EXAMINING CHANGE IN HEALTH ANXIETY SYMPTOMS RESULTING FROM
TRANS DIAGNOSTIC, INTERNET-DELIVERED COGNITIVE BEHAVIOUR
THERAPY: THE IMPACT OF THERAPIST SUPPORT

A Thesis
Submitted to the Faculty of Graduate Studies and Research
In Partial Fulfillment of the Requirements
For the Degree of

Masters of Arts
in
Clinical Psychology
University of Regina

By
Victoria Ayla Mary Owens
Regina, Saskatchewan
August, 2017

Copyright 2017: V.A.M. Owens
Victoria Ayla Mary Owens, candidate for the degree of Master of Arts in Clinical Psychology, has presented a thesis titled, *Examining Change in Health Anxiety Symptoms Resulting from Transdiagnostic, Internet-Delivered Cognitive Behaviour Therapy: The Impact of Therapist Support*, in an oral examination held on August 14, 2017. The following committee members have found the thesis acceptable in form and content, and that the candidate demonstrated satisfactory knowledge of the subject material.

External Examiner: Dr. Tarun Katapally, Johnson Shoyama Graduate School  
Supervisor: Dr. Heather Hadjistavropoulos, Department of Psychology  
Committee Member: Dr. Shadi Beshai, Department of Psychology  
Committee Member: *Dr. Nick Carleton, Department of Psychology  
Chair of Defense: Dr. Larena Hoeber, Faculty of Kinesiology & Health Studies

*Not present at defense*
Abstract

Internet-delivered Cognitive Behaviour Therapy (ICBT) is a relatively new method to improve access to psychological services and is based on the principles of cognitive behaviour therapy (CBT), a well-established and efficacious treatment option for various mental health concerns. The presence of therapist support is regarded as an important element in ICBT, yet less is known about how much therapist contact is needed; namely, whether optional therapist contact is as effective as weekly communication with a therapist. ICBT programs have historically been disorder-specific in nature, wherein specific information relevant to one disorder is presented; disorder-specific ICBT is efficacious in the treatment of generalized anxiety, panic, social phobia, depression, and health anxiety. Alternatively, transdiagnostic ICBT does not target one specific disorder, rather broad areas observable across different mental health disorders, which results in administering the same treatment protocol to individuals regardless of their primary diagnosis. Transdiagnostic ICBT has effectively reduced symptoms of depression, generalized anxiety, social phobia, and panic. The current study examined whether transdiagnostic ICBT can effectively reduce symptoms of health anxiety, characterized by excessive worry about one’s health and fear that one will acquire an illness, often resulting in frequent medical consultations at a significant economic cost. Further, the impact of level of therapist support (therapist-initiated vs. client-initiated) was investigated. Ninety-six clients participating in the Wellbeing Course, an 8-week transdiagnostic ICBT program, with elevated health anxiety symptomatology (≥15 on the Short Health Anxiety Inventory [SHAI]) were randomly assigned to a therapist-initiated (n = 52; consistent, weekly messages from therapist) or client-initiated (n = 44;
message received from therapist only when client initiates communication) contact condition. Health anxiety symptoms decreased significantly from pre-treatment to post-treatment ($\chi^2 = 25.05, p < 0.001$), lending support to the efficacy of transdiagnostic ICBT in the treatment of health anxiety. Pertinently, the level of therapist support (therapist-initiated vs. client-initiated) did not appear to impact symptom reduction. Client-initiated contact requires less therapist time, which allows for higher levels of efficiency, as support is provided on an as-needed level. The level of therapist support did not directly impact symptom reduction, yet consistent and weekly messages from a therapist did promote more favourable treatment engagement when compared to optional therapist communication (4.48 vs. 3.86 lessons completed; 4.21 vs. 1.77 messages sent) and was associated with higher treatment completion rates (76.9% vs. 54.5%). Future research is warranted to disentangle the role of therapist contact on symptom reduction and treatment engagement. The current study did not identify significant predictors of health anxiety reduction; future research should further investigate whether ICBT is better suited for certain individuals. The results from the current study lend support for the use of transdiagnostic ICBT in the treatment of health anxiety; thus improving individual wellbeing and lessening the burden placed on the healthcare system.
Acknowledgement

I would first like to acknowledge my supervisor, Dr. Heather Hadjistavropoulos, whom since the first year of my undergraduate degree, has provided me with invaluable advice, feedback, and support. Thank you for all of your hard work on this project; your prompt and attentive feedback was extremely helpful. I wish to acknowledge my thesis committee members, Dr. Nicholas Carleton and Dr. Shadi Beshai. Your thoughtful feedback and recommendations greatly improved my writing, and the final work of this thesis. Thank you to my wonderful labmates at the Online Therapy Unit, as well as my fantastic cohort. I also acknowledge the University of Regina Faculty of Graduate Studies and Research and the Department of Psychology for their financial support throughout the duration of this research.
Dedication

This project is dedicated to my amazing parents, Katherine and Travis Owens; thank you for all of your love, support, and encouragement along the way.

To my partner every step of the way, Jared Suchan; thank you for supporting me unconditionally.

For Granny Eadie... thinking of you always.
# Table of Contents

Abstract .................................................................................................................. i

Acknowledgment ................................................................................................. iii

Dedication .............................................................................................................. iv

Table of Contents ................................................................................................ v

List of Tables ........................................................................................................ vi

List of Figures ........................................................................................................ vii

List of Appendices ............................................................................................... viii

**Introduction** .................................................................................................... 1
  1.1 Overview ....................................................................................................... 1
  1.2 Internet-Delivered Cognitive Behaviour Therapy ...................................... 2
  1.3 Health Anxiety ............................................................................................ 18
  1.4 Purpose and Objectives of Current Study .................................................. 25

**Method** .......................................................................................................... 26
  2.1 Clients ......................................................................................................... 26
  2.2 Measures ..................................................................................................... 27
  2.3 Procedure ................................................................................................... 31
  2.4 Intervention ............................................................................................... 32
  2.5 Analyses ..................................................................................................... 35

**Results** ........................................................................................................... 36
  3.1 Data Preparation ......................................................................................... 36
  3.2 Descriptive Analyses .................................................................................. 39
  3.3 Primary Analyses ....................................................................................... 45

**Discussion** ..................................................................................................... 55
  4.1 Limitations and Future Research Directions ............................................. 62
  4.2 Conclusions ............................................................................................... 69

**References** .................................................................................................... 70

**Appendices** .................................................................................................. 90
List of Tables

**Table 1:** Descriptive Statistics for Variables Separated by Missing Data Status of Short Health Anxiety Inventory ................................................................. 38

**Table 2:** Description of Skewness and Kurtosis for Dependent and Independent Variables ........................................................................................................... 40

**Table 3:** Descriptive Statistics for Demographic Variables Separated by Group .......... 42

**Table 4:** Descriptive Statistics for Treatment Engagement Variables Separated by Group .............................................................................................................. 44

**Table 5:** Descriptive Statistics for Clinical Variables Separated by Group ............... 46

**Table 6:** Means, Standard Deviations, and Effect Sizes (Cohen’s d) for the Short Health Anxiety Inventory by Group ................................................................. 49

**Table 7:** Multiple Regression Predicting Change in Short Health Anxiety Inventory Scores from Pre-Treatment to Post-Treatment ........................................ 52
List of Figures

Figure 1 ............................................................................................................... 48
Figure 2 ............................................................................................................... 54
## List of Appendices

**Appendix A:** Online Screening Questionnaire ................................................. 90

**Appendix B:** Short Health Anxiety Inventory .................................................. 118

**Appendix C:** The Generalized Anxiety Disorder Scale 7-Item .......................... 121

**Appendix D:** The Patient Health Questionnaire 9-Item ................................. 122

**Appendix E:** Kessler Psychological Distress Scale ........................................... 123

**Appendix F:** Social Interaction Anxiety Scale and Social Phobia Scale ............. 124

**Appendix G:** Panic Disorder Severity Scale- Self Report ................................. 127

**Appendix H:** Sheehan Disability Scale ........................................................... 130

**Appendix I:** Working Alliance Inventory-Short Revised ............................... 132

**Appendix J:** Research Ethics Certificate ......................................................... 134
Introduction

1.1 Overview

Internet-delivered Cognitive Behaviour Therapy (ICBT) is a relatively new method to improve access to psychological services and is based on the principles of in-person cognitive behaviour therapy (CBT), a well-established and efficacious treatment option for various mental health concerns. ICBT has several advantages, such as addressing treatment barriers to accessing in-person services. ICBT provides clients with structured psychoeducational materials, delivered in an online format. ICBT programs typically involve therapeutic support, in which a therapist provides guidance to clients via messaging or telephone calls. Disorder-specific ICBT has been effective in the treatment of generalized anxiety (e.g., Jones, Hadjistavropoulos, & Soucy, 2016), panic (e.g., Kiropoulos et al., 2008), social phobia (e.g., Berger, Hohl, & Caspar, 2009), depression (e.g., Titov, Andrews, Davies et al., 2010), and health anxiety (e.g., Hedman et al., 2011). Conversely, transdiagnostic ICBT involves administering the same treatment protocol to individuals regardless of their primary diagnosis. As transdiagnostic treatment involves treating various mental health concerns using a single protocol, transdiagnostic ICBT is efficient for both clients and therapists. However, less is known about which disorders are responsive to transdiagnostic ICBT. To date, there is strong evidence indicating transdiagnostic ICBT is able to effectively treat depression, generalized anxiety, panic disorder and social anxiety (Dear et al., 2011; Hadjistavropoulos, Nugent, et al., 2016; Titov et al., 2011).

The current study sought to examine whether a transdiagnostic ICBT program can effectively reduce symptoms of health anxiety, an area previously only explored in
disorder-specific ICBT. Health anxiety, characterized by excessive worry about one’s health and fear that one will acquire an illness, represents an important condition to examine as health anxiety is both prevalent and under-treated, and results in significant economic and personal burden (Bobevski, Clarke, & Meadows, 2016; Tyrer et al., 2011). The current study also explored the role of therapist support, and whether different levels of therapeutic support facilitated greater health anxiety reduction. To provide context to the research, the literature review that follows will review different forms of ICBT, including limitations, advantages, and efficacy. Information about health anxiety and psychological treatments for health anxiety will also be reviewed.

