

ORIGINAL RESEARCH

Assessing the usability and acceptability of Face IT@home: an online CBT intervention for people with visible differences

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Abstract

To increase access to support, an online psychosocial support tool for adults with visible differences was adapted for use without referral or supervision. This intervention combines a cognitive behavioural and social skills model of support. This study aimed to assess the usability and acceptability of Face IT@home as a self-help intervention. Eighty-one participants were recruited (32 with visible differences). Stage 1 included 14 participants (11 female, all with visible differences) who viewed two sessions of Face IT@home and undertook a semi-structured telephone interview. Stage 2 consisted of 14 think-aloud sessions (13 female, none with visible differences) with participants, supervised by researchers. Stage 3 employed 53 participants (47 female; 19 with visible differences), to view one session of Face IT@home and complete an online survey to evaluate usability and acceptability. User interviews, think-aloud studies and questionnaires identified usability and acceptability factors of Face IT@home that make it fit for purpose as a self-help tool. Participants suggested some changes to the Face IT@home program to improve usability. Participants reported that Face IT@home was a useful tool for people with visible differences and could be effective. The CBT-based model was considered a useful approach to addressing psychosocial concerns. The online self-help format will increase access to psychological support for adults with visible differences.

Key learning aims

- (1) The paper outlines an important cognitive behavioural framework for supporting adults with visible differences.
- (2) The paper demonstrates the importance of user testing and client involvement in developing intervention models.
- (3) The studies highlight one approach to the process of user testing that can produce a robust online intervention.

Keywords: acceptability; cognitive behaviour therapy; intervention; psychosocial; social skills training; user involvement; visible difference

Introduction

Approximately 18% of adults within the UK currently self-identify as having a visible difference (Changing Faces, 2021), caused by a range of conditions, injury or treatment side-effects, including alopecia, cleft lip, burn or surgical scarring, limb loss or body form changes. Evidence suggests that around 48% of affected adults experience at least borderline clinical levels of anxiety (Rumsey *et al.*, 2004). Psychological difficulties can include detrimental effects on body image (Lawrence *et al.*, 2006), low self-esteem (Harcourt *et al.*, 2018; Kent and Thompson, 2002), and feelings of anger (Blakeney *et al.*, 2005). Social difficulties include experiencing staring, name-calling, intrusive comments, rejection (by peers and family) and unsolicited questions about their appearance that often leads to social anxiety and avoidance behaviours (Bessell *et al.*, 2010).

Successful adjustment lies in the ability to overcome social anxiety and develop skills to interact with other people at various levels; from meeting people for the first time to enjoying intimate relationships (Rumsey and Harcourt, 2012). Interventions using cognitive behavioural therapy (CBT) to target body image disturbance and unhelpful appearance-related schemas, and social skills training workshops to teach skills to address social anxiety have therefore proved successful (Bessell and Moss, 2007; Jenkinson *et al.*, 2015; Muftin and Thompson, 2013; Norman and Moss, 2015).

Therapeutic framework of Face IT

The Face IT model focuses on a combination of cognitive restructuring, social skills training and exposure therapy. Face IT follows an integrated approach to support, by addressing aspects associated with different theoretical models of the development of psychosocial distress among those with visible difference. These models are outlined below.

The social anxiety model (Baumeister and Leary, 1995) suggests that individuals with visible differences experience social anxiety at least in part because they are fearful of being rejected or excluded on the grounds of having an unusual or different appearance (Kent, 2000). The level of social anxiety an individual experiences acts as a mediating factor between the severity of their visible difference (how objectively noticeable the appearance concern is) and their emotional response. The intervention approach most appropriate to this framework is exposure to social situations (Newell and Marks, 2000). This model differs from the widely accepted Clark and Wells (1995) model of social anxiety which focuses more on the rationale that social anxiety is caused by irrational or excessive fear of negative evaluation. In the case of those with visible difference, there is a very real reason to fear and indeed expect a degree of negative evaluation due to discrimination towards those with a different or altered appearance (Thompson and Kent, 2001; Zucchelli *et al.*, 2018).

In keeping with this discrimination, Goffman's (1968) stigma model focuses more on the stigma that those with visible differences may experience from others, stating that having a different appearance is a characteristic that is 'devalued' by society and as such those with a visible difference are more likely to be excluded or rejected, which suggests a very real reason for experiencing social anxiety (Thompson and Kent, 2001). Individuals with visible differences can experience a sense of shame which leads to unhelpful strategies such as concealment of the appearance issue, avoidance of social situations in which their 'difference' may be detected and internalising a sense of being worthless or inadequate because they do not meet appearance norms (Sharratt *et al.*, 2020; Thompson, 2011; Thompson and Kent, 2001). The intervention approach most appropriate to this model is a reframing of social anxiety as a result of stigma and following a more compassion-focused approach (Gilbert, 1997).

The social skills model suggests that many of the negative reactions that individuals experience from others are less to do with stigma, but more a reaction to the poorer social skills that the person with the visible difference is exhibiting because of their own self-consciousness (Partridge, 1994). The reality of the situation for many people with visible differences is indeed that they

experience some level of rejection and exclusion from others (Thompson and Kent, 2001), but in some cases this effect is exacerbated by the poor social skills that they have developed (Kent, 2000). Therefore, focusing on improving social skills is a key element for intervention models (Robinson *et al.*, 1996).

Finally, the body image disturbance model (Cash, 1996) suggests that within cultures where high value is placed on appearance, body image disturbance is relatively commonplace. In the case of visible difference, the individuals may experience dissatisfaction with their body image because they do not conform to the cultural norms of attractiveness that their society imposes. Therefore, this model suggests that interventions should focus specifically on addressing the way individuals feel about their appearance and the negative assumptions they make about the importance of appearance.

All these models are helpful in describing some of the difficulties faced by individuals with visible differences. However, the reality is that no one model completely explains the lived experience of those with visible differences. A more accurate model was outlined by Kent (2000), where all four of these different elements interact and overlap. Kent (2000) argues that the existence of a visible difference means that individuals live their lives on public display, which leads to unwanted exposure of their appearance concern along with unwanted responses from others, such as staring or unsolicited questioning. These responses can act as a trigger for negative body image to develop. The unwanted responses trigger a feeling of not living up to cultural norms and may activate individuals' own negative self-schemas about what is meant by attractiveness. These cognitions can in turn lead to avoidance in the future of social situations or camouflaging of the feature. These behaviours can lead to poorer social skills, either due to reduced social contact with others, or due to anxious or distracted behaviours where individuals attempt to hide their feature in some way (examples include wearing low-rimmed baseball caps or training the hair across the face, both of which reduce eye contact).

