. eating disorder being in the fore), suffering from psychotic symptoms, acute or chronic suicidality or not having stable and private internet access. In addition, the participants had to be insured with a specific public health insurance company or self-paying and patients could not participate in another psychological treatment when starting the blended iCBT treatment. Patients were recruited for the service by informational letters send out by the health insurance company to selected clients known to be suffering from depression, being without psychological treatment and reporting a significant number of sick days with a focus on clients living in rural areas.

In total, 25 patients were deemed eligible for the inclusion to the interviews, of which one was excluded due her therapist's concerns as the patient was too burdened by his depressive symptoms to participate. Patients were contacted via the program integrated messaging system if they had completed more than six video-based therapy sessions with a therapist. We received informed consent to participate in the study by 15 of the remaining 24 patients and included all of them. A weighting of participants by qualitatively measured perceived satisfaction (CSQ8; Boß et al., 2016; Larsen et al., 1979), as initially intended was not possible, as CSQ8 values were very high (95% of overall agreement). Study participants did not differ from those patients that did not react on the invitation to take part in the study regarding symptom severity (measured with the QIDS; Rush et al., 2003), perceived satisfaction with the program (CSQ8) and working alliance (WAI; Bordin, 1979; Busseri and Tyler, 2003; Fuertes et al., 2007; Hatcher and Gillaspy, 2006; Horvath and Greenberg, 1989; Horvath and Symonds, 1991).

2.2. Treatment

The blended video- and internet-based intervention is based on principles in CBT. The treatment consisted out of four core components, 1) a face-to-face diagnostic interview 2) video-based synchronous therapy sessions (VTS) 3) online self-help treatment modules (OTM) 4) online and smartphone based monitoring of behaviour and symptoms (BSM). The face-to-face diagnostic interview took place in one of three clinics across Germany. This was necessary, as it is mandatory by German professional regulations for psychotherapists and psychiatrists, that mental health diagnoses are established face-to-face. A SCID interview (First et al., 2002; Wittchen et al., 1997) was conducted by an experienced diagnostician and was scheduled to take 100 min. Also, general information about the service were provided and the decision about the patient's fit to the program was communicated. Afterwards, an introduction to the online platform and the use of the video-conferencing tool was offered by an IT specialist. Subsequently, the patient participated in the intervention from his or her home. Synchronous psychotherapy sessions were conducted via video-conferencing between the patient and his or her therapist. The VTS were structured equal to CBT outpatient psychotherapy in Germany with a maximum number of 25 sessions of 50 min duration. Sessions were planned on a weekly basis, and on rare occasions twice a week when indicated. Therapists were provided with a “library” of OTM on the platform based on modules of the Get.On interventions, which have been adapted to various target groups and evaluated in several randomized controlled trials in various samples (Buntrock et al., 2017, 2016, 2015,

Table 1
Therapeutic content.

Patient	2	4	5	9	10	12	19	23	45	46	48	33	36	62	42	Total
Therapy start	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	15
Therapy goals	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	15
Psychoeducation (depression)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	15
Activity modules	x	x	x	x	x	x	–	–	–	–	–	–	x	–	–	7
Diaries																
Week plan	x	–	x	x	–	–	–	x	–	–	–	–	–	–	–	4
Mood	x	x	–	–	x	–	–	x	–	–	–	–	x	–	x	6
Activity	x	–	x	x	–	–	–	–	x	–	–	–	x	–	–	5
Depression	x	–	–	–	x	–	–	–	–	–	–	–	–	–	–	2
Emotion	–	x	–	–	–	–	–	–	–	–	–	–	–	–	x	2
Continuous self-care	–	–	–	–	–	–	–	x	–	–	–	–	–	–	x	2
Cognitive restructuring	–	x	–	–	–	x	x	–	–	–	–	x	x	–	–	5
Emotion	–	–	–	–	–	–	x	–	–	–	–	–	–	–		1
Other																
Taking a summary	x	x	x	x	–	–	–	x	–	–	–	–	–	–	–	5
Better sleep	–	–	–	x	x	–	x	–	–	x	–	–	–	–	–	4
Emergency plan	–	–	x	x	–	–	–	x	–	–	–	–	–	–	–	3
Relapse prevention																
My strategies	–	–	x	x	–	x	–	x	–	–	–	–	–	–	–	4
What helped me so far?	x	–	x	x	–	–	–	x	–	–	–	–	–	–	–	4
My early risk symptoms	x	–	x	x	x	x	–	x	–	–	–	–	–	–	x	7
Continuous self-care	–	–	x	x	x	x	–	x	–	–	–	–	–	–	–	5
Overcoming risk-situations	x	–	x	x	x	x	x	x	x	x	x	x	x	x	x	14
Total number of treatment modules	12	8	13	14	10	9	7	13	5	5	4	5	8	4	8	125

Note. Number of treatments completed by each patient. A treatment can consist of a number of modules compiled individually for the specific patient by his/her therapist.