1.2 ICBT

ICBT has been identified as a viable treatment option and is based on the principles of CBT. CBT is an efficacious form of treatment for a wide variety of mental health concerns, with large effect sizes consistently reported in the literature (Butler, Chapman, Forman, & Beck, 2006). The goal of CBT is both to target harmful cognitions and behavioural symptoms that individuals faced with mental health disorders experience (Flynn & Warren, 2014). It is common for individuals with mental health concerns to experience maladaptive cognitions. CBT was designed to equip individuals with skills pertinent in recognizing and challenging unhelpful thoughts, and to ultimately generate more realistic and balanced cognitions. Behavioural strategies (e.g., behavioural activation, exposure) are also central to CBT. Individuals are often encouraged to increase their activity level and, in later sessions, begin approaching activities, objects, or people they may have feared or avoided in the past. CBT is a flexible treatment that can be adapted to address an array of mental health concerns (Thase, Kingdon, &
Historically, therapists have implemented CBT with individuals in a face-to-face setting. Unfortunately, numerous barriers to accessing in-person services exist, such as geographical constraints, mobility issues, and stigma, thus preventing widespread individual access to treatment (Griffiths, Lindenmeyer, Powell, Lowe, & Thorogood, 2006).

ICBT emerged in response to treatment barriers associated with accessing in-person services (Griffiths et al., 2006). ICBT involves providing clients with structured psychoeducational and therapeutic materials in an online format (Dear, Zou, et al., 2015). Materials aim to teach individuals the same skills and provide similar information as would typically be accomplished in face-to-face CBT sessions. ICBT programs can be self-guided, wherein a client accesses and works through the online materials individually, or the program may have an element of therapist support. Therapist guided programs typically involve a trained therapist that provides support, encouragement, and is able to answer client questions (Hadjistavropoulos, Thompson, Klein, & Austin, 2012).

1.2.1 Advantages and limitations. In addition to ICBT being highly efficacious, certain benefits of online intervention supersede those observed with traditional face-to-face therapy. In general, the advantages of ICBT contribute to the accessibility and dissemination of treatment, namely accomplished through addressing in-person treatment barriers, as well as through being economically favourable. Various treatment barriers contribute to the marked inconsistency between the need for, and availability of, efficacious interventions (Saxena, Thornicrof, Knapp, & Whiteford, 2007). Barriers to treatment access include geographical restrictions, privacy concerns, mobility issues, and
stigma associated with seeking face-to-face treatment; pertinently, many treatment barriers may be mitigated when online interventions are implemented (Griffiths et al., 2006).

ICBT confers economic advantages as compared to traditional in-person services (Donker et al., 2015). A comprehensive review on Internet interventions compiled studies from 1990 to 2014 sought to provide an economic evaluation of Internet interventions for a range of mental health disorders, namely depression, anxiety, smoking cessation, and alcohol use. The review concludes that guided Internet interventions are more cost-effective than waiting list conditions and treatment as usual (i.e., in-person services). Similar results of the economic benefits pertaining specifically to ICBT have also been well-established in the literature (e.g., Hedman, Ljótsson, & Lindefors, 2012). ICBT requires considerably less therapist time than in-person services, contributing to increased cost effectiveness (Andersson, 2016; Andersson & Titov, 2014; Andrews, Cuijpers, Craske, McEvoy, & Titov, 2010). In addition to efficacy, the benefits associated with ICBT make this a promising treatment option.

There are important limitations to ICBT that can be addressed with future research. For example, ICBT researchers have examined potential predictors (e.g., client gender, education) of therapeutic success; however, due to the relatively new emergence of ICBT, no consistent predictors have been identified (Andersson & Titov, 2014). Even less known about which individuals may benefit the most from ICBT as compared to in-person treatment. Additionally, compared to face-to-face psychological interventions, less is known about the long-term efficacy of ICBT (Andersson, Hesser, Hummerdal, Bergman-Nordgren, & Carlbring, 2013). The majority of ICBT research only monitors
clients’ symptoms for a short period of time (such as six months), and as noted by Andersson et al. (2013), a small number of studies have investigated the long-term maintenance of therapeutic gains following an ICBT program. Several researchers have investigated ICBT when regular therapist support is offered (e.g., Wims, Titov, Andrews, & Choi, 2010) and some without regular therapist guidance (e.g., Oromendia, Orrego, Bonillo, & Molinuevo, 2016); however, discrepancies exist regarding what has been considered “therapist support” (Schneider, Hadjistavropoulos, & Faller, 2016). Important differences in the way in which support is provided (e.g., emails vs. telephone), the frequency of contact (e.g., weekly vs. daily), and the content of communication (e.g., administrative/technical support vs. therapeutic assistance) makes drawing comparisons among ICBT research difficult. Accordingly, conclusive evidence as to which elements of therapist support are most beneficial to treatment success has not been well established. Future research on ICBT may elucidate which individuals ICBT is best suited for, as well as provide a better understanding of the long-term efficacy of ICBT and the role of therapist support.

ICBT is a relatively novel form of psychological intervention; as such, exploration into potential ethical limitations warrants discussion. Recent research has examined Internet interventions within the context of guiding ethical principles in psychology (e.g., Childress, 2000; Prentice & Dobson, 2014) For example, Prentice and Dobson (2014) underscore the importance of providing clients with sufficient information regarding their chosen intervention (e.g., where information collected is stored and for how long, benefits/risks to treatment) to ensure that clients are able to provide informed consent. It is also paramount that clients are provided with information
regarding limitations to confidentiality when utilizing interventions delivered remotely, such as security issues on the client’s computer (Childress, 2000). The critical analyses pertaining to ethical implications of remotely delivered interventions that researchers in the field have outlined highlight the importance of careful consideration into ethical principals when developing ICBT protocols.

1.2.2 Efficacy of ICBT. Despite the relatively new emergence of ICBT, research demonstrating the efficacy of ICBT is mounting (Andersson, Wagner, & Cuijpers, 2016; Andrews et al., 2010; Hedman et al., 2012). For example, Andersson et al. (2014) conducted a meta-analysis examining ICBT versus face-to-face CBT. The included studies examined a range of disorders, such as social anxiety, panic, depression, and specific phobias. The meta-analysis revealed that ICBT effectively reduced symptoms of an array of mental health concerns. Further, ICBT resulted in comparable effect sizes to those produced with face-to-face CBT (Andersson et al., 2014; Andrews et al., 2010). In addition to appearing highly efficacious, ICBT also appears acceptable to individuals based on high treatment adherence and satisfaction ratings (Andrews et al., 2010).

Considerable variability in ICBT protocols exist; as such, a literature review discussing the efficacy of specific forms of ICBT (i.e., disorder-specific programs) will be included. The overall efficacy of ICBT is supported by numerous studies, yet less is known about predictors of outcome with respect to ICBT as treatment. Several researchers have investigated variables that may predict treatment outcome in ICBT. For example, Hadjistavropoulos, Pugh, Hesser, and Andersson (2016) examined an array of potential predictors of treatment response (as measured by reduction in symptoms) with respect to a disorder-specific ICBT program for depression and an ICBT program for
anxiety. Across both programs, greater symptom severity at baseline was associated with better treatment outcomes. Further, accessing more online content was a significant predictor of symptom reduction. Other research has found client characteristics to be predictive of treatment outcomes (as measured by treatment adherence), wherein being female and having higher rates of education predicted more favourable treatment outcomes (El Alaoui et al., 2015). The lack of consistent predictors of favourable treatment outcome in the literature underscores the importance of future research.

1.2.3 Level of therapeutic support. Providing individuals with structured materials online is a hallmark feature of ICBT; nevertheless, individuals may also have access to a therapist throughout the duration of treatment. Therapist contact may be provided via email or telephone, and serves the purpose of offering support, guidance, and answering any questions a client may have (Hadjistavropoulos et al., 2014). Therapists often serve a versatile role, acting as a first-line for addressing technical issues (e.g., unable to access online material), monitoring client engagement, and assessing client risk. The presence of therapeutic guidance during an ICBT program has widely been regarded as an important component of treatment (e.g., Andersson & Cuijpers, 2009; Spek et al., 2007). Spek et al. (2007) conducted a meta-analysis, comprised of studies that implemented ICBT with individuals experiencing anxiety or depression. The meta-analysis revealed large mean effect sizes ($d = 1.0$) for interventions that involved providing an element of therapist assistance to clients, whereas interventions that were self-guided, without therapist assistance, produced small mean effect sizes ($d = 0.24$). Further, Baumeister, Reichler, Munzinger, and Lin (2014) employed a meta-analysis seeking to examine the impact of therapist guidance on the
efficacy of Internet interventions. Baumeister and colleagues (2014) postulated interventions involving therapist support were significantly superior to interventions without therapist support. A more recent review conducted by Beshai and colleagues (2016) found interventions providing minimal levels of therapist support (i.e., ICBT) produced greater effect sizes than interventions without an element of therapist support. The results indicate therapist support, in some form, may be an important component of facilitating symptom reduction in ICBT programs.

Protocols guiding therapist contact (e.g., frequency, duration, telephone vs. email) has varied in the literature. For example, in some ICBT programs, therapists communicate with their clients once a week (e.g., Dear et al., 2013; Hadjistavropoulos et al., 2014), whereas in other programs, therapists reply to clients within a 24 hour time frame (Hedman et al., 2011). Another variation in therapist contact pertains to whether the therapist contacts their client on a consistent and scheduled basis (therapist-initiated), or whether the therapist contacts their client only when the client initiates communication (client-initiated) such as through asking a question.