Kent (2000) therefore recommended an integrated model that addresses body image satisfaction and the negative assumptions associated with appearance concerns. He also suggested that it is important to target social anxiety with exposure therapy; however, as there is a very real tendency for individuals to experience negative responses from others, it is important to boost social skills to provide individuals with the resources that they will need to deal with these interactions (Zucchelli *et al.*, 2018). Face IT supports this model and the intervention outlined below is based on a similar integrative approach where elements of cognitive restructuring, social skills training and exposure therapy are combined (see Fig. 1).

It is important to note that standard approaches to social anxiety, such as Clark and Well's (1995) or Rapee and Heimberg's (1997) models that are recommended by the National Institute for Health and Clinical Excellence (NICE, 2013) are not wholly appropriate for this population due to the very real discrimination and prejudice that they experience from other people (Thompson and Kent, 2001) and due to the impact that their visible difference has on their own body image and associated sense of stigma (Sharratt *et al.*, 2020). However, the Face IT model broadly follows the active elements of intervention that are included within Rapee and Heimberg's (1997) model of social anxiety: psychoeducation surrounding social anxiety, cognitive restructuring, graded exposure, examination of core beliefs and relapse prevention (see Fig. 2). Heimberg's model is more appropriate to those with visible difference as the focus is on distortions of thinking and biases in social information processing that can lead to feelings of anxiety in social situations. The Face IT model of intervention broadly follows the approach outlined by Clarke *et al.* (2013), in their CBT intervention manual for those with visible differences. Within this model the focus is much more upon the impact that discrimination, prejudice and stigma have in the formation of core beliefs. These elements are also the key focus for cognitive restructuring whereby individuals with visible differences may assume, in some cases wrongly, that they are experiencing prejudice from other people (Zucchelli *et al.*, 2021). The use of social skills is also of fundamental importance

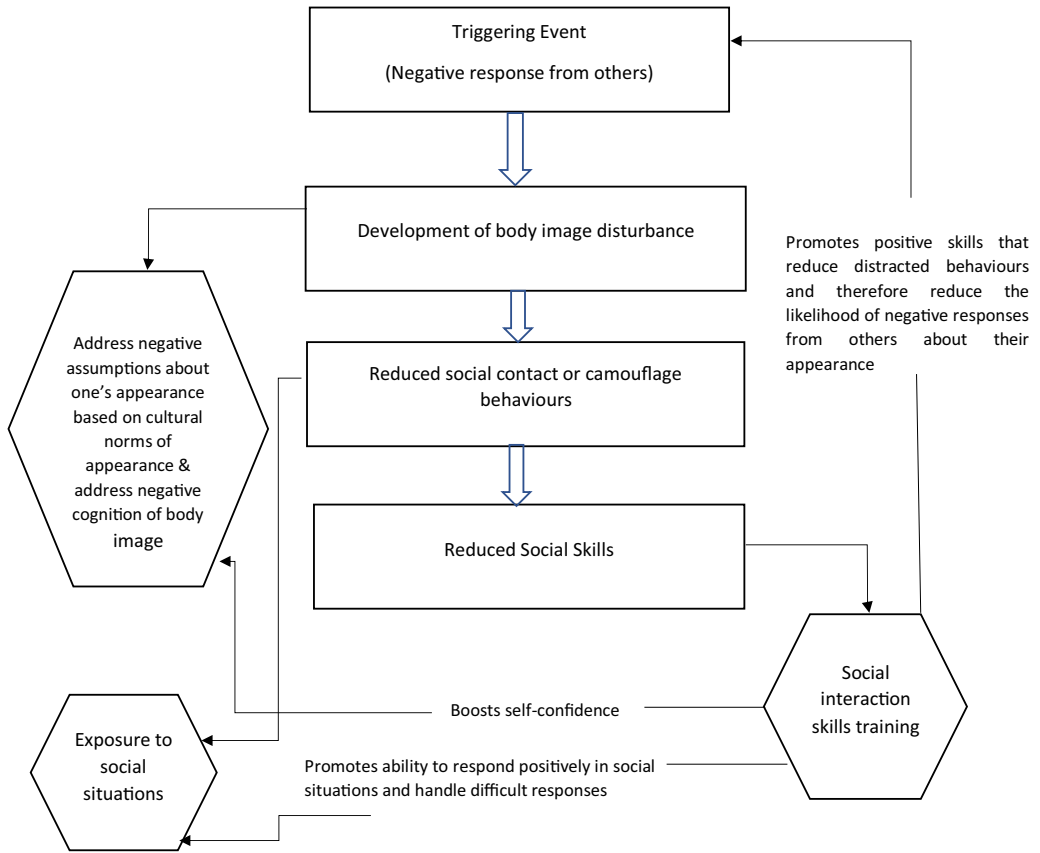


Figure 1. Theoretical framework for Face IT.

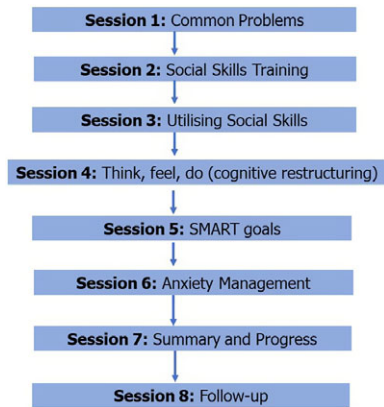


Figure 2. Outline of intervention sessions in Face IT@Home.

to ensure a reduction in the safety behaviours that individuals with visible differences often display that can lead to increased staring (Partridge, 1994). This is employed alongside teaching ‘stock phrases’ for individuals to use when addressing unsolicited questions to reduce the anxiety and cognitive load experienced.