2014; Ebert et al., 2017a, 2017c, 2014; Lin et al., 2017; Nobis et al., 2015; Reins et al., 2013; Sander et al., 2017). OTM were clustered in blocks consisting each of several individual lessons regarding specific therapeutic phases such as psychoeducation, goal setting, behavioural activation, cognitive restructuring and relapse prevention. The therapeutic process was tailored individually to each patient, the therapist decided which content to use based on the patient's individual needs and they were free to administer the OTM to work on during a session (often using a shared screen) or as homework. Which treatments the therapists administered to the patients of the present study is depicted in Table 1. Additionally, patient's symptoms were monitored weekly online with the PHQ9 (Erbe et al., 2016; Spitzer, 1999) and the results were used within the VTS to discuss progress. Furthermore, patients were provided with the option to use online and mobile diaries and planning functions. There was a 24/7 emergency hotline for the participants, mainly for acute suicidality, provided by the clinic.

2.3. Procedure

Data on patient's experiences with the treatment were collected through semi-structured interviews comprising of open-ended questions. Patient's experiences were evaluated separately for the four treatment components program, face-to-face diagnostic interviews, the VTS, the OTM as well as BSM. The questions were based on the acceptance model by Degenhardt (Degenhardt, 1986). Degenhardt postulates the dependence of the individually perceived acceptance of a service from the perceived usefulness influenced by the system configuration (defined as the components of a communication system), task characteristics (and individual user factors. The perceived usefulness is assumed to lead – moderated by the perceived acceptability – to the acceptance of a treatment. Here, perceived usefulness is regarded a prerequisite for the user's behaviour. The actual usage is determined by the perceived acceptability of the service.

The final interview guide consisted of 29 questions (see Supplementary online table 1), measuring patient's experience with the different components of the program (1. face-to-face diagnostic interview; 2. VTS; 3. OTM; 4. BSM). 14 semi-structured interviews were conducted by the same study admin, the first by the first author. The interviews were conducted by telephone and recorded. 25 patients were approached by the research team, of which 60% agreed, 40% did not react on the invitation or refused. Sociodemographic characteristics of responders and non-responders can be found in Table 2. Participants who agreed did not differ substantially from patients who did not agree to participate.

2.4. Analysis

The analysis was based the *Framework Method* (Ritchie et al., 2003), a tool for the management and thematic analysis of semi-structured transcripts (Gale et al., 2013). The approach aims to identify commonalities and differences in qualitative data and focuses on relationships between different parts of the data and drawing descriptive and/or explanatory conclusions clustered around themes. Audio recordings of the interviews were transcribed word-by-word, and subsequently, the interviews were read line by line by two independent researchers and paraphrases were used as open codes depicting patient's relevant statements. Following a thematic analysis approach, statements were clustered into themes. After the first three interviews, the results were interpreted and discussed by the research group. Then, the A*nalytical Framework* was developed as a reference frame for further analysis consisting of a selection of relevant codes and then being used for the coding of the remaining interviews. Results were compiled in a matrix and outcomes regarding connections within and between participants and categories were generated.

3. Results

Baseline socio-demographic and clinical characteristics of the participants are presented in Table 2.

On average, patients were suffering from moderate depressive symptoms. The results of the Working Alliance Questionnaire (WAI) suggested that creating an emotional bond between therapist and patient and that the agreement on common therapy goals and task were possible via the medium of videoconferencing. Most patients reported, according to the CSQ8, to be highly satisfied with the components of the service and rated the system usability as high.

The thematic analysis of the participant's responses yielded seven themes, which will be elaborated on in the following. All rated concepts

Table 2
Patient's characteristics.