1.2.3.1 Therapist-initiated contact. For the purposes of the current study, an ICBT program will be considered therapist-initiated if a therapist contacts a client on a consistent and scheduled basis. Contact may involve emailing a client once a week regardless of whether the client has accessed new material and regardless of whether the client has responded to their therapist’s previous emails (Hadjistavropoulos et al., 2014). Consistent therapist-initiated support is often a component of ICBT, whether the ICBT program is intended to be disorder-specific (e.g., tailored for depression) or transdiagnostic. For example, a disorder-specific program for panic involved participants
working through six online lessons (Wims, et al., 2010). Therapists initiated contact by providing feedback on participants’ homework (typically within 24-hour time frame) and sending reminder emails to participants that had not completed their homework. On average, therapists sent approximately eight emails to each participant. Wims and colleagues (2010) reported large effect sizes ($d = .93$) with respect to panic symptoms.

Promising results from therapist-initiated communication has been demonstrated in the transdiagnostic ICBT literature. One transdiagnostic ICBT intervention for anxiety and depression provided participants with five online lessons (Hadjistavropoulos, Nugent, et al., 2016). Consistent therapist-assistance was provided, and involved weekly emails aimed at answering potential questions, summarizing lesson content, and providing general encouragement. The study found large effect sizes with respect to depression ($d = 1.17$) and anxiety ($d = 1.31$) symptom reduction. Overall, the literature has demonstrated that therapist support, when provided on a consistent basis has resulted in significant symptom reduction, with results comparable to face-to-face CBT (for review see Andrews et al., 2010).

### 1.2.3.2 Client-initiated contact

Another level of therapist support that has been less explored in the literature is that of client-initiated contact, also referred to as optional contact. With client-initiated support, a client is required to initiate contact (such as via email) before receiving communication from their therapist. Therapist support can be a component of client-initiated programs wherein the client determines their therapist’s role, or the level of therapist support. In one study, individuals with panic disorder were recruited to take part in an eight lesson ICBT program (Oromendia et al., 2016). Participants were randomly assigned to either a client-initiated contact condition ($n =$
27), a therapist-initiated contact condition ($n = 25$), or a waiting list condition ($n = 25$). Individuals assigned to the client-initiated contact condition were informed that they were able to contact their therapist at any time, and their therapist would respond back within 24 hours. Participants in the therapist-initiated contact condition were informed that their therapist would contact them once a week. Both treatment conditions resulted in statistically significant symptom improvements compared to a waiting list control; however, clients in the therapist-initiated condition reported a greater reduction in panic symptoms than participants in the client-initiated condition (effect sizes of 2.4 and 1.3 respectively). There were 27 individuals in the client-initiated condition, however, only four participants sought out communication with their therapist (~15%; Oromendia et al., 2016). Results suggest that having consistent contact from a therapist may be an important aspect of ICBT treatment.

A study implemented using ICBT with clients experiencing social phobia reported different results with respect to the role of therapist support (Berger et al., 2011). During a 10 week ICBT treatment protocol, clients were randomized to receive either unguided ICBT (no therapist contact), guided ICBT (weekly therapist contact), or unguided ICBT with the ability to step-up therapist contact (client-initiated). All clients had access to five online lessons and a discussion form. Measures administered at baseline, post-treatment, and 6-month follow up indicate symptoms of social phobia reduced significantly in all three treatment groups; no difference in efficacy between groups emerged. Many individuals in the client-initiated group (i.e., 48%) chose to step-up care; as such, the level of therapist support provided to approximately half of the
individuals in the client-initiated contact group was the same as that provided to individuals receiving weekly therapist contact.

An additional study was designed to investigate the role of therapist support with clients experiencing chronic pain (Dear, Gandy, et al., 2015). Individuals were assigned to either a therapist-initiated condition, client-initiated condition, no contact condition, or a waitlist condition. All clients had access to a five lesson ICBT program to be completed over the course of eight weeks. There were significant improvements from baseline to post-treatment for symptoms of anxiety \( (d = .44) \), depression \( (d = .73) \), and average pain \( (d = .30) \) across the three treatment groups when compared to the waitlist condition. Completion rates in the therapist-initiated, client-initiated, and no contact conditions were similar (i.e., 78%, 74%, and 68%, respectively), with no significant between group differences (Dear, Gandy, et al., 2015). The lack of consistency with regard to the importance of therapist communication on treatment outcomes (i.e., symptom reduction) underscores the need for future research in the area of role of therapist support.

1.2.4 Nature of ICBT. ICBT has largely been modeled after empirically-supported CBT strategies. The goal of psychological intervention, both in-person or when provided via the Internet, can vary in nature. For example, an intervention can seek to target one disorder in particular (disorder-specific; e.g., Salkovskis, 2007) or an intervention can be broad in scope with respect to treatment (transdiagnostic; e.g., Newby et al., 2017). Historically, interventions have taken a disorder-specific approach to treatment. Yet, as more is known about commonalities between mental health
disorders, transdiagnostic treatments are increasingly being researched (Titov et al., 2015).

1.2.4.1 Disorder-specific treatment. Generally, in-person CBT interventions are disorder-specific in nature and target symptoms of a primary disorder for which a client is seeking treatment (for review see Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012). Decades of research investigating the efficacy of psychological interventions for mental health concerns have resulted in detailed treatment protocols for specific disorders. For example, Salkovskis (2007) described and encouraged methods of tailoring CBT techniques to specifically address panic disorder, such as discussing with the client their most recent panic attack, forming a panic circle, and encouraging behavioural experiments (e.g., hyperventilation) relevant to panic. Disorder-specific manuals often provide detailed session-by-session outlines that are meant to address one disorder while the core principles of CBT remain (Hofmann & Otto, 2008). Importantly, disorder-specific protocols appear efficacious in the treatment of a variety of mental health concerns (see Nathan & Gorman, 2015).

Early ICBT programs were modeled after efficacious disorder-specific CBT treatments; as such, ICBT programs have historically been disorder-specific in nature. Extensive research has been conducted examining the efficacy of ICBT treatments specifically targeting depression (e.g., Andersson et al., 2005; Perini, Titov, & Andrews, 2009; Titov, Andrews, Davies et al., 2010), panic disorder (e.g., Kiropoulos et al., 2008; Klein, Richards, & Austin, 2006; Shandley et al., 2008), social phobia (e.g., Berger et al., 2009; Carlbring et al., 2007; Titov, Andrews, & Schwencke, 2008), generalized anxiety disorder (e.g., Jones et al., 2016; Titov et al., 2009), and health anxiety (e.g., Hedman et
Meta-analytic results support arguments that disorder-specific ICBT programs significantly reduce symptoms of mental health concerns (Andersson et al., 2014; Andrews et al., 2010). The proliferation of research that has been conducted on disorder-specific treatments, both in-person and delivered via the Internet, has laid the groundwork for the emergence of transdiagnostic interventions.

1.2.4.2 Transdiagnostic treatment. Transdiagnostic treatments involve administering the same treatment protocol to individuals regardless of their primary diagnosis (Dear, Staples, et al., 2015; McEvoy, Nathan, & Norton, 2009). Transdiagnostic interventions tend to focus more broadly on areas such as stress management, maladaptive cognitions, and coping mechanisms rather than focusing on diagnostic categories (Kazdin, 2014). Treatments that are transdiagnostic in nature are based on results suggesting that similar core processes are observable across different mental health disorders. For example, the same transdiagnostic program may be implemented with individuals experiencing either anxiety or depression due to disorder overlap, such as negative affect and neuroticism (McEvoy et al., 2009). There is also evidence to suggest that many mental health disorders share a common biological etiology, wherein the presence of different genes and neurotransmitters are associated with the development of mental illness (Smoller et al., 2013).

Mental health researchers have avidly acknowledged the existence of a widening treatment gap; that is, there is a pervasive gap between the need for, and availability of, empirically-supported treatment options (Collins et al., 2004; McHugh, Murray, & Barlow, 2009). Transdiagnostic interventions may have the ability to curtail the treatment gap through greater ease of dissemination than typical in-person services.
In disorder-specific interventions, clinicians require training using different procedures for different mental health concerns, a practice that is both resource and cost-intensive. Alternatively, transdiagnostic interventions simplify treatment dissemination by requiring training only using a singular treatment protocol (Meidlinger & Hope, 2017).

Early research results indicate transdiagnostic programs may be slightly more effective in the treatment of depression, and in reducing symptoms of comorbid disorders, than purely disorder-specific interventions (Newby, Mewton, & Andrews, 2017; Newby, Twomey, Yuan, & Andrews, 2016). Newby, Twomey, and colleagues (2016) conducted a meta-analysis including studies that compared the efficacy of transdiagnostic ICBT with control conditions, including disorder-specific treatment controls. The meta-analysis identified four studies that directly compared transdiagnostic ICBT to a disorder-specific treatment control. Individually, the reviewed studies often failed to identify significant differences between transdiagnostic and disorders-specific treatment; Newby, Twomey, et al. (2016) postulates the discrepancies may be due to lack of statistical power within the trials, rather than an absence of significant differences. When results from the four studies were examined in the meta-analysis, there is a significant difference favouring transdiagnostic interventions in the treatment of depression (Hedges’ $g = .21; 95\% \text{ CI} [.004, .41])$. No significant differences between transdiagnostic and disorder-specific treatment for anxiety emerged (Hedges’ $g = .05; 95\% \text{ CI} [-.14, .23];$ Newby, Twomey, et al., 2016).

A subsequent study conducted by Newby and colleagues (2017) was designed to examine the impact of transdiagnostic ICBT (The Depression and Anxiety Program;
Newby et al., 2013), disorder-specific ICBT for anxiety (Robinson et al., 2010), and disorder-specific ICBT for depression (Perini et al., 2009) on symptoms of comorbid disorders using a non-randomized effectiveness study. Each of the three treatments were comprised of six online lessons, while the content of the materials differed. Individuals included in the study had previously presented to a clinic specializing in ICBT, and were ‘prescribed’ an ICBT program that was suitable to their needs. Newby et al. (2017) indicated that no information was available regarding how clinicians assigned clients to each of the three groups. When baseline symptom severity was controlled for, symptoms of depression, generalized anxiety, and psychological distress decreased significantly over all three treatment groups. Clients in the transdiagnostic program experienced greater reduction in anxiety symptoms than clients experiencing co-morbid anxiety in the disorder-specific program for depression. As well, clients in the transdiagnostic program experienced greater reduction in symptoms of depression, distress, and impairment than clients in the disorder-specific program for anxiety. Notwithstanding various limitations, emerging research suggests that transdiagnostic interventions may have advantages in terms of efficacy in the treatment of depression and in simultaneously reducing symptoms of comorbid disorders than disorder-specific programs.

