



# Educating patients about Internet-delivered cognitive behaviour therapy: Perceptions among treatment seekers and non-treatment seekers before and after viewing an educational video



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## ABSTRACT

Internet-delivered cognitive behaviour therapy (ICBT) is an efficacious, yet novel approach to the treatment of depression and anxiety. It has the potential to improve access to evidenced-based care, but only if potential patients are aware of, understand, and have positive expectations about this treatment. In order to establish whether the use of an educational video could improve favourable expectations of ICBT, two studies were conducted. The goal of the first study was to determine whether an educational video would improve perceptions of ICBT among individuals seeking ICBT treatment and to determine what type of information (client testimonials versus statistical information related to outcomes) facilitates the greatest increase in positive expectations of ICBT. Participants who visited an ICBT service ( $N = 71$ ) website were invited to first complete brief questionnaires assessing initial perceptions of ICBT. They were then randomly assigned to watch one of two videos containing either client testimonials ( $n = 32$ ) or statistical information related to outcomes ( $n = 39$ ). Patient perceptions of ICBT were then reassessed. Perceptions of ICBT were significantly higher post-video than pre-video and the type of information did not impact perceptions of ICBT. In the second study, the research was extended by examining perceptions of ICBT before and after watching an educational video (including both statistical and narrative information as this had no impact on perceptions) in a sample of individuals ( $N = 94$ ) who were experiencing anxiety and depression but were not specifically seeking ICBT. As with treatment seekers, perceptions of ICBT were significantly higher post-video than pre-video. Comparison of the treatment and non-treatment seekers revealed no differences in perceptions of ICBT between the samples. The findings suggest that educational videos are an effective way to increase expectations of ICBT. Future directions for research are described.

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## 1. Introduction

Despite anxiety and depression being prevalent, chronic, and disabling conditions (Kessler et al., 2005), the treatment gap is pronounced, with a notable lack of widespread access to evidence-based psychological services (McHugh and Barlow, 2010). Treatment barriers significantly contribute to the under-treatment of mental health disorders and include geographical constraints, time limitations, mobility issues, and fear of stigma associated with mental disorders (Andrade et al., 2014).

Internet-delivered cognitive behaviour therapy (ICBT) is an innovative approach to disseminating evidence-based care that has the potential to improve accessibility to mental health services. A parallel protocol to traditional cognitive behaviour therapy (CBT) is employed in ICBT,

with the major difference being that treatment is provided over the Internet as compared to in-person (Andersson et al., 2014). When ICBT is combined with support from a therapist in the form of telephone or email contact, significant improvements in symptoms result (Hedman et al., 2012b) and are comparable to face-to-face CBT (Andersson et al., 2014). Barriers to in-person service access appear to be mitigated through implementing ICBT as patients are able to engage in treatment at convenient times and in a comfortable, private, accessible location (Wootton et al., 2016).

While research supports the efficacy of ICBT, there is evidence to suggest that perceptions of the service are negative or neutral at best (Carper et al., 2013) and that individuals express concern about Internet-delivered care, including confidentiality and data security (Klein and Cook, 2010). Among treatment seeking (Berle et al., 2015) and non-treatment seeking (Gun et al., 2011; Klein and Cook, 2010; Tarrier et al., 2006) samples, face-to-face interventions are consistently selected as the treatment of choice for anxiety and depression relative to

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Internet-based therapies. In a recent study, for example, Musiat et al. (2014) found that face-to-face treatments were rated by a convenience sample from the general population as more likely to meet their perceived treatment needs (e.g., helpfulness, credibility) in comparison to computerized interventions. The relatively new emergence of ICBT has contributed to a lack of public knowledge regarding this treatment option (Mitchell and Gordon, 2007). Limited prior knowledge of ICBT has been found to correspond with low adoption rates of the service (Carper et al., 2013), emphasizing the role of education as a tool for increasing knowledge of and interest in ICBT. Consistent with this call for research, Mitchell and Gordon (2007) had university students, with no prior experience with ICBT, rate treatment expectancy and credibility before and after watching a 30-minute in person demonstration of the service. Ratings of ICBT were initially quite low and increased significantly after the demonstration. The finding that education can positively impact patient perceptions is important as there is evidence to suggest that perceptions of treatment credibility and of expectancy outcome can affect symptom improvement. For instance, Hedman et al. (2012a) demonstrated that higher expectancy of ICBT at pre-treatment was a stable predictor of better clinical outcomes among a sample of individuals with social anxiety. Similarly, credibility ratings predicted which patients experienced greater improvements in symptoms of health anxiety following ICBT (Hedman et al., 2015).