Online interventions

Within the field of visible difference, most interventions regardless of their approach are often only accessible to a few and are expensive to offer and implement (Bessell and Moss, 2007; Norman and Moss, 2015). However, the evidence base for CBT self-help for those with visible differences is increasing, with these new models showing real promise for increasing access to psychological support (Muftin and Thompson, 2013). Evidence is also growing for the use of computer-based interventions specifically, which increase accessibility to specialist support, may offer a viable alternative to limited and costly face-to-face therapy (Kaltenthaler *et al.*, 2008; Rodriguez-Pulido *et al.*, 2020) and some such programmes for anxiety and depression are now used within the UK via the National Health Service as part of an attempt to increase access to services provision through the ‘Digital First’ initiative (Donnelly, 2019). This model would involve offering a ‘digital first’ option for most, allowing for longer and richer face-to-face consultations with clinicians where needed.

Face IT, an eight-session online psychosocial support program, was designed in consultation with both service users and healthcare professionals to provide an inexpensive, standardised intervention to promote adjustment to visible difference (Bessell *et al.*, 2010). Face IT was found to be effective when facilitated by healthcare professionals in an out-patient setting (Bessell *et al.*, 2012a). Face IT focuses specifically on appearance-related distress rather than on conditions. While many CBT-based condition-specific interventions exist (for examples, see Bundy *et al.*, 2013; McGarvey *et al.*, 2010; Shen *et al.*, 2020; van Beugen *et al.*, 2016), the appearance-related elements are over-arching issues that are not condition-specific. Focusing on condition-specific interventions can lead to the appearance-related elements being diluted and a focus being placed too heavily on medical intervention for the specific conditions (Bessell and Moss, 2007; Thompson, 2011). This is exacerbated by a reluctance among individuals with appearance-related difficulties to focus on the psychological impact of their condition (Thompson, 2011).

Although acceptable to secondary care clinicians and clients, barriers to accessing Face IT remain for individuals with mild-to-moderate appearance-related distress who are not able or willing to secure psychological support via secondary care. To address this limitation, the Face IT tool was adapted for use independently, without the need for a referral, and without requiring supervision by a psychologist. The new ‘Face IT@home’ program is a self-management tool that offers the ability to improve access to psychosocial services for adults with visible differences across the UK and beyond.

Performing a usability analysis, giving users direct access to the program to ensure it is fit for purpose, is the first stage in redeveloping online interventions of this nature, as the specifications of a target user-group can never be fully addressed by software developers (Williams, 2004). Methods of usability testing include utilising both empirical testing and usability checklists. The former involves testing software interface in controlled conditions under supervision (Maramba *et al.*, 2019; Smilowitz *et al.*, 1994); the latter consists of a series of questions relating to aspects of a programme design with users rating their satisfaction using Likert scales (Maramba *et al.*, 2019). Empirical testing often takes the form of a cognitive walkthrough (Karat *et al.*, 1992), whereby the user navigates the program under supervision. This can be conducted using a ‘think-aloud’ protocol where the user talks about their experiences of the program in real time (Maramba *et al.*, 2019; Olmsted-Hawala *et al.*, 2010). The current study aimed to assess the acceptability and usability of the Face IT@home tool through the adoption of a range of usability

methodologies to ensure it was suitable for general use, ahead of a trial of real-world effectiveness. This was achieved through three distinct study phases: (1) an online home usability testing process with follow-up to assess the acceptability of programme content and identify any usability issues, (2) a lab-based think-aloud process to assess further any usability issues and to observe user-interface interactions and (3) an online usability checklist to identify any final changes needed to the programme's content or interface.

Method

Participants

Eighty-one adults ($n = 66$ female) from across the UK, some with visible differences and some without, were recruited using online advertisements posted by charities that support people with visible differences, and through a University participation pool (a database of people who are signed up to taking part in studies). The sample self-selected as either having or not having a visible difference. The participants without visible differences were included in the study to test more general usability characteristics of the program, such as graphics, interface and layout.

Out of 81 participants, $n = 32$ disclosed having a visible difference. Reported conditions included facial scarring ($n = 13$), acne (7), cleft lip and palate (3), psoriasis (3), vitiligo (2), facial palsy (1), alopecia (1), cerebral palsy (1) and neurofibromatosis (1). Two individuals reported having motor impairments that affected their arm and hand movements and three participants experienced visual impairments. All participants were fluent in English and were a minimum of 18 years old (age range 18–64 years; mean = 29.35, $SD = 10.90$). Fourteen participants (11 female), all of whom had a visible difference, took part in Stage 1. A further 14 participants (13 female) without visible differences took part in Stage 2 and Stage 3 employed 53 participants (40 female), 19 of whom reported having a visible difference. The study gained appropriate University ethical approval from the Faculty of Health and Human Sciences, University of Plymouth ethics committee (SOP4216_2016) and adhered to ethical standards which included participants consenting to results from the study being published.

Design

Stage 1

This stage employed an online usability testing approach and audio recorded telephone interviews. The aim of Stage 1 was to identify any key changes that needed to be made to both the clinical content of the intervention and to identify any issues with usability. As such, the study recruited only individuals with a visible difference to ensure they could comment on the program content. The program has eight sessions; the first seven provide users with the knowledge, skills and tasks aimed at addressing distress caused by their visible difference. The eighth is a brief revision quiz which tests a user's knowledge of the program's key content. Usability and acceptability testing was focused on the first seven sessions. Participants completed a minimum of two sessions of the program at home and provided feedback on their experience in a semi-structured interview. The interview schedule was utilised only as a guide, and participants were free to give detailed accounts and discuss areas outside of the schedule. Questions included 'how easy or difficult did you find the program to work with?', 'how acceptable was the content of the program?', 'how accessible do you think Face IT@home will be?' and 'what are your views of the program's graphics?'. Participants were instructed which two sessions to work through and could choose to complete the full program if they wished. Interviews were transcribed and analysed using directed content analysis (Hsieh and Shannon, 2005).

Stage 2

This stage employed students in a series of concurrent 'think-aloud' processes, as described by van den Haak *et al.* (2003). No participants self-selected as having a visible difference. The research team initially attempted to recruit individuals with visible differences local to the University to take part in this stage of the investigation. Due to difficulties with recruitment a student population as employed, as the focus of this stage of the study was predominantly on usability factors and how users interacted with the platform. While participants were asked similar questions to Stage 1 of the study, they were asked to focus more specifically on the user interface rather than the programme content.