Transdiagnostic interventions were initially developed and administered in a face-to-face format, yet more recently, transdiagnostic treatments have been adapted and implemented using the Internet to further promote ease of treatment dissemination. For example, Titov and colleagues (2010) administered a transdiagnostic ICBT program to individuals experiencing generalized anxiety disorder, panic disorder, or social phobia. The online program contained six lessons, multiple homework assignments, and therapist
guidance and support. Lessons contained information about anxiety and depression, physical symptoms, principles of CBT, graded exposure, assertiveness, and relapse prevention. Post-treatment analyses revealed participants experienced significant symptom reduction in terms of their respective disorder, suggesting transdiagnostic ICBT is effective for treating symptoms across diagnostic categories (Titov, Andrews, Johnston et al., 2010). A subsequent study directly compared a transdiagnostic ICBT program to a disorder-specific ICBT in the treatment of depression (Titov et al., 2015). Importantly, no statistically significant differences in symptom reduction emerged between the two groups. Results suggest that transdiagnostic programs, which can be administered to individuals experiencing a variety of mental health concerns, are able to effectively reduce symptoms of concern without necessarily being directly targeted (Titov et al., 2015).

Numerous other transdiagnostic ICBT programs exist and show similarly promising results. The Wellbeing Course is one such example. The Wellbeing Course was developed by a research team in Australia (Titov et al., 2011) and is comprised of materials that were implemented in disorder-specific programs for the treatment of depression, generalized anxiety, social phobia, and panic (Titov et al., 2011). Initially, the Wellbeing Course involved eight lessons that were provided to clients over the course of 10 weeks. The lessons included: psychoeducation about anxiety and depression; strategies for monitoring and challenging maladaptive thoughts; strategies for managing physical symptoms; psychoeducation about behavioural activation; psychoeducation about graded exposure; information about challenging beliefs; strategies for overcoming barriers to treatment; and information and strategies for relapse
prevention. Clients completed homework after each lesson and had access to an online discussion forum that was monitored by an online therapist. Clients received weekly contact from a therapist via messaging or telephone. The therapist sought to reinforce the client’s progress, summarize key messages from the previous lesson, normalize challenges to treatment, promote engagement, and answer client questions. Anxiety and depression symptoms decreased significantly from baseline to post-treatment, with Cohen’s $d$ values of .52 and .58 respectively; 81% of clients completed the program (Titov et al., 2011).

Given the promising results of the Wellbeing Course in the treatment of depression and anxiety, the course’s Australian development team modified the program to be shorter in duration (Dear et al., 2011). Rather than eight lessons over the course of 10 weeks, the modified Wellbeing Course was comprised of five lessons to be accessed over the course of eight weeks. The shortened Wellbeing Course contained the same psychoeducational and therapeutic content as the original course, however, the modified course was more condensed in nature and did not offer an online discussion forum. Clients completed homework assignments after each lesson and were contacted weekly by a therapist via messaging or telephone. The shortened Wellbeing Course resulted in similar results as the original version; anxiety and depression symptoms decreased significantly from baseline to 3-month follow up, with Cohen’s $d$ values of .95 and .73 respectively. Most clients completed the course (i.e., 81%) and most completers (i.e., 89%) reported being highly satisfied with the program (Dear et al., 2011).

Many studies have supported the efficacy of the Wellbeing Course within an Australian sample (e.g., Dear et al., 2011; Titov et al., 2011). The shortened Wellbeing
Course, comprised of five lessons delivered over the course of eight weeks, was also provided to 458 clients in an open Canadian trial (Hadjistavropoulos, Nugent, et al., 2016). Client eligibility requirements included experiencing symptoms of anxiety or depression, as indicated by self-report questionnaires. Significant and large reductions in symptoms of depression and anxiety were found (Cohen’s $d$ ranging between 1.17-1.31). Most clients completed the program (i.e., 78%), most (i.e., 95%) reported the course was worth their time, and most (i.e., 95%) would refer a friend to the Wellbeing Course (Hadjistavropoulos, Nugent, et al., 2016). The Wellbeing Course appears to be efficacious and generalizable across populations. An impressive body of literature demonstrating the efficacy of transdiagnostic ICBT on symptoms of depression, social phobia, generalized anxiety, and panic symptoms exists; however, whether transdiagnostic ICBT will reduce symptoms of health anxiety remains unknown.

1.3 Health Anxiety

Being aware of physical sensations that may indicate the presence of illness is an important aspect to being physically well and serves an evolutionarily adaptive purpose. However, monitoring physical sensations can become maladaptive for individuals when they become preoccupied and hyperaware of bodily sensations, often worrying that benign sensations may be a sign of significant physical health problem (Abramowitz, Olatunji, & Deacon, 2007). Health anxiety is characterized by fear of acquiring a serious illness, resulting in psychological distress to the individual (Warwick & Salkovskis, 2001) and is estimated to impact 6% of individuals at one point in their life (Bobevski et al., 2016); yet, due to the reassurance-seeking nature of health anxiety, rates in medical settings are estimated to be upwards of 20% (Tyrer et al., 2011).
Health anxiety shares features such as intrusive thoughts and repetitive behaviours (i.e., frequent reassurance seeking) with other mental health disorders, such as obsessive-compulsive disorder (OCD; Hedman et al., 2017). The similarities between health anxiety and OCD in combination with the growing support for transdiagnostic treatment options have led researchers to investigate potential transdiagnostic markers (e.g., Riesel, Goldhahn, & Kathmann, 2017). Research conducted by Reisel and colleagues (2017) investigated hyperactive error-related brain activity in samples of individuals with health anxiety, OCD, and among healthy controls. The researchers found when compared to healthy controls, individuals with health anxiety and OCD showed elevated levels of error related monitoring; error related monitoring is thought to reflect an abstract cognitive process consistent with error-based reinforcement learning. Elevated levels of error-related negativity are often enhanced in individuals with anxiety disorders that share features such as negative affect, reduced tolerance for uncertainty, and worry (Riesel et al., 2017).

Similarities between health anxiety and OCD have led some researchers to conclude that health anxiety is merely a special case of OCD (e.g., Abramowitz et al., 2007), noting the similarity in features and treatment protocols. However, important differences between health anxiety and OCD exist. For example, when evaluating cognitions, individuals experiencing health anxiety often hold the belief that their fears are rational, whereas individuals with OCD are often insightful and identify their beliefs as irrational (Hedman et al., 2017). As such, other researchers believe that health anxiety and OCD do not represent the same disorder (Hedman et al., 2017).
Health anxiety is a dimensional construct, and represents a continuum of symptoms ranging from a complete absence of health concerns to clinical levels of anxiety pertaining to health, which has previously been referred to as hypochondriasis (American Psychiatric Association [APA], 2000; Ferguson, 2009). In the Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition (DSM-5; APA, 2013) hypochondriasis has been eliminated as a disorder and replaced by two diagnoses: somatic symptom disorder (SSD) and illness anxiety disorder (IAD). Previous diagnoses of somatization disorder, hypochondriasis, pain disorder, and undifferentiated somatoform disorder were subsumed under the new classification of SSD. SSD involves excessive thoughts, feelings, or behaviours that are related to somatic symptoms experienced (e.g., pain). Approximately 75% of individuals that previously met criteria for hypochondriasis were expected to meet criteria for SSD (Bailer et al., 2016). IAD involves an individual becoming preoccupied with the fear of acquiring an illness (e.g., cancer), without the presence of physical symptoms (APA, 2013).

1.3.1 Consequences of health anxiety. Individuals experiencing health anxiety commonly hold the belief that they have a serious illness, which has not been detected by medical professionals (Abramowit et al., 2007). Understandably, conviction about having an illness has been associated with significant distress and impairment to individuals’ lives. Health anxiety has high rates of comorbidity with other mental and physical disorder (Sunderland & Findlay, 2013), evidencing the need to understand whether health anxiety uniquely contributes to an individual’s level of distress, or whether distress is primarily experienced in response to comorbid conditions. A recent investigation examining health anxiety controlled for comorbid mental (e.g., anxiety,
depression) and physical (e.g., asthma, cancer, arthritis) conditions to evaluate whether the presence of health anxiety independently contributed to an individual’s psychological distress (Bobevski et al., 2016). Individuals experiencing higher rates of health anxiety were the most likely to report high personal distress. The propensity for individuals with health anxiety to experience significant personal distress underscores the importance of developing effective interventions.

Health anxiety also results in significant economic costs, as frequent use of the healthcare system is a characteristic feature of health anxiety (e.g., Barsky, Ettner, Horsky, & Bates, 2001; Bobevski et al., 2016). Increased service usage often involves recurrent medical consultations and seeking unnecessary tests. A recent study evidenced that, when controlling for comorbid physical and mental conditions, individuals experiencing health anxiety made approximately twice as many visits to their general practitioner and to other medical specialists than non-health anxious individuals (Bobevski et al., 2016). Similar results have been reported by Fink, Ørnbøl, and Christensen (2010), wherein individuals with severe health anxiety used 78% more healthcare services than individuals that were not health anxious. Individuals with severe health anxiety used significantly more healthcare services than individuals with a well-defined medical condition (Fink et al., 2010). Results provide additional evidence of the costly nature of health anxiety, further indicating the importance of developing efficacious interventions to reduce the burden on the healthcare system, as well as improve individuals’ wellbeing.