As treatment expectations and credibility are predictors of better clinical outcomes (Constantino et al., 2011), there is a need to develop brief, but effective strategies to maximize favourable expectations of ICBT. Video-based educational tools appear to be effective at conveying new information to target populations about various health topics (for a review see Tuong et al., 2014). Relative to print-based media, videos possess numerous advantages, including affording individuals an opportunity to view multi-step procedures, to learn new material without solely relying on reading abilities, and to receive consistent and engaging information (Wilson and Wolf, 2009; Wilson et al., 2012).

To contribute to the literature, we conducted two studies. In the first study, we explored perceptions of ICBT before and after watching an educational video among individuals seeking this treatment option. In this study, we explored whether perceptions of ICBT were different when participants were presented with patient testimonies as compared to statistical information. Patient testimonies have been found to be more influential than statistical information (e.g., Borgida and Nisbett, 1977; Ubel et al., 2001) and, thus, we sought to determine whether changes in perceptions differed as a function of the type of information presented in the video. In the second study, we extended the research by examining perceptions of ICBT before and after watching an educational video in a sample of individuals who were experiencing anxiety and depression, but were not specifically seeking ICBT. This second study was felt to be important for establishing the generalizability of the findings from study 1 as perceptions of online treatment seekers may be more positive than those of individuals not specifically seeking online treatment.

## 2. Study 1

### 2.1. Methods

#### 2.1.1. Participants

Participants were 71 individuals who were visitors to an ICBT website, known as the Online Therapy Unit for Service Education and Research ([www.onlinetherapyuser.ca](http://www.onlinetherapyuser.ca)). Individuals who visit the website typically learn of ICBT through various sources (e.g., family physicians, word of mouth, media). To be eligible for the study, participants had to visit the website, be at least 18 years old, have access to a computer and the Internet, and self-identify as having problems with depression and anxiety.

### 2.1.2. Measures

**2.1.2.1. Demographic questionnaire.** Participants provided demographic information about age, gender, location and size of residence, highest level of education attained, and previous mental health treatment use.

**2.1.2.2. The Credibility and Expectancy Questionnaire (CEQ; Devilly and Borkovec, 2000).** The CEQ consists of six items, with half the items measuring Credibility of ICBT and other items measuring Expectancy of outcomes related to ICBT. Subscale scores range from 3 to 27, with higher scores indicating greater credibility and expectancy. Participants were administered the CEQ at two time points: pre- and post-video. The CEQ has demonstrated high internal consistency and good test-retest reliability (Devilly and Borkovec, 2000).

**2.1.2.3. Interest in ICBT.** Additional questions were asked pre- and post-video to gauge interest in ICBT. First, participants rated the extent to which they agreed that ICBT was an important service to offer in Saskatchewan and that ICBT was a helpful treatment for depression and anxiety. Responses were rated on 5-point Likert scale from 1 (“Strongly disagree”) to 5 (“Strongly agree”). Second, participants rated their interest in completing an online screening to determine appropriateness for ICBT and their intention to try ICBT on a 10-point Likert scale (1 = “No interest” and 10 = “Extreme interest”).

**2.1.2.4. Video evaluation.** Using a 5-point Likert scale (1 = “Very poor” and 5 = “Excellent”), participants rated the quality of the video on: clarity, organization, visual appeal, pace, usefulness of information, provision of new information, enhancing understating of ICBT, creating interest in ICBT, and overall impression.

#### 2.1.3. Materials

A testimonial- and statistically-based video were developed via VideoScribe for the current study. The videos were modified versions of a pilot educational video that was initially reviewed by a sample of 176 individuals with self-identified mental health concerns. Based on patient feedback, changes to the videos were made in order to ensure clarity.

Both videos described an ICBT program for depression and anxiety offered by the Unit, called the Wellbeing Course (WBC; Titov et al., 2010). The videos shared several features of ICBT, including: (1) nature of the WBC and past research evidence in support of the WBC, (2) eligibility criteria of the WBC (e.g., 18 years of age, symptoms of depression and anxiety), (3) ineligibility criteria of the WBC (e.g., high risk of suicide, experiencing psychosis), (4) steps on gaining access to this program, and (5) limits of confidentiality. The videos differed in the type of information presented related to outcomes. The testimonial-based video included quotes from past patients who completed the course, each exhibiting a positive experience taking part in the WBC. Conversely, the statistically-based video included data from previous patients of the WBC in the form of statistics demonstrating patient improvements as a result of this service (e.g., patients have experienced significant decreases in symptoms of depression). Both of the videos were under five minutes in length and were narrated by a male voice.