A think-aloud protocol requires participants to 'talk aloud' about their experiences of a situation, problem or task while undertaking it (van den Haak *et al.*, 2003). The model follows the process of a cognitive walkthrough, where participants engage in a task in the way they would in the real world but while being observed in a laboratory. Cognitive walkthroughs enable researchers in usability design to identify errors individuals may be making when interacting with a tool or solving a problem (Blackmon *et al.*, 2002). Within the think-aloud protocol, participants are also asked to talk through what they are doing and their thought processes during such techniques. In this way, the approach allows the researchers direct access to the ways in which individuals interact with computer programme such as Face IT (Fonteyn *et al.*, 1993).

In this instance, participants used the program in a laboratory setting under the supervision of the chief investigator (second author). Participants were asked to navigate the program as though they were using it at home properly. They were then instructed to speak out loud to the investigator whilst completing one pre-selected session of the program and to comment on thoughts they were experiencing, any difficulties they were having with finding information or navigating the site. The investigator sat behind participants with a list of questions and prompted them to express their opinions and thoughts about the program, with a focus on the program's navigation, content, structure and layout. The investigator kept field notes to aid the subsequent data analysis and formation of recommendations for improving the website. After completing this task, participants took part in a semi-structured interview, using the same questions from Stage 1, to sum up what they thought of the program. The 'think-aloud' approach and semi-structured telephone interviews were chosen in order to gain both retrospective and concurrent views of the program, utilising the advantages of both approaches as described by van den Haak *et al.* (2003). The think-aloud sessions and interviews were audio recorded and transcribed and analysed using directed content analysis (Hsieh and Shannon, 2005).

Stage 3

This stage employed usability checklists completed online by participants. Questions from Stages 1 and 2 were transformed into statements for the questionnaire and measured using a 5-point Likert scale. Additional statements were included based on standardised questions for website usability around areas such as layout, graphics and navigation (for example 'information was easy to read', 'screens have the right amount of information' and 'the site's content interests me'). Participants were either individuals with a visible difference or students without a visible difference. The research team included students without visible differences to provide further feedback on the usability aspects of the program as we were unable to recruit more individuals with visible differences. While the same usability checklist was used for both groups, those without visible difference were instructed to focus more specifically on the user interface than the clinical content. Participants completed one pre-selected session of the program at home and completed the online usability checklist using 'Survey Monkey'. Quantitative data were analysed using descriptive statistics. The free text sections of the checklist were analysed using directed content analysis (Hsieh and Shannon, 2005) and combined with the findings from Stages 1 and 2.

Table 1. Table of qualitative themes

Theme	Subtheme
1. Usability	(a) Navigation (b) Fit for purpose (c) Technical issues
2. Acceptability	(a) Graphics (b) Content (c) Structure
3. Accessibility	(a) Platform (b) Security

Data analysis

Qualitative analysis

Throughout the three stages of the study, qualitative data were analysed using directed content analysis, as described by Hsieh and Shannon (2005). This approach to content analysis is appropriate for usability testing as the questions posed are ‘directed’ towards aspects of usability and design to ensure the appropriate information is obtained. The data from the interviews, think-aloud studies and online questionnaires were read carefully to identify initial codes and relevant text before grouping similar topics together into meaningful groups and assigning candidate themes and subthemes (Patton, 2002). The same data extract could be included in more than one group. Data were then reviewed to define clear distinctions between the categories and a set of data were collated to support each theme identified. The data were analysed by the second author, and then validity checked by the first author and sent to participants for member checking (in the case of the initial interviews conducted in Study 1). Participants were assigned code numbers to protect anonymity. These codes are used in the Results section, next to included quotes.

Mixed methods

The quantitative data from Stage 3 were collected to ensure that usability issues had been detected and addressed. The data from the usability questionnaires were analysed using descriptive statistics and where appropriate correlations were conducted to assess the relationships between responses to questions. The qualitative data collected in all three stages of the study were analysed separately and then combined using a triangulation approach (Hanson *et al.*, 2005). The qualitative data from the interviews were integrated together and analysed using directed content analysis (Hsieh and Shannon, 2005). These data were used to highlight the positive and negative aspects of the Face IT@home program. Therefore, the quantitative data are displayed initially and then the qualitative data are outlined to provide detailed feedback about users’ experiences of Face IT@home.

Results

The qualitative analyses from Stages 1 and 2 were integrated to provide in-depth qualitative feedback about the usability and acceptability of Face IT@home. The data are outlined below along with the questionnaire results linked to each identified theme. The directed content analysis identified three main themes with associated subthemes: (1) Usability, (2) Acceptability, and (3) Accessibility with associated subthemes (see Table 1).

Correlational analyses of the data collected in Stage 3 found no relationship between the participant’s ratings of usability variables and demographic characteristics such as age, gender or appearance-affecting condition. Ratings of usability factors from Stage 3 are reported within the qualitative thematic sections below.

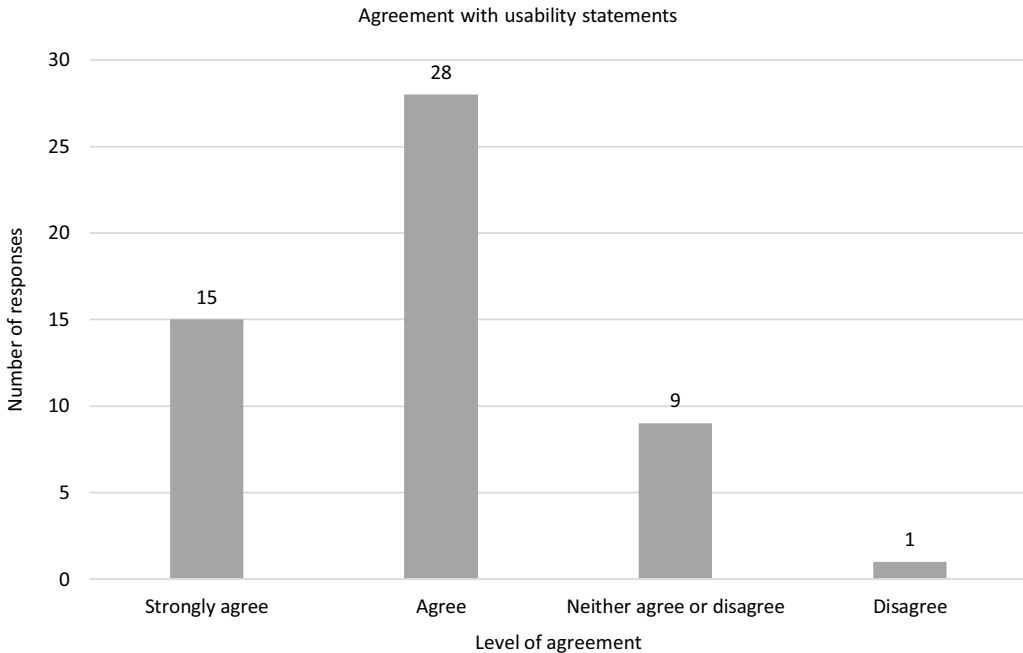


Figure 3. Responses to usability questions.