**1.3.2 Psychological treatment for health anxiety.** A large portion of individuals experiencing health anxiety do not access effective available treatment options (Olatunji
et al., 2014) despite the existence of effective treatment options. CBT has been research extensively in the treatment of health anxiety (e.g., Bobevski et al., 2016; Clark et al., 1998; Olatunji et al., 2014; Warwick, Clark, Cobb, & Salkovskis, 1996). As conceptualized from a CBT perspective, individuals with health anxiety often experience cognitive (e.g., attentional bias towards bodily sensations), behavioural (e.g., frequent medical consultations), and physical (e.g., headaches) symptoms (Hedman & Axelsson, 2017). Randomized control trials investigating the effect of CBT on health anxiety, while varying slightly in terms of methodology and results, consistently demonstrate the efficacy of CBT in the treatment of health anxiety (Olatunji et al., 2014; Taylor & Asmundson, 2004). CBT for health anxiety involves several core features, such as psychoeducation. Individuals engaging in CBT are typically provided information regarding reassurance-seeking behaviours, selective attention with respect to health anxiety, and the role of stress on physical symptoms (Taylor, Asmundson, & Coons, 2005). Treatment for health anxiety often involves clients completing behavioural exposures (Owens & Antony, 2011). Research conducted by Weck and colleagues (2015) investigated whether cognitive therapy was superior to exposure therapy and/or superior to a waitlist condition. Weck et al. (2015) found that both cognitive therapy and exposure therapy significantly reduced symptoms of health anxiety and no significant differences between the two treatment groups were found, suggesting that health anxiety interventions should integrate both cognitive and exposure-related components.

Unfortunately, barriers to accessing in-person services (i.e., geographical restrictions, mobility restraints, stigma) such as CBT greatly contribute to the under-treatment of mental health disorders including health anxiety (Collins et al., 2004). To
address an array of treatment barriers, Hedman and colleagues (2011) pioneered the first known disorder-specific program for health anxiety, which was largely based on in-person CBT protocols. Clients were presented with online materials, emphasizing the way in which avoidance and safety behaviours impact health anxiety symptomology. Clients were taught mindfulness strategies as a means of attending to physical sensations in the body without engaging in reassurance seeking behaviours. An online therapist was accessible to clients via email throughout the duration of the program. Therapists provided feedback on homework and encouraged client engagement in the program. Compared to a waitlist condition, individuals that participated in the ICBT program experienced a significant reduction in health anxiety symptoms (Hedman et al., 2011). A subsequent study conducted by the same research team examined the impact of disorder-specific ICBT versus online behavioural stress management on symptoms of health anxiety (Hedman et al., 2014). Post-treatment analyses revealed that while symptoms of health anxiety reduced in both conditions, ICBT produced significantly larger reductions ($p < .05$) (Hedman et al., 2014).

More recently, Newby, Mahoney, and colleagues (2016) implemented a pilot program of disorder-specific ICBT, referred to as The Health Anxiety Program, marking the first research conducted on Internet-delivered options for health anxiety to be conducted outside of Sweden. The Health Anxiety Program consists of six online lessons over the course of 10 weeks. The lessons contain information about understanding health anxiety, reducing worry about personal health, becoming aware of anxious thinking, thought challenging, education about avoidance and safety behaviours, and relapse prevention. Each lesson was accompanied with homework. Clients had access to an
online therapist during the program; therapeutic support was largely based on the client’s need, and generally occurred if the client had marked deterioration in wellbeing, if the client requested therapist contact, or if there was little improvement in health anxiety symptoms. Most clients completed the Health Anxiety Program (i.e., 81%) and significant reductions in health anxiety, depression, distress, and anxiety were reported (Newby, Mahoney, et al., 2016). The results reported by Newby, Mahoney, and colleagues (2016) contributes to the body of literature on the efficacy of Internet-delivered treatment options and indicate that disorder-specific ICBT is efficacious in the treatment of health anxiety; however, whether transdiagnostic ICBT will be efficacious in the treatment of health anxiety remains unknown.

Hedman et al. (2013) examined data from a previously implemented disorder-specific ICBT program for health anxiety (Hedman et al., 2011) for potential predictors of therapeutic outcome (measured by health anxiety symptoms at 6-months post-treatment). Several variables were examined, such as age, gender, education, lessons accessed, and anxiety and depression symptoms. Hedman and colleagues’ (2013) results did not support demographic variables as predicting treatment success, which contrasts previous results indicating age and education level as significant predictors of treatment success when using ICBT for anxiety and depression (Hadjistavropoulos, Nugent, et al., 2016). Hedman and colleagues (2013) found more severe health anxiety symptoms at baseline predicted overall health anxiety reduction. The number of lessons completed was also a significant predictor, wherein clients that accessed more lessons experienced a greater reduction in health anxiety (Hedman, Lindefors, et al., 2013). There has been research into predictors of health anxiety reduction using disorder-specific ICBT; that
said, which variables predict therapeutic success for health anxiety in a transdiagnostic program remains unknown.

1.4 Purpose and Objectives of Current Study

There is mounting evidence supporting the efficacy of online interventions in the treatment of mental health concerns (for review see Andersson, 2016). Promising results for disorder-specific, as well as transdiagnostic interventions exist, wherein effect sizes are comparable to that found with face-to-face therapy (Andersson et al., 2014). Recent research has demonstrated the efficacy of disorder-specific ICBT in the treatment of health anxiety (Hedman et al., 2011b; Hedman, Axelsson, Andersson, Lekander, & Ljotsson, 2016; Newby et al., 2013); however, whether transdiagnostic ICBT will similarly be efficacious in reducing symptoms of health anxiety remains unknown. The current study addressed several research questions:

1. Does transdiagnostic ICBT reduce symptoms of health anxiety?
2. Does the level of therapist support (therapist-initiated vs. client-initiated) facilitate greater health anxiety symptom reduction?
3. Are demographic (sex, education) variables predictive of health anxiety reduction?
4. Are clinical (symptom severity at pre-treatment) variables predictive of health anxiety reduction?
5. Are treatment adherence (furthest lesson visited) variables predictive of health anxiety reduction?
6. Does the severity of health anxiety symptoms the client is experiencing correlate with the frequency in which they are mentioning health anxiety to their therapist?
Subsequent hypotheses were also generated:

1. Health anxiety symptoms will reduce significantly following a transdiagnostic ICBT program (Johnston, Titov, Andrews, Spence, & Dear, 2011).

2. Therapist-initiated and client-initiated support will both result in reductions in health anxiety symptoms, with no significant differences between groups will be found (Dear et al., 2015).

3. Female clients with higher education levels will experience greater reduction in health anxiety symptoms (El Alaoui et al., 2015).

4. Clinical variables will be predictive of health anxiety reduction wherein lower levels of depression and higher levels of anxiety at baseline will predict health anxiety reduction (El Alaoui et al., 2015; Hedman, Lindefors, et al., 2013).

5. Treatment adherence, as measured by furthest lesson visited, will predict more favourable health anxiety reduction from pre-treatment to post-treatment (Hedman, Lindefors, et al., 2013).

6. A limited body of literature related to client messages exists, as such, no a priori hypothesis was posited.

Method

2.1 Clients

Clients were comprised of a subset of individuals taking part in the Wellbeing Course, a transdiagnostic ICBT treatment program offered through the Online Therapy Unit located at the University of Regina. Individuals reported learning about ICBT through various sources, such as their family physician, word of mouth, or the media. To be eligible for the Wellbeing Course, and thus for the current study, individuals were
required to be over the age of 18, live in Saskatchewan, provide a medical contact for emergency purposes, and have access to a computer and Internet. Further, individuals must not have been experiencing high risk of suicide, mania, psychosis, or primary addictions issues. Individuals that scored 15 or greater on the Short Heath Anxiety Inventory (SHAI; Salkovskis, Rimes, Warwick, & Clark, 2002) at baseline were considered appropriate clients for the purposes of the current study. A cutoff score of 15 on the SHAI was based on previous research indicating that scores between 15 and 17 are indicative of individuals that have elevated health anxiety, wherein approximately 10% of individuals in a control condition (i.e., without chronic pain) scored 15 or higher on the SHAI (Rode, Salkovskis, Dowd, & Hanna, 2006).

2.2 Measures

2.2.1 Demographic information. Clients provided demographic information through an online questionnaire prior to initiating treatment (see Appendix A for complete online questionnaire). Information collected included: age, sex, ethnicity, employment status, education, relationship status, size of community where they resided (e.g., reserve, town, large city), use of medication, and history of mental health conditions.

2.2.2 SHAI (Salkovskis et al., 2002). The SHAI is a measure of health anxiety symptomatology and is comprised of a subset of items contained in a longer 64-item questionnaire, the Health Anxiety Inventory (HAI; Salkovskis et al., 2002). The SHAI has been used by clinicians and researchers as a means of assessing an individual’s level of health concern, ranging from normal levels to severe health anxiety (Alberts, Hadjistavropoulos, Jones, & Sharpe, 2013; Lovas & Barsky, 2010). There are two
versions of the SHAI: a 14-item version, considered to be the main scale and an 18-item version that includes an additional subscale measuring perceived negative consequences of becoming ill. The additional four items included in the 18-item version of the SHAI do not directly measure health anxiety; as such, the 14-item version was used in the current study (see Appendix B).

Individuals read four possible statements that may apply to them, and respond by choosing the statement that best represents how they feel (e.g., I usually feel at (very low)/ (fairly low)/ (moderate)/ (high) risk for developing a serious illness.). Each statement is scored on a 0 to 3 scale, with all scores summed to produce a total score. Scores can range from 0 to 42, wherein a higher score represents greater health anxiety severity. The 14-item SHAI has comparable psychometric properties to the full 64-item version (Salkovskis et al., 2002) and appears to have good internal consistency and convergent and divergent validity (Alberts et al., 2013; Salkovskis et al., 2002). Cronbach’s α in the current study ranged from 0.82 – 0.91.