#### 2.1.4. Procedure

Any visitor to [www.onlinetherapyuser.ca](http://www.onlinetherapyuser.ca) between January and April 2014 who met the inclusion criteria was invited to participate. Upon clicking the link on the website, participants were directed to a survey hosting website ([www.qualtrics.com](http://www.qualtrics.com)). Participants were presented with a battery of questionnaires, including a demographic questionnaire, the CEQ, and questions assessing interest in ICBT. Participants were then automatically randomly assigned to watch either the testimonial-based ( $n = 32$ ) or the statistically-based ( $n = 39$ ) video. Participants were subsequently re-administered the CEQ and questions regarding interest in ICBT as well as questions assessing the quality of

the video. This project received ethical approval from the Research Ethics Board at the University of Regina.

### 2.1.5. Statistical analysis

Descriptive statistics were examined to obtain the clinical characteristics of the sample and evaluate the perceived quality of the video. A series of independent samples t-tests were conducted as follow-up to explore potential differences between conditions on video ratings (i.e., testimonial, statistical). A series of mixed model analysis of variance (ANOVA) were conducted to explore if perceptions of ICBT changed over time and across conditions. The between-subject factor was condition (i.e., testimonial, statistical) and the within-subject factor was time (i.e., pre-, post-video). Sample characteristics were explored for potential correlations with participants' post-video credibility and expectancy scores.

## 2.2. Results

### 2.2.1. Participant background

Table 1 depicts participant characteristics by condition (i.e., testimonial versus statistical). On average, participants were females and in their mid-thirties. The majority of the sample was from Western Canada (i.e., British Columbia, Alberta, Saskatchewan, and Manitoba). The majority of participants reported previously or currently taking medication (76.1%) and receiving face-to-face therapy (70.4%) for their mental health difficulties. A minority of participants indicated previously or currently receiving therapy over the Internet (2.8%). Participants self-reported limited initial knowledge about ICBT ( $M = 3.58$  out of 10, with higher scores representing greater knowledge). There were no statistically significant differences between groups on

**Table 1**  
Study 1 and Study 2 participant background characteristics.

Variable	Study 1 <sup>a</sup>		Study 2 (N = 94)	
	Statistical (n = 39)	Testimonial (n = 32)		
Age				
Mean (SD)	36.13 (15.77)	35.81 (11.46)	45.63	(13.60)
Initial knowledge of ICBT				
Mean (SD)	3.67 (2.29) <sup>b</sup>	3.47 (2.70) <sup>b</sup>	1.73	(1.07) <sup>c</sup>
	n	%	n	%
Sex				
Women	29	74.36	19	59.38
Men	10	25.64	12	37.5
No response	0	0	1	3.12
	0	0	0	0
Education				
Less than high school degree	4	10.26	1	3.13
High school degree	9	23.08	6	18.75
College or some university	11	28.21	15	46.88
Complete university education	14	35.90	10	31.25
No response	1	2.56	0	0
Location of residence				
Western Canada	35	89.8	31	96.88
Eastern Canada	2	5.1	0	0
No response	2	5.1	1	3.12
	0	0	0	0
Size of location				
Rural location	13	33.33	9	28.12
Small city (10,000–40,000)	3	7.69	11	34.43
Medium city (40,001–200,000)	8	20.5	6	18.75
Large city (>200,000)	15	38.5	6	18.75
No response	0	0	0	0
Previous treatment				
Medication	26	66.67	28	87.5
Face-to-face therapy	25	64.10	25	78.13
Internet therapy	0	0	2	6.25
	0	0	0	0

ICBT = Internet-delivered cognitive behaviour therapy; SD = standard deviation.  
<sup>a</sup> There were no statistically significant differences between categorical and continuous variables.  
<sup>b</sup> These questions rated on a 1–10 scale; higher scores represent higher quality.  
<sup>c</sup> These questions rated on a 1–5 scale; higher scores represent higher quality.

categorical or continuous variables as assessed by chi-square analyses and t-tests, respectively.

### 2.2.2. Video evaluation

Prior to examining ratings of ICBT, participants rated the quality of the video. As seen in Table 2, both the testimonial- and statistical-based videos were rated highly. Condition means on all items was 3.67 or higher (1 = “Very poor” and 5 = “Excellent”). A series of independent sample t-tests revealed no statistically significant differences between conditions on video ratings.