Theme 1: Usability

Participants agreed that the Face IT@home site was easy to use and straightforward to navigate. This was supported by the findings from Stage 3, which identified that 43 participants (80%) agreed or strongly agreed that the site was usable (Fig. 3). Only one participant (3%) judged that the program lacked usability. Technical issues highlighted by participants were subsequently addressed by the software developers. Participants identified that the usability of the site was linked with navigation and the tool being fit for purpose.

Subtheme: Navigation

The program was developed to be used without the supervision of a clinician so views on navigation are important. The findings from Stage 3 suggest that participants generally found it easy to navigate the site ($n = 44$; 83% agreed or strongly agreed), could remember where things were (40; 75%) and found it clear how the different elements of the program worked (43; 81%).

Positive aspects of the program were identified, such as being able to revisit content if necessary, and ease of navigation. Suggestions for changes included having clearer navigation back to the homepage from within sessions (Table 2).

Subtheme: Fit for Purpose

In Stage 3, 51 participants (96%) either agreed or strongly agreed that Face IT@home had a clear purpose, was likely to be effective (42; 79%) and should be made widely available (48; 91%). Most participants (17 out of 28 respondents, 61%) enjoyed the clarity of the content and layout, and thought that Face IT@home would be good at providing support and help for its intended users (Table 2).

Table 2. Theme 1 quotes from participants

Theme	Quotation
Usability Subtheme: Navigation	<p><i>'I think it was quite easy to use, um I didn't really have any problems with it.'</i> Study 1 P2 (female, 51 years)</p> <p><i>'It's easy to go back and forward you know when to click and go straightforward on the top is the sessions yeah.'</i> Study 2 P10 (male, 27 years)</p> <p><i>'Yeah I mean I think it's very, very accessible for people that know how to navigate around a program and know how to use the internet ... Erm, maybe for people that are slightly older, maybe OAP [old age pensioners], it might be slightly more difficult because obviously they don't use computers as much.'</i> Study 1 P12 (female, 22 years)</p> <p><i>'Erm, some of the links are fairly small so think if they were kind of more kind of right in front of you as such.'</i> Study 1 P7 (female, 64 years)</p>
Usability Subtheme: Fit for purpose	<p><i>'I think it would be helpful ... there's a liberation about it which I can't quite describe yet, cause I've not felt it before.'</i> Study 1 P4 (female, 24 years)</p> <p><i>'Yeah so I - I think it is useful just be - so it kind of, you kind of find out things you didn't know about yourself.'</i> Study 1 P6 (male, 28 years)</p> <p><i>'I think that this - this could be available as - as a - an initial tool ... or as a back-up ... while you're actually going through CBT but also after it.'</i> Study 1 P13 (female, 18 years)</p> <p><i>'I mean I - I think it would be good for someone who has like kind of major issues, so if you struggle to leave the house I think it's a good place to start.'</i> Study 1 P8 (female, 58 years)</p>
Usability Sub-theme: Technical issues	<p><i>'Um, perhaps it's a bit uh where those answers a little bit where we are asked to - to give some answers ... there's little arrows ... there. And then on the end you say get your scores, some of them didn't work for me.'</i> Study 1 P3 (female, 36 years)</p> <p><i>'Well just at the end it was frustrating it wouldn't allow me to submit it and I just thought oh I hope I've not lost all, you know, what I've just spent time doing.'</i> Study 1 P8 (female, 58 years)</p>

Participants felt the program could be used in different ways: to complement face-to-face therapy, as an initial intervention prior to or in preparation for receipt of higher-level support; and there was general agreement that it would be effective when used on its own by those who do not require support from a clinician but would benefit from low-intensity/low-level support (Table 2).

Subtheme: Technical Issues

Technical issues can have an impact on the usability of a program. A series of important technical difficulties were identified, particularly involving the functionality of the online questionnaire and Face IT@home videos. Within the program, areas where participants were encouraged to submit feedback sometimes failed to work appropriately (Table 2).

Theme 2: Acceptability

The majority of participants (40; 75%) agreed or strongly agreed that the program was acceptable (Fig. 4) and liked its content and structure (42).

Subtheme: Graphics

The program contain a series of illustrations of individuals performing certain activities, as well as illustrated images of people with visible differences. Other graphical elements of the program include the colour, size and font type used. Study 3 found general positive responses regarding the graphics, with 46 (87%) participants agreeing or strongly agreeing that the website looked

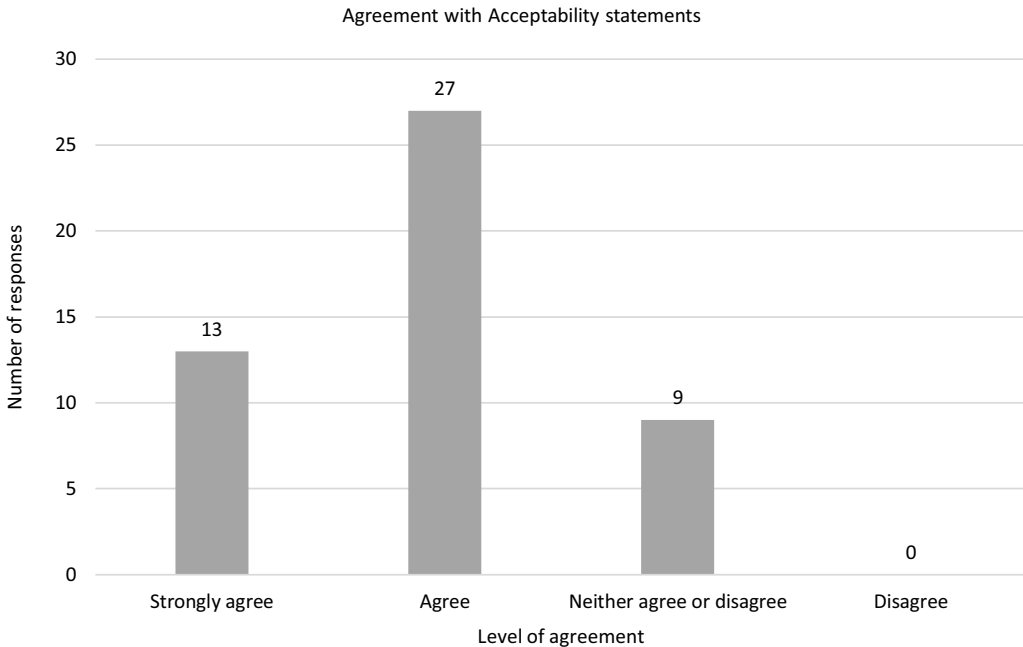


Figure 4. Responses to acceptability questions.