2.2.3 The Generalized Anxiety Disorder Scale 7-Item (GAD-7; Spitzer, Kroenke, Williams, & Löwe, 2006). The GAD-7 is designed to measure symptoms of generalized anxiety disorder. Individuals are asked to indicate how often, over the past two weeks, seven statements have applied to them (e.g., feeling nervous, anxious, or on edge; trouble relaxing) (see Appendix C). Each of the seven statements are rated on a 0 (not at all) to 3 (nearly every day) scale. Scores can range from 0 to 21, wherein a higher score represents greater severity of generalized anxiety. The GAD-7 has been shown to have strong psychometric properties, including good internal consistency and construct
validity (Mills et al., 2014; Spitzer et al., 2006). Cronbach’s α in the current study ranged from 0.85 – 0.90.

2.2.4 The Patient Health Questionnaire 9-Item (PHQ-9; Kroenke, Spitzer, & Williams, 2001). The PHQ-9 is a measure of major depressive disorder symptom severity. Individuals are asked to indicate how often, over the past two weeks, nine statements have applied to them (e.g., little interest or please in doing things; feeling down, depressed or hopeless) (see Appendix D). Each of the nine statements are rated on a 0 (not at all) to 3 (nearly every day) scale. Scores can range from 0 to 27, wherein a higher score represents greater severity of depression. The PHQ-9 has been shown to have strong psychometric properties, including good internal consistency, reliability, and construct validity (Cameron, Crawford, Lawton, & Reid, 2008; Kroenke et al., 2001). Cronbach’s α in the current study ranged from 0.88 - 0.89.

2.2.5 Kessler Psychological Distress Scale (K10; Kessler et al., 2002). The K10 is a measure of overall psychological distress. Individuals are asked to indicate how often, over the past month, 10 statements have applied to them (e.g., During the last 30 days, about how often did you feel that everything was an effort?) (see Appendix E). Each of the 10 statements are rated from a 1 (none of the time) to 5 (all of the time) scale. Scores can range from 10 to 50, wherein higher scores are indicative of more severe levels of distress. The K10 has been shown to be a highly sensitive measure with strong psychometric properties, including excellent internal consistency and reliability (Kessler et al., 2002). Cronbach’s α in the current study ranged from 0.85 – 0.92.
2.2.6 Social Interaction Anxiety Scale and Social Phobia Scale—Short form (SIAS-6/SPS-6; Peters, Sunderland, Andrews, Rapee, & Mattick, 2012). The SIAS-6/SPS-6 is a measure of social anxiety, and is based on items from the Social Interaction Anxiety Scale (SIAS) and the Social Phobia Scale (SPS). The SIAS-6/SPS-6 is comprised of 12 statements (e.g., I have difficulty making eye contact with others) rated on a 0 (not at all characteristic or true of me) to 4 (extremely characteristic or true of me) (see Appendix F). Score can range from 0 to 48. Comprehensive review of the psychometric properties of the SIAS-6/SPS-6 is still in progress; however, the SIAS-6/SPS-6 has been used in previous ICBT research studies with a reported Cronbach’s α of .92 (Johnston et al., 2011). Cronbach’s α in the current study was 0.90 at both pre-treatment and post-treatment.

2.2.7 Panic Disorder Severity Scale—Self Report (PDSS-SR; Houck, Spiegel, Shear, & Rucci, 2002) The PDSS-SR is a measure of panic disorder symptom severity. The measure is comprised of seven items, each rated on a 0 to 4 scale, with higher scores indicating stronger agreement with the item and more severe panic symptoms (see Appendix G). The PDSS-SR has strong psychometric properties, including high internal consistency and good test-retest reliability (Houck et al., 2002; Wuyek, Anthony, & McCabe, 2010). Cronbach’s α in the current study ranged from 0.89 - 0.90.

2.2.8 Sheehan Disability Scale (SDS; Sheehan, 1983). The SDS is a measure of general impairment in psychosocial functioning. The SDS is comprised of three statements, asking individuals to rate on a 1 to 10 scale how their symptoms have disrupted: work/school work, social life, and family/home responsibilities (see Appendix H). Scores on the SDS can range from 0 to 30, wherein higher scores indicate greater
impairment. The SDS has been found to have strong psychometric properties, including internal consistency and reliability (Leon, Olfson, Portera, Farber, & Sheehan, 1997). Cronbach’s $\alpha$ in the current study ranged from 0.86 – 0.91.

2.2.9 Working Alliance Inventory-Short Revised (WAI-SR; Munder, Wilmers, Leonhart, Linster, & Barth, 2009). The WAI-SR is a 12-item measure designed to assess the overall working relationship between therapist and client (see Appendix I). The WAI-SR consists of three subscales that specifically examine: client-therapist bond, client-therapist agreement on tasks of therapist, and client-therapist agreement on goals of therapy. Individuals rate each item (e.g., I believe my therapist likes me) on a 1 (seldom) to 5 (always) scale, wherein higher scores represent a more favourable alliance between therapist and client. Subscale scores are calculated by summing all items in the subscale, and dividing that total summed score by the number of items (i.e., 4) in each subscale. The WAI-SR has strong psychometric properties, including high internal consistency and reliability and good convergent validity (Munde et al., 2009). Cronbach’s $\alpha$ in the current study was 0.95.

2.3 Procedure

Prior to being accepted into the Wellbeing Course, individuals completed an online screening questionnaire designed to assess initial eligibility (Appendix A). After the online questionnaire was completed, a staff member working for the Online Therapy Unit called the individuals to gather additional information pertaining to issues that may impede treatment such as a diagnosis of bipolar disorder, primary and significant problems with alcohol or drugs, and high suicide risk. Individuals were required to provide the Unit with a medical contact (e.g., family doctor) for emergency purposes.
Following the telephone portion of the screening process, individuals were either accepted into the Wellbeing Course or referred to a more appropriate service (e.g., in-person treatment). Individuals accepted into the Wellbeing Course were randomly assigned into one of three conditions: therapist-initiated contact ($n = 91$); client-initiated contact ($n = 83$); or weekly therapist contact wherein the therapist was a mental health worker in the community ($n = 96$). To maintain procedural fidelity for therapist communications, clients assigned to the condition involving guidance from a mental health worker in the community were not included in the current study. In order to mitigate the potential for treatment protocols to unaccountably differ, only clients assigned to Online Therapy Unit therapists were included in the current study.

Individuals were informed what type of contact could be expected from their therapist throughout treatment (details provided below). Once an individual was accepted into the Wellbeing Course, they completed an extensive battery of questionnaires prior to gaining access to the first lesson of the program. The SHAI, GAD-7, PHQ-9, K10, SIAS-6/SPS-6, PDSS-SR, and SDS were administered at pre-treatment, post-treatment, and 3-month follow up. Further, the GAD-7 and PHQ-9 were administered in conjunction with each of the five lessons. The WAI-SR was administered at post-treatment (see Measures).

### 2.4 Intervention

In the current study, the level of therapist support varied between two groups; however, the intervention (the Wellbeing Course) was identical across groups. Clients were provided with five lessons over the course of eight weeks. In terms of lesson duration, lessons one and three were each designed to take one week to complete
whereas lessons two, four, and five took two weeks to complete; in total, the five lessons were designed to take eight weeks to complete.

The first lesson included educational information about anxiety, low mood, and depression. During the first lesson, the CBT model was introduced, wherein clients were given information about the relationship between unhelpful thoughts, physical symptoms, and unhelpful behaviours. The second lesson focused more specifically on unhelpful thoughts associated with anxiety and depression. The core skill that clients were taught was thought monitoring, which involves being able to identify when an unhelpful thought is occurring, and subsequently challenging that thought. In the third lesson, clients were given information about the physical symptoms that may accompany anxiety and depression. Skills for combating both under- and over-arousal were described. For example, clients were given information about managing under-arousal, as well as a worksheet for scheduling pleasant activities that could be completed as homework. Information about controlled breathing was also presented to clients as a means of managing symptoms of over-arousal related to anxiety. The focus of the fourth lesson was on unhelpful behaviours associated with anxiety and depression, namely avoidance and safety behaviours. The core skill clients were taught for managing unhelpful behaviours was graded exposure. Clients learned that graded exposure for anxiety involves repeatedly exposing themselves to situations that make them anxious, whereas graded exposure for depression involves increasing participation in activities, which has been found to subsequently improve mood. The fifth and final lesson in the course discussed relapse prevention. Relapses were normalized and skills for recognizing and managing relapses were taught.
In addition to the five lessons, the Wellbeing Course provided all clients with additional Resources (e.g., sleep hygiene, assertiveness) that could be accessed at any time. Clients were encouraged to complete Do-It-Yourself (DIY) guides, which are additional resources that accompany each lesson. The DIY guide breaks down central concepts taught in each lesson and provides additional practice activities to be completed as homework (e.g., blank thought challenging worksheet to complete). Clients were able to read Case Stories based on individuals that have previously participated in the Wellbeing Course and access a document detailing Frequently Asked Questions pertaining to each lesson. Automated messages were sent to all clients, which informed them when new lessons were available and providing reminders to complete the weekly symptom measures.

2.4.1 Therapist-initiated contact. In the therapist-initiated condition, clients were contacted via a secure messaging system on a weekly basis. Prior to the onset of treatment, clients were informed which day of the week their therapist would check-in. For the following eight weeks, clients received a message from their assigned therapist on that designated day. The client was required to log into the Online Therapy Unit website to access messages, and were able to choose to reply or not to reply to their therapist’s message. Regardless of whether the client replied, the therapist continued to contact the individual on a weekly basis providing support and encouraging continuation of the course. Most of the contact between therapists and clients was via an online messaging system; however, telephone calls were occasionally made. For example, if the client had not logged into the course for a week, the therapist may have called them in an attempt to engage the client in treatment. The therapist may have also called the client if
safety was a concern, indicated by an increase of five of more points on the PHQ-9 compared to the week prior, or a score of two or more on item nine ("Thoughts that you would be better off dead or of hurting yourself in some way"), indicating the client felt this way more than half the days or nearly every day.