### 2.2.3. Expectancy and credibility scores

Examining credibility scores, a mixed ANOVA revealed a statistically significant main effect for time,  $F(1,67) = 17.89, p < 0.001, \eta_p^2 = 0.211$ , with post-video scores being significantly higher than pre-video scores. Similarly, examining expectancy scores, a mixed ANOVA revealed a statistically significant main effect for time,  $F(1,67) = 10.36, p < 0.005, \eta_p^2 = 0.134$ , with post-video scores being significantly higher than pre-video scores. No main effects for condition or interactions between time and condition were found ( $p$  range: 0.205–0.870). As depicted in Table 3, credibility and expectancy scores were reasonably high prior to treatment but improved with treatment.

### 2.2.4. Changes in ICBT interest

Examining ratings of ICBT importance, a mixed ANOVA revealed a statistically significant main effect for time,  $F(1,69) = 25.86, p < 0.001, \eta_p^2 = 0.273$ , with post-video ratings indicating significantly higher ratings than pre-video scores. Similarly, a mixed model ANOVA examining potential participants' ratings of helpfulness of ICBT for anxiety and depression revealed a statistically significant main effect for time,  $F(1,69) = 39.47, p < 0.001, \eta_p^2 = 0.364$ , with post-video ratings indicating significantly higher ratings than pre-video scores. No main effects for condition or interactions between time and condition were found ( $p$  range: 0.197–0.492).

A mixed ANOVA exploring interest in taking part in a screening process for ICBT revealed a statistically significant main effect for time,  $F(1,66) = 30.59, p < 0.001, \eta_p^2 = 0.317$ , with post-video ratings indicating a significantly higher interest in completing a screen than pre-video scores. In contrast, a mixed ANOVA examining participants' interest in completing ICBT as a treatment revealed no significant change in interest from pre- to post-video,  $F(1,68) = 0.000$ . In both cases, no main effects for condition or interactions between time and condition were found ( $p$  range: 0.063–0.738). As exhibited in Table 2, participants had a very strong interest in taking the screening for ICBT and this increased over time. Both before and after watching the video, interest in participating in ICBT was very strong in this sample.

**Table 2**  
Study 1 and Study 2 video evaluation scores.

Variable <sup>a</sup>	Study 1		Study 2 (N = 94)		
	Statistical (n = 39)	Testimonial (n = 32)	t	df	p
	M (SD)	M (SD)			
Clarity of information	4.05 (0.97)	3.94 (0.72)	0.552	68	0.58
New information	3.92 (0.78)	3.94 (0.89)	−0.071	67	0.94
Useful information	3.90 (0.82)	4.06 (0.77)	−0.869	68	0.38
Understand ICBT	3.67 (0.98)	3.90 (0.87)	−1.052	68	0.29
Organization of video	4.08 (0.80)	4.00 (0.77)	0.403	68	0.68
Visual appeal of video	4.03 (0.94)	3.74 (0.89)	1.275	67	0.20
Pace of video	3.95 (0.94)	3.90 (0.83)	0.211	68	0.83
Impression of video	4.00 (0.82)	4.00 (0.91)	0.000	69	1.00

ICBT = Internet-delivered cognitive behaviour therapy; M = mean; SD = standard deviation.  
<sup>a</sup> Quality of video questions rated on a 1–5 scale; higher scores represent higher quality.

**Table 3**  
Study 1 and Study 2 perceptions of ICBT.

Variable	Study 1 <sup>d</sup>				Study 2 (N = 94)	
	Statistical (n = 39)		Testimonial (n = 32)		Pre-video M (SD)	Post-video M (SD)
	Pre-video	Post-video	Pre-video	Post-video		
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
CEQ credibility subscale <sup>a</sup>	19.02 (4.76)	21.51 (4.90)	19.15 (5.95)	20.53 (6.54)**	18.14 (6.58)	20.93 (5.57)**
CEQ expectancy subscale <sup>a</sup>	16.72 (5.38)	18.04 (6.16)	16.32 (5.41)	17.61 (6.16)*	15.53 (5.77)	17.80 (6.05)**
Importance of ICBT <sup>b</sup>	4.18 (0.79)	4.49 (0.64)	4.22 (0.70)	4.69 (0.53)**	3.74 (1.05)	4.32 (0.81)**
Helpfulness of ICBT <sup>b</sup>	4.03 (0.77)	4.44 (0.64)	3.81 (0.82)	4.44 (0.66)**	3.78 (0.92)	4.28 (0.78)**
Interest in screener <sup>c</sup>	7.78 (2.66)	9.28 (2.53)	9.00 (1.36)	9.97 (1.90)**	7.68 (2.70)	8.10 (2.74)**
Interest in ICBT <sup>c</sup>	8.10 (2.65)	9.46 (2.11)	8.68 (2.19)	9.97 (1.85)	7.60 (2.70)	8.09 (2.74)*

ICBT = Internet-delivered cognitive behaviour therapy; CEQ = Credibility and Expectancy Questionnaire; M = mean; SD = standard deviation. \* $p < 0.01$ , \*\* $p < 0.001$ .