	Sample characteristics		
	Full sample (n = 25)	Responders (n = 15)	Non-responders (n = 10)
Gender: n (% female)	18 (72%)	9 (60%)	9 (90%)
Age	55,24 (24–64)	58,94 (53–64)	49,7 (24–63)
Educational level			
Primary	3 (12%)	2 (13,3%)	1 (10%)
Secondary	18 (72%)	11 (73,3%)	7 (70%)
Higher/university	4 (16%)	2 (13,3%)	2 (20%)
Employment status			
Employed	19 (76%)	11 (73,3%)	8 (80%)
Medication	7 (28%)	4 (26,7%)	1 (10%)
Duration of depression (self-report)			
Less than 4 weeks	1 (4%)	1 (4%)	–
Between 4 and 8 weeks	1 (4%)	1 (4%)	–
Between 8 and 12 weeks	1 (4%)	–	1 (10%)
Between 3 and 6 months	5 (20%)	1 (4%)	4 (40%)
Between 6 months to a year	8 (32%)	5 (33%)	3 (30%)
Between 1 year and 3 years	6 (24%)	4 (27%)	2 (20%)
3 to 5 years	1 (4%)	1 (4%)	–
5 to 10 years	1 (4%)	1 (4%)	–
QIDS Sum Baseline	14,8 (SD 4,2, range 8–24)	14,8 (SD 4,4, range 8–24)	14,8 (SD 4,2, range 9–24)
Number of sessions completed	21,96 (SD 5, range 13–31)	20,8 (SD 5,5 range 13–31)	23,9 (SD 3,6 range 19–30)
Number of modules completed	–	8,33 (SD 3,5, range 4–14)	
Treatment history: experience with traditional psychotherapy (% yes)	–	9 (60%)	–
Age of onset	41 (SD 17, range 15–62)	45 (SD 16, range 16–62)	35 (SD 17, range 15–61)
Comorbid diagnoses	9 (36%)	4 (26%)	5 (50%)
	Additional sample information (mid-treatment)		
	Full sample (n = 23)	Responders (n = 14)	Non-responders (n = 9)
CSQ	3,6 (SD = 0,38)	3,79 (SD = 0,23)	3,39 (SD = 0,39)
WAI_Mean	4,19 (SD = 0,56)	4,42 (SD = 0,45)	3,84 (SD = 0,54)
WAI_Goals	4,33 (SD = 0,55)	4,53 (SD = 0,46)	4,00 (SD = 0,53)
WAI_Tasks	4,08 (SD = 0,60)	4,43 (SD = 0,33)	3,56 (SD = 0,53)
WAI_Bond	4,17 (SD = 0,76)	4,30 (SD = 0,83)	3,98 (SD = 0,62)
SUS	76,3 (SD = 13,94)	82,68 (SD = 0,48)	66,39 (SD = 13,26)

that were mentioned by at least three patients (20% of the sample) are depicted in the Tables 3 to 6.

3.1. Overall feedback to the components of the iCBT service and perceived usefulness

Overall, the majority of patients was satisfied with the treatment (87%, n = 13), describing it as a positive experience and they felt that the concept was not missing anything. 87% of participants rated the service overall as useful (n = 13). All patients highlighted the therapeutic guidance of the service as particular positive. Patients directly stated that they would recommend the program (40%, n = 6) and indicated that they would participate again (20%, n = 3). 60% of patients particularly liked working from home (n = 9) and were content about not having to travel to therapy (67%, n = 10). Other emerged topics included the fact that the iCBT offer was the only treatment option they had now (60%, n = 9), that the service provided immediate help to them (33%, n = 5) and its individuality (27%, n = 4) and flexibility (20%, n = 3).

"I had positive experiences with the program, yes. I would do it again anytime. If I experienced a relapse, I would choose an online program again." (05)

27% of participants mentioned technical difficulties as a negative aspect of the service (n = 4) and complained about a change in personnel during the treatment (20%, n = 3). In 67% cases in which both, technical difficulties as well as a change in the therapists occurred at the same time (20%, n = 3), patients dropped out of treatment (04, 46), even though the service components itself were still rated as "potentially positive" (04).

Furthermore, patients mentioned as a possible disadvantage the distance created by the videoconference (27%, n = 4), evoked by the fact that the two parties were not in the same room which was limiting the site of the body, body-language and eye-contact (33), causing a coldness in the treatment atmosphere (9), and a possibly reduced transportation of emotions generated within the session (12). Partially, these statements were considered from patients as a disadvantage for the therapists work and not for the patient's experience. Patients positive and negative overall treatment feedback can be found in Table 3.

"One disadvantage for the therapist's work is that his view to my body-language is limited. This must be communicated verbally and direct. I think in a face-to-face setting, more emotions can be transported […] this might make the therapist's work harder."

3.1.1. The face-to-face diagnostic interviews and platform introduction

80% of patients stated that the on-site appointment at the clinic was a positive component of the service (n = 12), that the procedures were running smoothly (27%, n = 4) and that they felt taken seriously by the diagnostician (27%, n = 4). Participants felt that they received diagnostic clarity about their condition (27%, n = 4) and the session allowed them and the provider to make an informed decision about the fit to the program (27%, n = 4). 20% marked the diagnostic interviews also as burdening and intense (20%, n = 3).

"During the diagnostic discussion, the patient finds out what could be wrong with him. The diagnosis did not really worry me, it is good to finally know what is going on." (05)

54% of patients mentioned that the platform introduction session provided sufficient technical support (n = 8), while others found that they lacked preceding information (n = 3, 20%), like the option to bring their own laptop.