attractive, 38 (72%) found the graphics pleasing and liked the colours used and 42 (79%) felt there was a good balance between text and graphics (Table 3).

Most participants (27; 87%) thought the graphics were good, although four users (all without a visible difference) reported that the graphics (some of the images) were ‘distracting’. These were illustrations of people with visible differences. Most participants (26) enjoyed the mix of illustrations of individuals with visible differences and images of real people, describing them as relatable and a good visual aid, as well as bringing added interest and appeal to a wide age range. The illustrations helped to increase the friendly tone and made it easier to identify a visible difference, but one of the participants in Study 2 (one of the four mentioned above) questioned the appropriateness of using illustrations for an older adult population. Another participant in Stage 1 stated that the graphics helped them navigate through the program. They also enjoyed that the graphics broke up the text, with one participant in Stage 1 particularly noting that the program showed a range of visible differences and a range of attractive and unattractive people rather than only showing images of extremely beautiful or extremely disfigured people (Table 3).

One participant out of the 28 (4%) represented in Stages 1 and 2 found the colour scheme too bland and suggested making it more eye-catching. The majority (22; 79%) of the participants found the homepage and general graphics used on the site calming and gentle and in keeping with the tone of the program. It is important to note that the colour scheme was based on a previous usability assessment conducted with participants during the original Face IT user feedback study (Bessell *et al.*, 2010).

The program featured a serif, informal font in the headings for some of the pages (known as ‘Brush Script’) which again divided participants. Seven participants in Stages 1 and 2 specifically mentioned that the font was fun, but the remaining were concerned over its clarity. Two participants described it as childish and not fitting with the seriousness of the program. As the majority of participants disliked this font, it was changed to make it less childish but still

Table 3. Theme 2 quotes from participants

Theme	Quotation
Acceptability Subtheme: Graphics	<p>'Yeah, mm. I think it's better to use cartoons on these ones because ... I think you – you can er express it easier.' Study 2 P3 (female, 21 years)</p> <p>'Yeah it's nice that it's a real person just so it's almost like they can relate to it.' Study 2 P5 (female, 27 years)</p> <p>'I guess it appeals to like different ages so it's probably good that they've got two different things.' Study 2 P8 (female, 19 years)</p> <p>'Um, I think it – it kind of, it kind of illuminated things so you kind of know where you need to go and where and I also, I – I just think it's better to have graphics than just having text in front of you.' Study 1 P12 (female, 22 years)</p> <p>'the only thing was the colour. Erm, I think it was very visually appealing but I'm not sure if I would do a little bit more in terms of making it more attractive rather than just it being blue and white.' Study 1 P13 (female, 18 years)</p> <p>'Some people might find it hard to read ... because it's quite close together, because it's like joined.' Study 2 P2 (female, 20 years)</p> <p>'I think maybe the font could be a little bit more clearer ... although it's quite, I like – like I think it's quite good in the like you know th-the header and stuff.' Study 2 P4 (female, 23 years)</p>
Acceptability Subtheme: Structure	<p>'Because at each, at each step erm there was the – the information, the introduction, the lead in and then there was the feeling that you always had the choice.' Study 1, P4 (female, 21 years)</p> <p>'I think it all made sense. I – I don't think there was anything that was kind of, um, there was at no point was I thinking well that doesn't need to be there or anything and I think it all kind of joined in together.' Study 1, P3 (female, 36 years)</p> <p>'Because at each, at each step erm there was the – the information, the introduction, the lead in and then there was the feeling that you always had the choice.' Study 1, P4 (female, 21 years)</p>
Acceptability Subtheme: Content	<p>'I thought it was very acceptable. It was put in a – a very succinct, inoffensive way.' Study 1 P1 (female, 38 years)</p> <p>'I don't find any of it sort of offensive or it was quite straightforward.' Study 1 P6 (male, 28 years)</p> <p>'and it kind of made me smile because I knew that whoever's written this knew, have an empathy and wanted to give me tools to help.' Study 1 P3 (female, 31 years)</p> <p>'I think that yeah I think that it will be widely accepted by people who are quite vulnerable when it comes to seen conditions.' Study 1 P6 (male, 28 years)</p> <p>'I think it would be good for someone ... if you struggle to leave the house I think it's a good place to start' Study 2 P3 (female, 21 years)</p> <p>'I need a tool to help me get through today, I would have went on this site if it was available last year.' Study 2 P3 (female, 36 years)</p> <p>'very uplifting it gives you a lot of information, erm, very thought-provoking scenarios as well, erm, get the clients thinking about erm obviously being different and reacting to, you know, how people are speaking to you ...' Study 2 P3 (female, 28 years)</p> <p>'One other thing that is very important is that behind this programme they are actually qualified people ...' Study 2 P4 (female, 23 years)</p>

informal in feel (using 'Hand of Sean' font type) and this was received well in Stage 3 with no participants disliking the font (Table 3).

Subtheme: Structure

In Study 3, 45 respondents (85%) felt the structure of the program was appropriate and 43 (81%) thought that it was suitable. Most participants concluded that the structure made sense and was well laid out, with only one from Stage 1 disagreeing and one from Stage 2 stating a preference from more mouse clicking and less scrolling (however, the program was specifically designed to minimise mouse clicking; Bessell *et al.*, 2010). One participant from Stage 1 commented that the beginning of the program started with a negative tone about the difficulties of living with visible difference, but quickly changed to a positive stance that they found engaging, and inspired them to keep reading (Table 3).