<sup>a</sup> These subscales range in total scores from 3 to 27; higher scores represent greater credibility and expectancy, respectively.

<sup>b</sup> These questions rated on a 1–5 scale; higher scores signify greater agreement.

<sup>c</sup> These questions rated on a 1–10 scale; higher scores represent greater interest.

<sup>d</sup> No main effects for condition or interactions between time and condition were found; significance values represent statistically significant main effects for time from pre- to post-video.

### 2.2.5. Relationship between sample characteristics and ratings of ICBT

Correlation analyses were conducted in order to determine if perceptions of ICBT post-video were related to background characteristics, including age, sex, education (university education or not), location (large city or not), history of medication (current or past medication use), history of therapy (current or past therapy use), and initial knowledge of ICBT. As depicted in Table 4, no significant associations were observed between post-video credibility and expectancy scores and the aforementioned sample characteristics.

## 3. Study 2

### 3.1. Methods

#### 3.1.1. Participants

The sample consisted of 94 participant recruited through Qualtrics Panel System, an online survey platform that provides access to diverse groups of individuals who are interested in participating in research (Qualtrics, Provo, UT). Qualtrics Panel Systems randomly selected potential participants from their database using the following eligibility criteria: at least 18 years old, reside in Canada, have access to a computer and the Internet, and self-identify as having past or current symptoms of anxiety and depression on a dichotomous scale (“Yes” or “No”). Given that the WBC has demonstrated effectiveness with both subclinical and clinical samples (Hadjistavropoulos et al., 2014), we

did not require participants to have a diagnosis of anxiety and depression to participate in the study.

#### 3.1.2. Measures

Participants completed the same measures that were administered in Study 1 along with the following two measures designed to assess for severity of symptoms of anxiety and depression.

##### 3.1.2.1. The Generalized Anxiety Disorder-7 (GAD-7; Spitzer et al., 2006).

The GAD-7 assesses symptoms of general anxiety using seven statements (e.g., “Worrying too much about different things”). Each statement is rated on a scale from 0 (“Not at all sure”) to 3 (“Nearly every day”). Items are summed with a higher score representing more severe symptoms of generalized anxiety. The measure has strong psychometric properties (Spitzer et al., 2006; Kroenke et al., 2007).

##### 3.1.2.2. Patient Health Questionnaire-9 (PHQ-9; Kroenke et al., 2001).

The PHQ-9 measures symptoms of major depression using nine statements (e.g., “Little interest or pleasure in doing things”). Each statement is rated on a scale ranging from 0 (“Not at all”) to 3 (“Nearly every day”). Items are summed wherein a higher score represents more severe symptoms of major depression. The PHQ-9 has been found to have strong psychometric properties (Kroenke et al., 2001).

**Table 4**  
Correlates of credibility and expectancy scores in Study 1 and Study 2.

Variable	Study 1		Study 2	
	Credibility score	Expectancy score	Credibility score	Expectancy score
	Pearson correlation (r)	Pearson correlation (r)	Pearson correlation (r)	Pearson correlation (r)
Age	0.201	0.182	0.030	−0.042
Gender (female = 1; male = 2)	−0.048	0.081	−0.41	−0.126
Location of residence (population over 200,000 = 1; population under 200,000 = 2)	−0.39	−0.047	−0.030	−0.036
Highest level of education (no post-secondary education = 1; some post-secondary education = 2)	−0.082	−0.086	−0.062	−0.005
History of medication (past medication use = 1; no past medication use = 2)	−0.090	0.049	0.036	0.077
History of therapy (past therapy use = 1; no past therapy use = 2)	−0.189	0.018	0.022	0.151
Severity of depression (PHQ-9 total score)	–	–	0.140	0.105
Severity of anxiety (GAD-7 total score)	–	–	0.121	0.147
Knowledge of ICBT	.017 <sup>a</sup>	.033 <sup>a</sup>	.170 <sup>b</sup>	0.214 <sup>*b</sup>

PHQ-9 = Patient Health Questionnaire – 9 item; GAD-7 = Generalized Anxiety Disorder – 7 item; ICBT = Internet-delivered cognitive behaviour therapy.