3.1.2. The online treatment modules (OTM)

93% of patients mentioned the online treatment modules (OTM)

Table 3
Patient's overall feedback to service components. Identified concepts, number of patients providing information and percentage of total sample.

	Overall feedback			Face-to-face intake session			Online treatment modules (OTM)			Video-based treatment session (VTS)		
	Concepts	Patients		Concepts	Patients		Concepts	Patients		Concepts	Patients	
		N	%		N	%		N	%		N	%
Positive	Therapeutic guidance is mentioned as a positive aspect of the service	15	100	The face-to-face intake session are mentioned as a specifically positive component of the service	12	80	The therapeutic OTMs are mentioned as a positive aspect of the service	14	93	The VTS is mentioned as a positive aspect of the service	12	80
	The overall service is described as positive and there is nothing missing to it	13	87	The platform session provided sufficient technical support	8	53	The constant availability of OTMs is mentioned positively	7	47	Patients regard the possibility to ask questions during the VTS session positively	9	60
	The patient perceived it as positive that he/she does not have to travel to receive therapy	10	67	Patients perceive the procedures at the intake sessions as running smoothly	4	27	The OTMs allow for a reflection of my situation	7	47	Patients found the image transmission of the VTS positive	9	60
	Participating in the service was the only treatment option available at the moment	9	60	Patients feel taken serious during the intake session	4	27	The OTMs allow the patient to working in his/her own pace	5	33	Patients mentioned the personal contact and closeness to therapist positively	6	40
	The patient perceives the option to work from home as positive	9	60	Patients feel that the diagnostic session helped assessing the fit to the treatment	4	27	The OTMs provide a sufficient amount of information on depression (psychoeducation)	5	33	Patients mentioned the possibility to asking about problems and receive support as positive	5	33
	The patient would recommend the service	6	40	Patients feel that the diagnostic interview brought diagnostic clarity	4	27	The OTMs are tailored to my individual needs	3	20	Patients mentioned the flexibility and individuality of the VTS positively	4	27
Positive	The service allows the patient to receive immediate help without waiting times	5	33	Patients perceive the intake session to be personal	3	20	The OTMs consolidated what I discussed with my therapist	3	20	Patient states that a working alliance via VTS is possible	10	67
	The overall service is described as an individual approach	4	27	Patients consider the personnel involved in the intake session as competent	3	20				Patient mentions receiving technical support by therapist as positive	3	20
	The patients state that he/she would participate in the service again	3	20	Patients describe the intake session as intense	3	20				Patient perceives his/her therapist as empathetic	5	33
	The clearness of the overall concept is mentioned positively	3	20	Patients describe the platform information sessions as easy to understand	3	20				Patient perceives his/her therapist as competent	3	20
	The flexibility of the overall service is mentioned positively	3	20							Patient perceives his/her therapist as helping and supportive	3	20
Negative	The patient describes technical difficulties regarding the overall service as a negative service aspect	4	27	Patients feel that they lacked preceding information to the intake session	3	20	Patients described a lack of motivation to work with the OTMs and procrastinated the task	3	20	Patients mentioned the time limitation and short duration of the VTS session as negative	3	20
	The patient mentions the (emotional) distance created by the use of VTS as negative	4	27				Patients got frustrated if they lost their data while working on a OTM	3	20			
	The patient mentions a change in therapeutic personnel as a negative aspect	3	20				Patients found the OTM's content incomprehensive	3	20			

Table 4
Patient's perceived usefulness and system usability. Identified concepts, number of patients providing information and percentage of total sample.

Perceived usefulness			Program usability			Usability - OTMs			Usability - VTS		
Concepts	Patients		Concepts	Patients		Concepts	Patients		Concepts	Patients	
	N	%		N	%		N	%		N	%
The overall concept is described as useful	13	87	The overall concept is mentioned as easy to use	14	93	Patients perceived the OTMs as well structured	8	53	Patients stated that they had not encountered any problems with the tool	11	73
The OTMs are described as useful	11	73	The program menu is easy to use	5	33	Patients perceived the OTMs as well easy to use and understand	7	47	Patients perceived the VTS tool as well easy to use	4	27
The VTS are described as useful	10	67	The patient states that the program set up is clear to him/her	4	27						
The VTS is described as being personal	7	47	The patient mentions the design and layout positively	2	13						
The diagnostic interview is described as useful	6	40									
The depression related information is described as useful	5	33									
The possibility of (re-) engagement with the content is described as useful	4	27									
Monitoring	4	27									
Being able to see the therapist via VTS is described as useful	3	20									
Having a competence of interlocutor in the videoconference session is described as useful	3	20									
Platform information session is described as useful	3	20									

positively (n = 14) and considered them useful (73%, n = 11), highlighting the constant availability (47%, n = 7) and the option for a deeper reflection (47%, n = 7), a (re-)engagement with the underlying problems (27%, n = 4) and a consolidation (20%, n = 3) of the therapeutic content. Patients liked to work in their own pace (33%, n = 5) and mentioned the individual fit of the content positively (20%, n = 3). Further, the use of the OTM as "homework" (02, 09), the motivational character of the modules (45, 46) as well as the concrete questions (62, 42) and thought-provoking impulses (19, 45) were mentioned as useful.