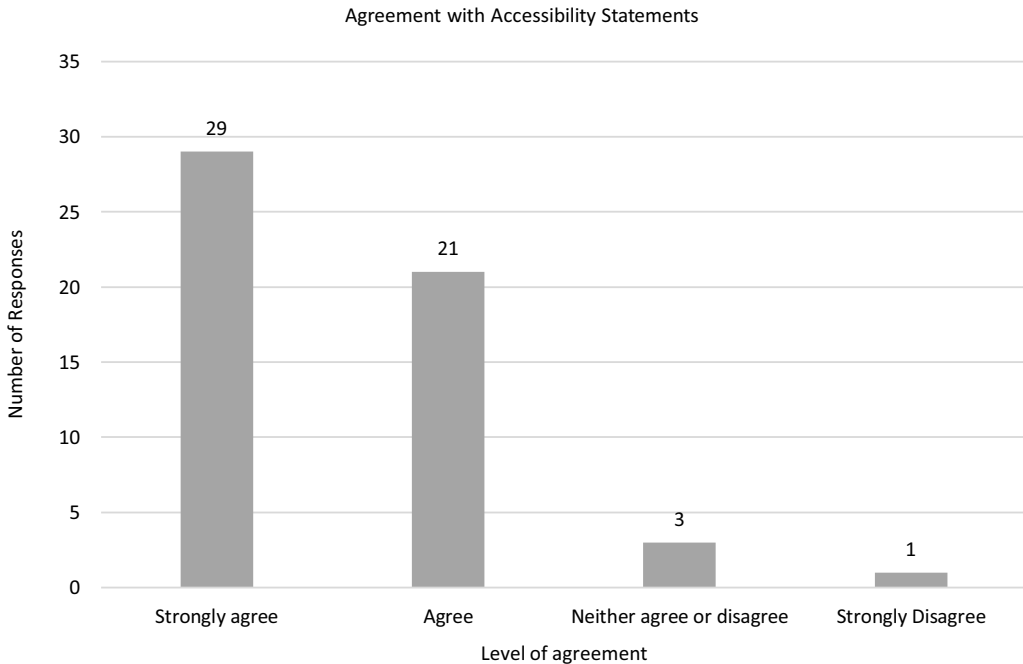


Figure 5. Responses to accessibility questions.

Subtheme: Content

Forty-three respondents (81%) agreed or strongly agreed that the content was useful, 47 (89%) found it easy to understand and a further 41 (77%) thought the content was provided in a suitable manner and that the style was appropriate (47; 89%). Participants thought the content was ‘inoffensive and refreshing’, ‘interesting’, ‘engaging’, ‘informative and friendly’ with ‘easy to understand language’ and acceptable and relatable themes. However, two participants in Stage 2 (neither of whom had a visible difference) thought that there was too much content in sessions 3, 5 and 6 particularly. Participants in Stage 1 said the examples used to illustrate certain elements of the intervention were realistic and relatable, and showed an understanding of the experiences of people with visible differences.

The model of intervention was praised by participants for being ‘supportive’, ‘empathetic’ and ‘sensitive’ where being sufficiently ‘motivational’ and ‘skills-based’ in the approach.

The program also featured interactive tools, such as an online journal – something participants enjoyed. They also seemed to enjoy the audio playback facility, the reminder feature and the forum. One participant from Stage 1 felt that the content was ‘too generic’ and not ‘relevant for my condition’, but they acknowledged the difficulties in making the content more specific. Another suggestion was to create a translation tool for foreign users.

Theme 3: Accessibility

Overall, participants thought the program would be very accessible with 49 (92%) participants agreeing or strongly agreeing to this in Stage 3 (see Fig. 5). Participants discussed the accessibility of Face IT@home. This theme related to the ability of the program to reach more adults with visible differences and reduce the difficulties associated with access to intervention. The accessibility of Face IT@home was linked to the platform the program sits on and the security of the site.

Table 4. Theme 3 quotes from participants

Theme	Quotation
Accessibility Subtheme: Platform	<p><i>'Yeah I mean I think it's very very accessible for people that ... know how to use the internet.'</i> Study 1 P4 (female, 23 years)</p> <p><i>'there's no time limit ... I don't have to do it in an hour... er so I really could sit there and if it was two o'clock in the morning I thought gee it just - I can't stop my head ... b and I could have accessed that programme ... just to get a little support.'</i> Study 2 P14 (female, 18 years)</p> <p><i>'I think it will be really really popular, especially for those who are a little bit vulnerable, erm, who are struggling with self-acceptance and might find it difficult to think positively about erm their condition.'</i> Study 2 P10 (male, 27 years)</p>

Subtheme: Platform

In Study 3, 47 respondents (89%) felt that the platform was appropriate and 49 (92%) felt it was an efficient way of providing support. Most participants (47; 89%) found that the internet-based platform ensured easily accessible support 24/7. Another participant highlighted that the lack of time constraints for completing sessions made the program accessible, particularly for those who needed plenty of time to work through the material. Seven participants (13%) specifically highlighted that the internet was more accessible than GP services, and stressed the benefit of its anonymity, allowing users to consider their issues in private without the embarrassment or shame that might arise from sharing them in a face-to-face meeting (3; 6%). The forum feature was positively regarded and seen as an opportunity for users to talk to others who relate to them and not feel isolated (Table 4). Participants agreed that the program would be very popular if people were aware of it but there were concerns about how to publicise it to ensure people know where to find it.

Subtheme 2: Security

The program requires that users have their own username and password to access the therapeutic content and can only view their own responses to interactive activities. Users are required to read and agree to 'forum rules' before accessing the forum, to limit bad practice. However, one participant was concerned that the forum (which is not moderated) would provide users with access to potentially vulnerable users: *'It's open to abuse er you know because already a lot of people can say certain things about them'*, which could pose a risk.

Discussion

This study assessed the acceptability and usability of Face IT@home, an online psychosocial intervention for adults with visible differences designed to be completed independently without facilitation. Face IT@home was found to be both acceptable and usable; participants felt that it was a useful tool that offered a valuable intervention in an easy-to-use format, it would be suitable for real-world users, and would be well-received. Participants suggested changes to make Face IT@home more acceptable, some of which were made during the usability testing process and others have been addressed subsequently. Overall Face IT@home was found to be 'fit for purpose', a key principle of usability testing (Williams, 2004).