Post-video credibility and expectancy scores were used. \* $p < 0.05$ .

<sup>a</sup> These questions rated on a 1–10 scale; higher scores represent greater knowledge.

<sup>b</sup> These questions rated on a 1–5 scale; higher scores signify greater knowledge.

### 3.1.3. Material

A similar video as was developed for Study 1 was used in Study 2. Given that type of information related to outcomes did not impact perceptions of ICBT, the previously described videos were amalgamated into a single video that included both testimonial and statistical information. The video was narrated by female and was 5-minutes in length.

### 3.1.4. Procedure

Respondents were invited through Qualtrics Panel System in November 2015 to participate in the study. The email invitation had a link to the online survey hosted by Qualtrics ([www.qualtrics.com](http://www.qualtrics.com)). As in Study 1, participants were presented with brief questionnaires (i.e., demographic questions, PHQ-9, GAD-7, CEQ, questions assessing interest in ICBT). Participants then watched the educational video and were re-administered the CEQ and questions assessing interest in ICBT as well as questions assessing the quality of the video. Participants were compensated \$1.00 for participation through Qualtrics Panel System. This project received ethical approval from the Research Ethics Board at the University of Regina.

### 3.1.5. Statistical analysis

Descriptive statistics were conducted to obtain the clinical characteristics of the sample and evaluate the perceived quality of the video. A series of paired samples *t*-tests were conducted to explore if perceptions of ICBT changed from pre- to post-video. Background variables were also examined for potential correlations with participants' post-video credibility and expectancy scores. In a supplementary analysis, mixed model ANOVAs were conducted in order to examine whether treatment seekers from study 1 and non-treatment seekers from study 2 differed in perceptions of ICBT from pre- to post-video.

## 3.2. Results

### 3.2.1. Baseline characteristics

Table 1 depicts background information on the participants. Participants ranged in age from 18 to 75, with a mean age of 45.63 ( $SD = 13.6$ ) years. Approximately three-quarters of the sample were female. The majority of participants reported residing in Eastern Canada (i.e., Ontario, Quebec, New Brunswick, Nova Scotia, or Newfoundland) and approximately half indicated living in a large city (i.e., population >200,000). The majority of participants reported previously (84%) or currently taking medication (72%) as well as previously receiving face-to-face therapy (81%) for their mental health difficulties. Conversely, a minority of the sample endorsed currently receiving face-to-face therapy (38.3%). The sample on average was experiencing moderate symptoms of anxiety and depression, as indicated by mean group scores on the GAD-7 ( $M = 11.11$ ;  $SD = 6.43$ ) and the PHQ-9 ( $M = 14.15$ ;  $SD = 7.69$ ).

### 3.2.2. Video evaluation scores

Before examining perceptions of ICBT, the video was rated on a number of characteristics. Means on all items assessing the quality of the video were 4.01 or higher (1 = "Very poor" and 5 = "Excellent"), indicating that perceptions of the video were high (see Table 2).

### 3.2.3. Changes in expectancy and credibility scores

A paired-samples *t*-test exploring participants' credibility scores from pre- to post-video revealed a statistically significant difference,  $t(93) = -6.475$ ,  $p < 0.000$ , with post-video scores being significantly higher than pre-video scores. Similarly, a paired-samples *t*-test exploring participants' expectancy scores from pre- to post-video revealed a statistically significant difference,  $t(93) = -6.536$ ,  $p < 0.000$ .

### 3.2.4. Changes in ICBT interest

A paired-samples *t*-test exploring participants' ratings of the importance of ICBT from pre- to post-video revealed a statistically significant difference,  $t(93) = -6.203$ ,  $p < 0.000$ , with post-video scores being

significantly higher. Similarly, examining helpfulness ratings of ICBT, a paired-samples *t*-test revealed a statistically significant difference,  $t(93) = -5.608$ ,  $p < 0.000$ . A paired-samples *t*-test exploring interest in participating in a screening from pre- to post-video revealed a statistically significant difference,  $t(93) = -2.724$ ,  $p < 0.01$ , with post-video scores being significantly higher than pre-video scores. Similarly, examining interest in completing ICBT ratings, a paired-samples *t*-test revealed a statistically significant difference,  $t(93) = -2.994$ ,  $p < 0.001$ .

### 3.2.5. Relationship between sample characteristics and ratings of ICBT

In addition to the sample characteristics described in Section 3.5 of Study 1, severity of depressive and anxiety symptoms were also examined for potential correlates of post-video credibility and expectancy scores. No significant associations were observed between post-video credibility and expectancy scores and the sample characteristics. That said, a positive association was found between expectancy scores and familiarity with ICBT (see Table 4).