"It is important to concentrate on certain things, to be confronted with issues and that is what the online modules do." (04)

However, 20% of the participants indicated that they were often little motivated to work with the OTM (n = 3) and that they got frustrated if they lost their data while working on the platform (20%, n = 3), while other patients found parts of the content incomprehensive (20%, n = 3). 27% highlighted the importance of the monitoring (n = 4), especially the option to receive a graphic feedback about their progress and symptom severity (27%, n = 4).

3.1.3. The video-based synchronous therapy sessions (VTS)

80% of patients valued the video-based synchronous therapy sessions (VTS) as a positive service component (n = 12), while one patient, for which a change in the therapist during treatment occurred, stated that the VTS were positive with the first but not with the second therapist (04). 67% of patients specifically stated that it was possible to establish a working alliance with the therapist via the service (n = 10).

"For me, it took some getting used to doing this via a computer. But one can adapt oneself to it." (46)

Patients mentioned the videoconferencing as especially useful (67%, n = 10), highlighting the advantage of image transmission (53%, n = 8), the personal character of the procedure (47%, n = 7) and emphasised the personal and close contact to the therapist (40%, n = 6). The sessions were mentioned to be individual and flexible (27%, n = 4), as the VTS allowed them to talk about their problems and provided support (33%, n = 5) as well as the possibility to ask questions (60%, n = 9). The VTS were mentioned to be individual and flexible (27%, n = 4).

"It was important for me to see my therapist. I could ask anything during this session, because so many things had come up and I needed to re-sort them." (05)

The majority (87%) of patients experienced technical difficulties with the video tool (n = 13). Some patients criticized the short duration (20%, n = 3) (50 min) and fixed end of the sessions.

"What I really want to say: My therapist is great! I really trust her. She really caters me, she is not only listening but engages." (42)

3.2. System usability and perceived effectiveness

Almost all patients rated the overall system usability as high (93%, n = 14). They state that the program menu was easy to use (33%, n = 5) and clearly structured (27%, n = 4). They rated the OTM as easy to understand (47%, n = 7) and well structured (53%, n = 8). Most patients stated that they did not experience any problems in the use of the video tool (73%, n = 11) and that it was easy to use (27%, n = 4). Here, patients clearly differentiated between the use of the video tool and technical difficulties during the VTS such as connectivity issues.

Patients reported that overall, the blended iCBT service fostered a deeper understanding of their condition (60%, n = 9). Within a multitude of statements about their symptoms, patients reported to "feel better" (47%, n = 7), more stable (27%, n = 4) and more active (27%, n = 4). Some described the service as a "learn to help yourself" approach (33%, n = 5).

"I became more active again. And I got to the bottom of my problems. I can now address my problems and think differently. I learned a lot about myself. My behaviour in some situations changed and I communicate differently." (10)

Table 5
Patient's described treatment effects, experiences with the combination of OTM and VTS and the comparison to regular face-to-face treatment. Identified concepts, number of patients providing information and percentage of total sample.

Treatment effects			Combination of OTMs and VTSs			Comparison of iCBT service and traditional therapy		
Concepts	Patients		Concepts	Patients		Concepts	Patients	
	N	%		N	%		N	%
Patients gain a deeper understanding of their condition	10	67	The combination is mentioned as a positive aspect of the service	14	93	The patient sees no disadvantages in the iCBT service	9	60
Patients state that they feel better	7	47	The patient states that the emphasis of the service lies on the VTS	11	73	The patient regards the iCBT equally effective	8	53
Patients describe the service as a "Help to help yourself" approach	5	33	The patient states that the use of the OTMs would not be possible without the videoconferencing sessions	9	60	The patient regards the quality of communication with therapist as equal	5	33
Patients stated that they feel more stable	4	27	The patient perceives the combination as building onto each other	6	40	The patient finds an advantage of the iCBT service in the lack of waiting times	4	27
			The patient perceives the OTMs as preparation for the videoconferencing and a background for discussion	6	40	The patient regards both treatment forms to be equal	4	27
			The patient rates the components as equal	5	33	The patient regards the OTMs an advantage to traditional therapy	3	20
			The patient rates the ratio of OTMs to VTS as good	5	33			
			The patient mentions OTMs as homework to consolidate session positively	4	27			
			The patient states that the use of telephone only would make the treatment impossible	4	27			
			The patient states that he/she is glad to receive answers to questions about OTMs in the session	4	27			
			The videoconferencing session acts as motivator to work on the OTMs	3	20			

Table 6
Patient's individual factors, reactions in the environment and suggested improvement options. Identified concepts, number of patients providing information and percentage of total sample.