2.4.2 Client-initiated contact. In the client-initiated condition, therapists logged into the Online Therapy Unit website on a weekly basis to determine if the client had initiated contact via an online message. If the client had sent a message to the therapist, the therapist responded answering any questions the client posed, or providing support and motivation. If the client had not sent a message, the therapist did not contact the client, but continued to check back for messages on a weekly basis. In an instance where the therapist had concerns regarding the safety of the client, the therapist contacted the client via telephone, regardless of whether the client had initiated contact. A therapist may have been concerned about safety if the client reported an increase of five of more points on the PHQ-9 compared to the week prior, or a score of two or greater on item nine ("Thoughts that you would be better off dead or of hurting yourself in some way") which indicated the client felt this way more than half the days or nearly every day.

2.5 Analyses

2.5.1 Preliminary and descriptive analyses. Prior to conducting statistical analyses, the data were examined for identification of any outliers and to review the distribution of the data. As missing data was present at post-treatment and 3-month follow up, independent samples t-tests and chi-square tests of independence were employed to compare client characteristics between individuals with and without missing
data on the SHAI. Descriptive statistics were produced for demographic and clinical variables and separated by group (therapist-initiated vs. client-initiated contact).

2.5.2 Primary analyses. Research questions 1 and 2 were examined using a generalized estimating equation (GEE) on clients’ pre-treatment and post-treatment SHAI score. The data were examined for significant time effects, group effects, and time by group interactions. Research questions 3 to 5 were examined through employing a multiple regression using forced entry, wherein change score on the SHAI from pre- to post-treatment was the dependent variable. To examine research question 6, the primary investigator (V. Owens) reviewed 297 messages sent by clients to their therapist for instances in which health anxiety was specifically mentioned. A Kendall’s tau correlational analysis was then employed on clients’ SHAI scores at pre-treatment and the frequency with which health anxiety was mentioned in messages to their therapist. Finally, a supplementary analysis examined whether clients’ healthcare utilization decreased following the intervention. A paired-samples t-test was employed comparing the number of times clients visited their general practitioner (GP) in the eight weeks prior at pre-treatment and at post-treatment.

Results

3.1 Data Preparation

3.1.1 Missing data. A considerable number of clients did not log into their account following completion of the program; as such, a large amount of data on the SHAI were missing at post-treatment (34.4%) and 3-month follow up (70.8%). As such, the data were examined for variables that may be significantly associated with missing SHAI data. A t-test was performed to examine if there was a difference in age between
clients that completed the SHAI at all three time points and clients that had missing
SHAI scores at post-treatment and/or 3-month follow up. There was no statistically
significant difference in age of clients between the two groups, $t(94) = .737, p = .463, d$
$= 0.16$. Individuals who completed the SHAI at all three time points had accessed
significantly more lessons in the program than clients who did not complete the SHAI at
all three time, $t(94) = -3.55, p = .001, d = 0.73$; clients who completed all of the SHAI
measures had accessed an average of 4.89 lessons ($SD = .57$) and clients who did not
complete all of the SHAI measures had accessed an average of 3.91 ($SD = 1.41$) lessons.

Chi-square tests of independence were performed on the remaining demographic
variables to examine whether there were any differences among groups. When
necessary, demographic variables were collapsed into analyzable groups (i.e., Caucasian
vs. non-Caucasian; employed vs. not employed; post-secondary education vs. no post-
secondary education; single vs. some form of relationship; urban vs. rural). No
significant differences were found on demographic variables between clients with
complete and not complete data on the SHAI. There was a statistically significant
difference between clients with missing SHAI data and clients without missing SHAI
data based on which condition the client was randomly assigned to, wherein significantly
more clients in the client-initiated condition had missing SHAI data, $\chi(1) = 6.91, p =
.009, \nu = 0.27$ (see Table 1).

3.1.2 Outliers. Prior to employing statistical analyses, the data was reviewed for
potential outliers on all independent and dependent variables (i.e., SHAI, PHQ-9, GAD-7
at pre-treatment; SHAI at post-treatment and 3-month follow up, number of GP visits).
Client scores on the measures were converted to $z$-scores, and then compared to
<table>
<thead>
<tr>
<th></th>
<th>No missing SHAI values ( (n = 28) )</th>
<th>Missing SHAI values ( (n = 68) )</th>
<th>( t )-value (df)</th>
<th>( p )-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>37.50 (15.45)</td>
<td>39.69 (12.23)</td>
<td>.737 (94)</td>
<td>.463</td>
</tr>
<tr>
<td><strong>Furthest lesson visited</strong></td>
<td>4.89 (.57)</td>
<td>3.91 (1.41)</td>
<td>-4.89 (94)</td>
<td>.001*</td>
</tr>
<tr>
<td><strong>Condition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Therapist-initiated</td>
<td>21 (75.0)</td>
<td>31 (45.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Client-initiated</td>
<td>7 (25.0)</td>
<td>37 (54.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>23 (82.1)</td>
<td>54 (79.4)</td>
<td></td>
<td>.093</td>
</tr>
<tr>
<td>Male</td>
<td>5 (17.9)</td>
<td>14 (20.6)</td>
<td></td>
<td>.760</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>24 (85.7)</td>
<td>57 (83.8)</td>
<td></td>
<td>.054</td>
</tr>
<tr>
<td>Non-Caucasian</td>
<td>4 (14.3)</td>
<td>11 (16.2)</td>
<td></td>
<td>.817</td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working</td>
<td>16 (57.1)</td>
<td>47 (69.1)</td>
<td></td>
<td>.1.26</td>
</tr>
<tr>
<td>Not working</td>
<td>12 (42.9)</td>
<td>21 (30.9)</td>
<td></td>
<td>.262</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some Post-Secondary</td>
<td>22 (78.6)</td>
<td>53 (77.9)</td>
<td></td>
<td>.005</td>
</tr>
<tr>
<td>No Post-Secondary</td>
<td>6 (21.4)</td>
<td>15 (22.1)</td>
<td></td>
<td>.946</td>
</tr>
<tr>
<td><strong>Relationship status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>9 (32.1)</td>
<td>27 (39.7)</td>
<td></td>
<td>.558</td>
</tr>
<tr>
<td>In Relationship</td>
<td>19 (67.9)</td>
<td>40 (58.8)</td>
<td></td>
<td>.455</td>
</tr>
<tr>
<td>Missing data</td>
<td>0 (0)</td>
<td>1 (1.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>21 (75.0)</td>
<td>54 (79.4)</td>
<td></td>
<td>.226</td>
</tr>
<tr>
<td>Rural</td>
<td>7 (25.0)</td>
<td>14 (20.6)</td>
<td></td>
<td>.635</td>
</tr>
<tr>
<td><strong>Diagnosed with mental health disorder</strong></td>
<td>14 (50.0)</td>
<td>39 (57.4)</td>
<td></td>
<td>.434</td>
</tr>
<tr>
<td>No</td>
<td>14 (50.0)</td>
<td>29 (42.6)</td>
<td></td>
<td>.510</td>
</tr>
<tr>
<td><strong>On psychological medication?</strong></td>
<td>16 (57.1)</td>
<td>43 (63.2)</td>
<td></td>
<td>.311</td>
</tr>
<tr>
<td>No</td>
<td>12 (42.9)</td>
<td>25 (36.8)</td>
<td></td>
<td>.577</td>
</tr>
</tbody>
</table>

* \( p < .05 \)
Tabachnick and Fidell’s (2013) recommended criterion of ± 3.29 ($p < .001$) to detect significant outliers. Following the aforementioned guidelines, no extreme scores on the PHQ-9 or GAD-7 were identified; however, two scores on the SHAI were considered to be outliers. At pre-treatment, one client was identified as having an extreme score (SHAI = 41; 3.48 standard deviations above the mean) and at 3-month follow up, one client was identified as having an extreme score (SHAI = 38, 3.38 standard deviations above the mean). As recommended by Tabachnick and Fidell (2013), outlier values were changed to be one unit higher than the next non-extreme score. At pre-treatment, the identified extreme SHAI score was changed to 39 and at 3-month follow up, the extreme SHAI score was changed to 27. Standardized scores were subsequently recalculated and revealed no remaining outliers.

### 3.1.3 Skewness and kurtosis.

Skewness and kurtosis values were calculated for all independent and dependent variables for the sample to screen for normality. The skewness and kurtosis values were converted to z-scores at pre-treatment for the GAD-7 and PHQ-9, and at all three time points (i.e., pre-treatment, post-treatment, 3-month follow up) for the SHAI. The z-scores were then compared to critical values detailed in Field (2013), namely ± 1.96, ± 2.58, and ± 3.29 which determine if the standardized scores are significant at various alpha levels, namely $p < .05$, $p < .01$, and $p < .001$ respectively. As depicted in Table 2, the sample was slightly skewed on the SHAI at pre-treatment.