### 3.2.6. Perceptions of ICBT in treatment and non-treatment seekers

Supplementary analyses were employed in order to explore whether credibility and expectancy scores of ICBT from pre- to post-video differed as a function of the treatment needs of the sample. Participants in Study 1 were operationally defined as treatment seekers for ICBT (collapsed for condition) whereas participants in Study 2 were considered non-treatment seekers. A mixed ANOVA revealed a statistically significant main effect for time, with post-video ratings indicating a significantly higher credibility,  $F(1,161) = 55.89$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.258$ , and expectancy,  $F(1,161) = 45.12$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.219$ , scores than pre-video scores. In both cases, no main effects for condition or interactions between time and condition were found ( $p$  range: 0.097–0.78). Both before and after watching the video, perceptions of ICBT were quite favourable across both samples.

## 4. Discussion

The implementation of an ICBT program as an alternative to face-to-face therapy for anxiety and depression overcomes treatment barriers (e.g., time constraints, stigma) that currently hinder access to psychological services (Andersson, 2010). Yet previous research indicates that lay individuals and potential users view this treatment poorly (Carper et al., 2013) and prefer face-to-face interventions (Berle et al., 2015; Gun et al., 2011; Klein and Cook, 2010). Given that positive perceptions of therapy are predictive of a better treatment outcome (Hedman et al., 2012a, 2015), discovering brief yet effective strategies to maximize favourable expectations of ICBT are warranted. Research indicates that educating individuals in person through a demonstration on what is typically expected in an ICBT program is an effective way to increase expectations of this novel treatment (Mitchell and Gordon, 2007). It is unclear, however, whether a brief video will result in similar improvement in perceptions of ICBT, whether certain types of information (statistical versus testimonial) will lead to a more significant increase in expectations, and whether the treatment needs of the sample has an effect on perceptions of ICBT. As such, two studies were conducted in order to address these questions.

### 4.1. Initial perceptions of ICBT

Results from the current studies indicate that initial perceptions of ICBT were quite favourable regardless of the treatment needs of the sample. Both treatment seekers and non-treatment seekers held positive initial views about the importance and efficacy of ICBT as a treatment for anxiety and depression. The findings are generally inconsistent with the literature as previous researchers have typically found perceptions of ICBT tend to be quite poor (Carper et al., 2013) and that face-to-face interventions are preferred (Berle et al., 2015; Gun et al., 2011; Klein and Cook, 2010). In contrast to the previous literature,

results of the current studies are in accordance with findings from Wootton et al. (2011), whom found that the majority of a sample of individuals with moderate to high levels of obsessive-compulsive symptoms indicated an interest in accessing therapy over the Internet. The recruitment method used by Wootton et al. (2011) was similar to that employed in Study 1, whereby visitors to a clinic website were invited to participate. It is possible that these individuals were actively searching for more information on this service and thus, already held more positive beliefs about ICBT. Alternatively, given that no sample differences on initial perceptions of ICBT were observed in the current studies, the reported differences found in the literature may be due to an increase in knowledge of Internet-based care. This is posited to impact the non-treatment seeking sample to a greater degree as expectancy scores post-video were positively associated with ICBT familiarity among this sample. According to Andersson (2010), perceptions of ICBT are purported to constantly change and, therefore, initial attitudes towards ICBT may be more favourable now as the research evidence in support of ICBT has grown.

#### 4.2. Impact of video on perceptions of ICBT

Results from the current studies suggest that an educational video can further increase positive perceptions of ICBT. These positive effects were observed regardless of the video type, as both the testimonial- and statistically-based videos led to significant increases in credibility and expectancy outcome ratings of ICBT as well as the perceived importance and helpfulness of the service. Such an increase in positive perceptions of ICBT was reported across the samples, indicating that video may be a valuable education tool for increasing favourable expectations among treatment seekers and non-treatment seekers. Nevertheless, the video did not significantly increase interest in ICBT participation among treatment seekers, which is likely due to initial interest being very strong in this sample. Conversely, interest in ICBT participation for the non-treatment seekers was significantly increased by the video, providing evidence to suggest that education may have more of a positive impact on those individuals who are experiencing symptoms of anxiety and depression but not necessarily seeking Internet-based care.