Patient's individual factors			Reactions in the social environment			Improvement options		
Concepts	Patients		Concepts	Patients		Concepts	Patients	
	N	%		N	%		N	%
The patient states that his/her technical experience influences his/her use of the iCBT service	13	87	Overall, the patient received positive reactions	11	73	The patient provided improvement suggestions for the overall service	8	53
The patient states that his/her individual symptoms influence his/her use of the service	12	80	People the patient talked to had no knowledge about iCBT	6	40	The patient provided improvement suggestions for the OTMs	5	33
The patient mentions that openness is a factor fostering the therapeutic process	5	33	People reacted curious about the service	6	40	The patient provided improvement suggestions for the VTSs	4	27
The patient mentions that the fact that he/she does not like to write a lot hinders the therapeutic process	4	27	The patient received negative reactions about his interest/participation in the service	5	33	Improvement suggestions for the monitoring	4	27
The patient mentions that his/her perfectionism hinders the therapeutic process	3	20	The patient received a lack of understanding and the service was called "unimaginable"	5	33	The patient wished that more people would be informed about the service	3	20
			The patient's medical practitioner had no knowledge of iCBT	3	20	The patient wished for an extension of the treatment past 25 sessions	3	20
The patient received encouragement	3	20	The patient wished for an optimization of the technical set-up	3	20			
			The patient wished for an optimization of the wording in the platform OTMs	3	20			

With regards to negative treatment effects, some patients reported to feel lost and overwhelmed when working with the OTM (09, 42), as well as pressured to address their problems (04, 46). Two patients reported to feel exhausted (05, 62) and stressed (04, 46) after the videoconference session.

3.3. The combination of online self-help treatment modules (OTM) and video-based synchronous therapy sessions (VTS)

The combination of video-based OTM and VTS (93%, n = 14) as well as their ratio (33%, n = 5) was mentioned generally positive (93%, n = 14). Participants felt that the two components build onto and were supporting each other (40%, n = 6) and that the OTM were preparing the VTS and giving background for the discussion (40%, n = 6). Furthermore, they felt that working with an online treatment module after VTS consolidated the discussed (27%, n = 4) and they were glad to be able to ask questions about the module's content (27%, n = 4), while the fact that the VTS were the motivating factor for the engagement with the OTM (20%, n = 3) was also mentioned.

"One has to be able to talk about things and be able to ask questions. We had these discussions and then there were the modules. I think, there cannot be any other way, they belong together." (19)

Most patients felt that the emphasis of the service was placed on the VTS (73%, n = 11), while some rated the components equal (33%, n = 5). Participants stated that they could not imagine working with the OTM without the associated VTS (20%, n = 3) and some mentioned that they could not imagine to only have contact via video or telephone (27%, n = 4).

3.4. Comparison to traditional face-to-face therapy

The majority of patients (60%, n = 9) saw no disadvantages of the iCBT service in comparison to traditional face-to-face treatments and stated that they felt that the iCBT treatment was equally effective as a traditional treatment (53%, n = 8). Furthermore, they rated the communication via teleconference an equal form of communication as regular face-to-face therapist-client-contact (33%, n = 5) and saw an advantaged in the short waiting times (27%, n = 4) and the additional OTM (20%, n = 3).

"My therapist really accompanies me. He is a 'real friend' in quotation marks and he makes me feel safe. Just as if we had a face-to-face session" (10)

"For me, this is the optimal treatment" (62)

"I do not think it makes any difference to be in the same room" (04).

3.5. Patient's individual factors

The majority of patients (67%) stated that it had helped them to have previous experience in the usage of technology (n = 10), while others felt that their "lack of computer skills" (42) were related to the technical difficulties with the VTS they were experiencing (10, 42).

"If you know a little something about working with computers, you will be managing the program flawlessly. There are no surprises." (33)

Some patient's felt that it was important to be open towards this form of service (02, 10,) and they felt that they could address their problems in a very open way in langue and text (27%, n = 4). Participants mentioned that it was hard for them to write about their problems (27%, n = 4), as they were "not the writing type" (20%, n = 3). High perfectionism was mentioned as a barrier in using the service (20%, n = 3), while a high internal motivation (09, 46) and curiosity (02, 09) were described as facilitating factors.