Participants found the content of the program in terms of the model of intervention and the language used to be acceptable. They also identified that the program would be appropriate for a wide range of individuals, Face IT@home is designed to be used flexibly, according to the needs of the user, and is appropriate for use with minimal or no clinical supervision. Minimal supervision would include short telephone consultations with trained staff. Used via primary care, Face IT@home is suitable for those with low- to mid-level psychosocial distress who may not need referral to secondary healthcare services. Within secondary care specialist services (e.g. craniofacial, dermatology, plastics and burns

service), it can provide clinicians with a standardised appearance-specific program that forms part of their toolbox of resources. These elements are all in keeping with the new 'digital first' proposals within the UK's NHS (Donnelly, 2019). In cases that require minimal supervision, Face IT@home enables clinicians to provide telephone-based, remote support rather than face-to-face intervention. This is time and cost efficient and particularly useful for users from rural areas where there may not be access to services (Norman and Moss, 2015).

Following the launch of Face IT@home, the authors will continue to collect usability and acceptability data from users, as well as effectiveness data comparing the impact of minimal and no clinical supervision when completed by users at home. Although there is a need to improve access to services, it is imperative that this aspect of Face IT@home is monitored to ensure evidence-based practice (Norman and Moss, 2015). This continuing evaluation will be done through providing free access to the program via charitable organisations and collecting ongoing outcome data using the in-built questionnaires within the Face IT@home tool and through pre- and post-assessment using the Derriford Appearance Scale-24 (Carr *et al.*, 2005). Qualitative feedback on user experiences will also be collected through the comments sections embedded within the site.

Clinicians will be able to continue to supervise and support users as they complete Face IT@home. Additionally, the self-help element allows Face IT@home to be provided as part of a stepped-care model of psychosocial support for adults with appearance-related distress (Bessell *et al.*, 2012b). As such, we are aiming to provide users with access to the program via referral from both secondary and primary healthcare providers, through charitable organisations, or through self-referral.

Limitations

This study has limitations. It used a small, self-selected sample; some of whom (three participants in Stage 1) were involved in the development and evaluation of Face IT. These individuals may have been biased in their assessment because they are invested in its success. Whilst this is possible, participants did not appear reticent in providing critical feedback. Overall, users were positive about the usability of Face IT@home.

Male individuals with visible differences were under-represented in the current study. This is not unusual in psychology-based studies that often find it difficult to recruit men. This does have possible implications for how acceptable the program may be to males with visible differences. However, previous studies have found that men often interact well with online interventions (Sullivan, 2003), and this was the experience of the research team evaluating the original version of Face IT, which had more male participants who showed similar positive outcomes following intervention (Bessell *et al.*, 2012a).

While the study did include two individuals with motor impairments and three individuals with sight loss, most individuals within the study did not report having additional disabilities that co-occurred with their visible difference. Therefore, wider user-testing is required to ensure the accessibility of Face IT@home for these individuals and for those with cognitive impairments or learning disabilities.

A further limitation of the study was the use of wider users other than those for which the program was intended. This was done in order to test the basic usability elements of the Face IT@home program and was a response to difficulties recruiting individuals with visible differences. While those with visible differences were included mainly to assess user interface factors, it would have been preferable to have been able to test the Face IT@home tool with a wider sample of individuals with visible differences. Gaining usability feedback using a range of individuals using a variety of usability assessment strategies is good practice in usability testing procedures (Maramba *et al.*, 2019; Smilowitz *et al.*, 1994). However, wider testing of the content of the program with the target population will be required within a real-world setting to ensure the suitability of the program to service users.

Finally, while CBT-based interventions have shown promise with individuals with visible difference (Muftin and Thompson, 2013; Norman and Moss, 2015), they are not without their limitations. While the Face IT model has adapted CBT-based approaches for social anxiety to incorporate elements that directly target feelings of shame and stigma and help to validate the very real presence of discrimination from others, CBT is still fundamentally based on the premise of challenging unhelpful or ‘faulty’ thoughts. This can be challenging for individuals who have been victims of prejudice and discrimination as it can undermine these experiences. Therefore, while CBT-based approaches still have their place, work is also needed to further develop third wave models of intervention, such as ACT and compassion-focused therapy, that may sit more comfortably with some individuals with visible differences (Kelly *et al.*, 2009; Zucchelli *et al.*, 2018).

Conclusion

Face IT@home is an online self-help support tool for adults with visible difference based on an integrated CBT and social skills model. In this extensive user-evaluation study, it has been found to be highly usable and acceptable for use in the real-world setting. It is hoped that Face IT@home will provide effective and timely support to adults with visible differences without the need for a lengthy referral process.

Key practice points

- (1) The cognitive behavioural model outlined in this paper provides a therapeutic framework for CBT practitioners working with those with visible difference.
- (2) CBT therapists are increasingly moving to online methods of delivery and this paper highlights the importance of user involvement in the development of such tools.
- (3) Face IT@home has previously been found to be an effective tool for supporting adults with visible difference. The further development of this tool into a self-help intervention allows CBT practitioners to support clients through referral to the program or as an adjunct to therapy.

Further reading

For those practitioners with a special interest in learning more about using CBT or third wave CBT-based approaches with clients with visible difference:

- Clarke, A., Thompson, A. R., Jenkinson, E., Rumsey, N., & Newell, R. (2013). *CBT for Appearance Anxiety: Psychosocial Interventions for Anxiety due to Visible Difference*. John Wiley & Sons.
- Hanson, W. E., Creswell, J. W., Clark, V. L. P., Petska, K. S., & Creswell, J. D. (2005). Mixed methods research designs in counseling psychology. *Journal of Counseling Psychology*, 52, 224.
- Zucchelli, F., Donnelly, O., Williamson, H., & Hooper, N. (2018). Acceptance and commitment therapy for people experiencing appearance-related distress associated with a visible difference: a rationale and review of relevant research. *Journal of Cognitive Psychotherapy*, 32, 171–183.

Data availability statement. The data that support the findings of this study are available on request from the corresponding author (A.N.). The data are not publicly available due to their containing information that could compromise the privacy of research participants.

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analysis (supporting), Methodology (supporting), Project administration (supporting), Validation (supporting), Writing – review & editing (supporting).

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