The finding that perceived credibility and expectations of ICBT can be increased through an educational video is consistent with previous research conducted by Mitchell and Gordon (2007), whom demonstrated a positive change in how a student sample viewed ICBT after observing the application of the program. While it appears that participants in Mitchell and Gordon's (2007) study experienced a greater increase in perceptions, this is likely due to participants in the current studies holding more positive initial beliefs of ICBT. Moreover, contrary to previous research that found patient testimonials to be more influential than statistical information (e.g., Borgida and Nisbett, 1977; Ubel et al., 2001) no condition differences were observed in the current study. It is possible that the videos developed for Study 1 may have not differed sufficiently to elicit a noticeable difference in participant ratings.

A brief educational video appears to have the capacity to improve perceptions of ICBT and foster patients' interest in the service. In accordance with these findings, Tuong et al. (2014) conducted a recent review examining the efficacy of video education in altering health behaviours and found that although improvements in health outcomes were not consistently observed, video-based education was efficacious in modifying certain behaviours (e.g., self-examination of breasts for lumps, complying with screenings for prostate cancer). Across the studies that found significant changes, Tuong et al. (2014) identified two relevant features of the videos that appear important for changing behaviour. First, Tuong et al. (2014) assert that message framing theory may contribute to the efficacy of video-based education as a facilitator in modifying health behaviours. Accordingly, the presentation of health-promoting information can focus on either the benefits (i.e., gain-framed) or the harmful effects (i.e., loss-framed) of a specific

behaviour (Van't Riet et al., 2014), with evidence suggesting that a gain-framed message is more persuasive than a loss-framed message (Bunge et al., 2009). Second, Tuong et al. (2014) posit that embedding a theoretical model within the video message may also be beneficial for changing behaviour. These findings provide a potential platform for what guidelines subsequent researchers should follow when developing educational videos aimed at altering behaviours and knowledge.

Although the goal of the current studies was not to promote changes in health-related behaviours, but rather to promote the use of ICBT, our educational videos did incorporate both elements outlined by Tuong et al. (2014). Firstly, the videos described the research on the benefits of receiving ICBT (i.e., symptom reduction), which is consistent with a gain-framed message (Bunge et al., 2009). Secondly, as discussed in the videos, the videos emphasized that ICBT is derived from a cognitive behavioural model, and highlighted that the treatment would focus on thoughts, feelings, and behaviours of depression and anxiety (Williams & Garland, 2002). Perhaps the elements of an effective video that are theorized to promote the modification of health behaviours may generalize to other video-based educational tools designed to promote mental health treatment, such as the videos employed in the current studies.

#### 4.3. Limitations and future directions

While the two videos in Study 1 differed slightly in that one contained testimonials and the other statistical information, the videos, nevertheless, contained a large amount of the same information. The lack of statistically significant differences in how ICBT was perceived between the video conditions may reflect that the videos were not sufficiently different. Future research may modify the testimonial- and statistically-based video to ensure salient differences between the two conditions exist and better assess for the impact of type of information on perceptions of ICBT. By having more prominent differences between the video conditions, it is possible that significant differences in perceptions of ICBT between the videos may emerge. In terms of other limitations, the goal of these studies was to assess patients' intent to engage in ICBT rather than actual engagement. It is, therefore, possible that the video could foster interest in ICBT but not necessarily enhance engagement. Future research is warranted in order to determine if a video-based educational tool can foster actual engagement in ICBT for anxiety and depression. In terms of the Study 2, it should be noted that we were interested in examining perceptions of ICBT among individuals who were not actively seeking ICBT. The opinions of this sample, however, may still be more positive about ICBT than if we had recruited individuals in a face-to-face clinic rather than through the Qualtrics Panel. Finally, while results from the present studies did not find an association between perceptions of ICBT and sample background characteristics, this may in part be due to a lack of diversity in the sample of participants for the present study. Future studies recruiting a diverse sample of participants are warranted in order to potentially identify correlates between individual characteristics and perceptions of ICBT.

#### 4.4. Conclusion

As research has indicated that positive expectations of therapy are linked to better treatment outcomes (Constantino et al., 2011), it follows that in order to maximize potential therapeutic benefits, clinicians should make attempts at increasing patient expectations. The studies provide evidence to suggest that an educational video is a valuable method of informing treatment-seeking and non-treatment seeking samples about the availability of ICBT. Video-based education, therefore, appears to be an effective method for conveying information about ICBT to target populations resulting in positive expectations regarding therapy. It is possible that broader dissemination of videos within the health care system (e.g., physician offices, pharmacies, hospitals) could enhance understanding of ICBT and foster interest among

potential users, regardless if they are specifically seeking treatment or not.

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