3.6. Reactions in the social environment

Reactions in the patient's social environment were mainly positive (73%, n = 11) and described as curios (40%, n = 6) and encouraging (20%, n = 3). Negative reactions mainly focused on the fact that the social environment could not imagine such a treatment or showed a lack of understand for the service (27%, n = 4). Furthermore, 40% of the patients reported that many people just did not know about the service (n = 6), but reacted in a neutral way.

Two patients mentioned positive reactions by their medical practitioner (02, 05), while one patient reported an extremely negative reaction (09), including being laughed at because "this is never going to work […] there will be a cold relationship via videoconferencing […]". Patients also reported that their medical practitioner did not know about the type of treatment delivery (20%, n = 3).

"I mentioned it in the day-hospital. They mainly showed a negative attitude. They said that this would never work. Some even appeared amused. The professionals were. Other patients were interested. They encouraged me."

3.7. Improvement options for the iCBT service

Patient's improvement suggestions for the iCBT service were very individual and differed between patients. Those patients that named improvement options for the service (47%, n = 7) specifically mentioned the wish for an extension of the treatment beyond 25 sessions (20%, n = 3) and the provision of the service to a wider range of people by informing more people (20%, n = 3), including more health care insurance companies (10) and treating multiple mental health disorders (12) instead of only targeting depression. Three patients mentioned the need for improvement of the technical setup (20%, n = 3).

Regarding the online modules, two patients asked for the extension of answering options in the multiple-choice questions (04, 09), as they felt the answer categories were not sensitive to change and did not include questions on physical symptoms. Other improvement suggestions included the option to save, print, edit and upload content to the platform (46) and the provision of mindfulness- and relaxation content (05).

Furthermore, patients provided improvement suggestions for the VTS (27%, n = 4), including the request that the therapist would ask the patient more often if he was overburdened by the content (02), the whish for longer sessions (05), an optimization of the therapist's room visible in the videoconference ("more appealing and colourful"; 10) and the notification about the lack of eye-contact beforehand (09).

4. Discussion

Patients participating in the interviews were generally satisfied with the blended internet- and video-based iCBT (blended iCBT) service. Results suggest that patients regarded the face-to-face diagnostic interview as especially useful for it is viewed as allowing an informed decision on the patient's participation.

In contrast to often stated disadvantages of internet-based self-guided and guided self-help approaches, such as the lack of individual fit of the service if a patient is suffering from a comorbid disorder (Andersson and Titov, 2014), results of this study suggested that the combination of treatment modules with VTS could individualize the treatment. Furthermore, some participants described that they could not imagine to be working with the online treatment self-help modules only, while others mentioned that only receiving video- or telephone-support would be insufficient, highlighting the necessity to combine the two in their opinion. Participants rated the service as being individually tailored to their needs and flexible regarding their condition and therapeutic objectives. Some argued that the lack of personal fit of the OTM was compensated by the VTS and the use of the messaging service. It is indicated that most patients experienced it as helpful to received structured OTM to focus on their condition and work though the disorder-specific information in their own pace. This result is consistence with studies reporting the importance of flexible use of treatment modules to satisfy patient's need for autonomy and self-management (van der Vaart et al., 2014; Wilhelmsen et al., 2013). On the other hand, the individuality of selecting OTM specifically tailored to their needs at a later stage of the treatment was regarded helpful in tackling more personal problems. This fact helps overcoming the disadvantage of lack of individual fit of internet based guided self-help interventions described in the literature (Gerhards et al., 2011) as well as a lack of attention on comorbid disorders in standardized treatments (Andersson and Titov, 2014).

Moreover, patient's statements suggest that the combination of OTM and VTS could lead to a higher perceived usefulness and thus to a higher acceptance and effectiveness of the service, compared to solely OTM and VTS. Additionally, the VTS provided the needed motivation to additionally engage with the OTM thus overcoming obstacles often reported in literature such as time pressure and competing priorities (Donkin and Glozier, 2012).

The importance of the therapeutic alliance becomes clear when examining the patients rating of their experiences with and the usefulness of the VTS, which are mainly based on the therapist's role in the service. In the present study, a change in therapeutic personnel led to a determination of the service on 67% of patients affected. Results indicate that therapeutic alliance was not influenced by technical difficulties, but if there was already a low alliance, technical difficulties became more relevant to the participants of the study. Patients experienced the working alliance as intense and sufficiently stable to create an emotional bond between therapist and patient, allowing for an agreement on common therapy goals and tasks via VTS. This result was consistent with the literature suggesting the working alliance in internet interventions to be comparable to the one in face-to-face therapy (Sucala et al., 2012). Regarding potential disadvantages of

video-based transmission such as the vulnerability to negative thoughts in the absence of immediate response within unguided self-help interventions (Beattie et al., 2009), the data suggested that this limitation to the therapeutic process can be overcome using VTS.

Patients perceived the blended iCBT service as equal to face-to-face therapy as the treatment modules fostered the therapeutic process as the written content was constantly available to the patients and could be called upon if needed. The OTM were considered to consolidate the discussed, possibly enhancing the treatment process. This result was in line with existing literature indicating that some patients value their participation in guided iCBT equally to their former participation in a face-to-face therapy or more than the use of medication (Richards et al., 2016). However, the present study suggests that the combination of OTM and video-based synchronous session was experienced as being even superior to regular face-to-face treatments by at least some patients.

Results indicate that some participants needed some time to get used to the therapeutic situation in the video-based setting and it stays unclear which negative effects this form of treatment delivery might have with regards to the transport of feelings and nuances in the therapeutic process.

Limitations of this study include that despite our effort to recruit a heterogenous sample, the majority of the participants were overall satisfied in the service. Due to the limited sample size, as it is common in qualitative studies, it is unclear whether this can be generalized or whether the selection of the participants biased the results. However, participants were comparable to those who were treated at the same time, but did not react on the invitation to participate in the interviews. Additionally, the decision to base the qualitative analysis on concepts that were mentioned by at least three participants to increase the reliability of the conclusions, may have limited us detect important factors that that were experiences or mentioned by some patients, but that can be nevertheless equally important. Finally, it might be also the case, that the good therapeutic alliance between patient and therapist resulted in socially adequate answers to the interview questions and completely anonymous data gathering, such as an online poll, might have revealed a different picture of experiences with the service.

As reported, participants in the study mentioned negative effects of the blended internet-and video-based service such as feeling overwhelmed by the treatment modules, exhausted and pressured to address their problems. However, it is yet unclear whether these findings are specific for the blended treatment format. Nevertheless, future studies should explore potential negative effects of such treatments, and when doing so, comparing also traditional face-to-face to internet-based guided self-help (Ebert et al., 2016; Rozental et al., 2014) and blended treatment approaches. Furthermore, the optimal frequency and form of support has been discussed broadly in recent literature (Andersson and Titov, 2014; Palmqvist et al., 2007) and is still under discussion. While this study suggests that patients value the video-based time with the therapist, a weekly fifty-minute consultation plus the additional online treatment did not depict at lower costs compared to regular face-to-face therapy. Moreover, some patients indicated that the combination of the synchronous sessions and the online-treatment modules allowed them to have a better outcome than receiving a regular treatment without additional treatment modules. Therefore, future studies should investigate a) whether blended internet- and video-based treatment may be more effective than regular treatment if OTM are used to intensify the treatment and/or b) evaluate whether such formats can result in lower costs- but at a comparable effectiveness, if OTM are used to replace some of the synchronous therapy sessions. The latter is currently being evaluated for blended treatment formats in a large scale multi country project, E-compared (Kleiboer et al., 2016), c) moreover, it has been suggested that in highly standardized treatments the therapeutic guidance only must fulfil the motivating part of treatment. Therefore, it should be tested if a further standardization of the blended internet- and video-based treatment would lead to a possible reduction of therapist time while resulting in an equally positive experience for the patient.

Additionally, the blended iCBT service opens a way to overcome the known limitation of many internet interventions being the treatment of comorbid disorders and symptoms. Therefore, future improvements of the service should focus on making it transdiagnostic with the option to tailor it to disorder-specific treatment components (Carlbring et al., 2011; Silfvernagel et al., 2012; Titov et al., 2010) and thus bringing it closer to actual clinical practice. This might also allow for the treatment of more severe disorders (Johansson et al., 2012).

4.1. Conclusion

In summary, the study results suggested the feasibility of combining telemedical approaches and iCBT into a blended concept. Doing so, traditional barriers for the provision of evidence-based CBT could be overcome and it could be assumed that thus more people affected by depression that would otherwise not make use of either iCBT or face-to-face psychotherapy could be reached. Patients experienced the blended iCBT service as a useful alternative to traditional face-to-face treatment highlighting the combination of online self-help treatment modules and video-based treatment sessions an effective way to cope with their depressive symptoms. Following this approach might be an option to make affordable and effective evidence-based CBT available independent from regional barriers. Therefore, enriching evidence-based iCBT services with video-consultations might be a promising way to improve the acceptance of and the adherence to these services.

Supplementary data to this article can be found online at https://doi.org/10.1016/j.invent.2018.01.003.

Acknowledgements

The authors would like to explicitly thank Nils Schneegans and Julia Kremer for their work on deriving the interview guide, conducting the interviews and editing the analysis matrix, as well as the Schoen Clinic Bad Arolsen and the BARMER for their cooperation. This work was supported by the ICT Policy Support Programme (ICTPSP) as part of the Competitiveness and Innovation Framework Programme (CIP) by the European Community (Grant Agreement Number 621000).

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