### 3.2 Descriptive Analyses

#### 3.2.1 Demographic variables.

There were 270 individuals taking part in the Wellbeing Course and 96 of those were deemed eligible and included as participants in
Table 2

Description of Skewness and Kurtosis for Dependent and Independent Variables

<table>
<thead>
<tr>
<th>Measure</th>
<th>Skewness value</th>
<th>Std. error of skewness</th>
<th>Z-score skewness</th>
<th>Kurtosis value</th>
<th>Std. error of kurtosis</th>
<th>Z-score kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHAI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Treatment</td>
<td>0.83</td>
<td>0.25</td>
<td>3.32*</td>
<td>0.49</td>
<td>0.49</td>
<td>1.0</td>
</tr>
<tr>
<td>Post-Treatment</td>
<td>0.47</td>
<td>0.30</td>
<td>1.57</td>
<td>0.87</td>
<td>0.59</td>
<td>1.47</td>
</tr>
<tr>
<td>3-Month Follow Up</td>
<td>0.43</td>
<td>0.44</td>
<td>0.98</td>
<td>-0.02</td>
<td>0.86</td>
<td>-0.02</td>
</tr>
<tr>
<td><strong>GAD-7</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Treatment</td>
<td>-0.35</td>
<td>0.25</td>
<td>-1.40</td>
<td>-0.58</td>
<td>0.49</td>
<td>-1.18</td>
</tr>
<tr>
<td><strong>PHQ-9</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Treatment</td>
<td>0.04</td>
<td>0.25</td>
<td>0.16</td>
<td>-0.74</td>
<td>0.49</td>
<td>-1.51</td>
</tr>
</tbody>
</table>

*Note. Values are rounded to two decimal places. SHAI = Short Health Anxiety Inventory; GAD-7 = Generalized Anxiety Disorder 7-item; PHQ-9 = Patient Health Questionnaire. *Value exceeded critical value of ± 3.29, p <.001 (Field, 2013).*
the current study. There were 52 participants randomly assigned to therapist-initiated contact and 44 randomly assigned to client-initiated contact. Clients ranged in age from 20 to 76 years with an average age of 39.05 ($SD = 13.21$). Most clients were female ($n = 77; 80.2\%$), identified as Caucasian ($n = 81; 84.4\%$), and reported living in a large city ($n = 45; 46.9\%$). Over three quarters of the sample reported post-secondary education ($n = 75; 78.1\%;$ ranging from some college to university graduate degrees), and indicated they were currently employed ($n = 63; 65.6\%$). Most clients reported being married or living with a partner ($n = 59; 61.5\%$), followed by being single ($n = 24; 25.0\%$), with the remainder being separated, divorced, or widowed. Approximately half of the sample reported having been previously diagnosed with a mental health disorder ($n = 53; 55.2\%$), and more than half of the sample reported taking psychological medication at the time of treatment ($n = 59; 61.5\%$). Demographic information separated by group (therapist-initiated and client-initiated contact) is presented in Table 3.

A $t$-test was performed to assess for differences in age between clients assigned to the therapist-initiated contact group and clients assigned to the client-initiated contact group. There was no statistically significant difference between the two groups based on age, $t(94) = .134, p = .883, d = .01$. Chi-square tests of independence were performed on the remaining demographic variables to examine whether there were any differences between groups. Demographic variables that contained more than two categories were collapsed into analyzable groups (i.e., Caucasian vs. non-Caucasian; employed vs. not employed; post-secondary education vs. no post-secondary education; single vs. some form of relationship; urban vs. rural). No significant differences were found between
<table>
<thead>
<tr>
<th></th>
<th>Therapist-initiated contact (n = 52)</th>
<th>Client-initiated contact (n = 44)</th>
<th>M (SD)</th>
<th>M (SD)</th>
<th>t-value (df)</th>
<th>p-value</th>
<th>χ²</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>38.9 (11.1)</td>
<td>39.3 (15.4)</td>
<td>.134 (94)</td>
<td>.883</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>43 (82.7)</td>
<td>34 (77.3)</td>
<td></td>
<td>.441</td>
<td>.507</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td>42 (80.8)</td>
<td>39 (88.6)</td>
<td>1.12</td>
<td>.290</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>28 (53.8)</td>
<td>17 (38.6)</td>
<td></td>
<td>.464</td>
<td>.496</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spanish/Hispanic/Hispanic</td>
<td>14 (26.9)</td>
<td>16 (36.4)</td>
<td></td>
<td>.283</td>
<td>.595</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>10 (19.2)</td>
<td>4 (9.1)</td>
<td></td>
<td>.019</td>
<td>.890</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aboriginal (First Nations)</td>
<td>4 (7.7)</td>
<td>2 (4.5)</td>
<td></td>
<td>.035</td>
<td>.853</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed ethnicity</td>
<td>2 (3.8)</td>
<td>2 (4.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment status</td>
<td>32 (61.5)</td>
<td>31 (70.5)</td>
<td>.840</td>
<td>.359</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working</td>
<td>11 (21.2)</td>
<td>9 (20.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College/some university</td>
<td>23 (44.3)</td>
<td>25 (56.9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University undergraduate</td>
<td>10 (19.2)</td>
<td>4 (9.1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University professional</td>
<td>0</td>
<td>3 (6.8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University graduate degree</td>
<td>8 (15.4)</td>
<td>2 (4.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship status</td>
<td>13 (25.0)</td>
<td>11 (25.0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single/dating</td>
<td>7 (13.5)</td>
<td>7 (15.9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>25 (48.1)</td>
<td>20 (45.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced/separated</td>
<td>6 (11.5)</td>
<td>4 (9.1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>0</td>
<td>2 (4.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing data</td>
<td>1 (1.9)</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large city (&gt; 200,000)</td>
<td>28 (53.8)</td>
<td>17 (38.6)</td>
<td></td>
<td>.283</td>
<td>.595</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small city (10,000-200,000)</td>
<td>14 (26.9)</td>
<td>16 (36.4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Town/Village/Farm</td>
<td>10 (19.2)</td>
<td>11 (25)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnosed with mental</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>health disorder</td>
<td>30 (57.7)</td>
<td>23 (52.3)</td>
<td></td>
<td>.283</td>
<td>.595</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On psychological medication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>36 (69.2)</td>
<td>23 (52.3)</td>
<td>2.89</td>
<td>.089</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>16 (30.8)</td>
<td>21 (47.7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
clients assigned to the therapist-initiated contact group compared to those assigned to the client-initiated contact group.

3.2.2 Treatment engagement variables. Client treatment engagement was assessed using the number of lessons completed by clients as well as the number of messages sent to therapists. On average, clients visited 4.2 ($SD = 1.30$) of five lessons and sent 3.09 ($SD = 3.40$) messages to their therapists; most clients in the client-initiated contact group (i.e., 61.4%) and the therapist-initiated contact group (i.e., 88.6%) sent messages to their therapists. Clients in the therapist-initiated condition accessed significantly more lessons ($M = 4.48; SD = 1.09$) than clients in the client-initiated condition ($M = 3.86; SD = 1.46$) which denoted a significant difference, $t(94) = -2.37, p = .027, d = 0.49$. Further, clients in the therapist-initiated condition sent more messages to their therapists ($M = 4.21; SD = 3.79$) than clients in the client-initiated condition ($m = 1.77; SD = 2.49$), which was significantly different, $t(94) = -3.73, p = .002, d = 0.77$.

The perceived therapist-client relationship, as measured by the WAI-SR, was also examined for potential group differences. No significant differences emerged between individuals in the therapist-initiated versus client-initiated condition on the overall WAI-SR scale, $t(60) = -1.64, p = .106, d = 0.34$; nevertheless, there was a significant difference on the goal subscale of the measure, $t(60) = -2.03, p = .047, d = 0.42$, wherein clients in the therapist-initiated condition reported more favourable views about the agreement between themselves and their therapist on the goals of treatment ($M = 3.34; SD = 1.19$) when compared to the client-initiated group ($M = 2.72; SD = 1.18$) (see Table 4).
Table 4
Descriptive Statistics for Treatment Engagement Variables Separated by Group

<table>
<thead>
<tr>
<th></th>
<th>Therapist-initiated contact (n = 52)</th>
<th>Client-initiated contact (n = 44)</th>
<th>t-value (df)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furthest lesson visited</td>
<td>4.48 (1.09)</td>
<td>3.86 (1.46)</td>
<td>-2.37 (94)</td>
<td>.020*</td>
</tr>
<tr>
<td>Number of messages received</td>
<td>8.02 (1.79)</td>
<td>3.50 (1.62)</td>
<td>-12.98 (94)</td>
<td>.001*</td>
</tr>
<tr>
<td>Number of messages sent</td>
<td>4.21 (3.9)</td>
<td>1.77 (2.49)</td>
<td>-3.73 (94)</td>
<td>.001*</td>
</tr>
<tr>
<td>WAI total</td>
<td>3.69 (.99)</td>
<td>3.26 (1.00)</td>
<td>-1.64 (60)</td>
<td>.106</td>
</tr>
<tr>
<td>WAI bond subscale</td>
<td>4.03 (1.14)</td>
<td>3.52 (1.23)</td>
<td>-1.66 (60)</td>
<td>.102</td>
</tr>
<tr>
<td>WAI task subscale</td>
<td>3.68 (.99)</td>
<td>3.54 (.89)</td>
<td>-.58 (60)</td>
<td>.565</td>
</tr>
<tr>
<td>WAI goal subscale</td>
<td>3.34 (1.19)</td>
<td>2.72 (1.18)</td>
<td>-2.03 (60)</td>
<td>.047*</td>
</tr>
</tbody>
</table>

Note. WAI = Working Alliance Inventory. * p < .05
3.2.3 Clinical variables. Clients in the current study completed questionnaires assessing mental health symptoms across several domains. To be eligible for the present study, clients were required to score 15 or higher on the SHAI at pre-treatment, indicating the presence of elevated health anxiety (Rode et al., 2006). In addition to high levels of health anxiety at pre-treatment, on average, clients were endorsing moderate levels of generalized anxiety on the GAD-7 \((M = 12.74; SD = 4.61)\). At 3-month follow up, anxiety symptoms had decreased to fall within the mild severity range \((M = 6.01; SD = 4.44)\). Initially, depression symptoms for the sample fell within the mild severity range, measured with the PHQ-9 \((M = 12.77; SD = 6.19)\). At 3-month follow up, minimal depression symptoms were reported by the sample \((M = 6.98; SD = 5.36)\). Additional clinical information separated by group has been presented in Table 5.

3.3 Primary Analyses

3.3.1 GEE analysis. A GEE analysis was employed to examine research question 1 and 2, wherein a working correlation was selected, coupled with a robust error estimation. GEE analyses can specify either a normal or gamma with log link response scale; to address skewness and kurtosis, the GEE specified a gamma distribution with a log-link response scale. Due to the abundance of data missing at 3-month follow up, the GEE analysis only examined clients’ pre-treatment and post-treatment SHAI scores. There is emerging evidence that GEE analyses can be effectively employed without imputing missing data (Twisk & de Vente, 2002); however, missing data at post-treatment was ultimately imputed in the current sample using separate generalized linear models which utilized time effects and random intercepts. In addition to preserving sample size, there are several reasons why we chose to impute missing data in the current
<table>
<thead>
<tr>
<th>Measure</th>
<th>Therapist-initiated contact (n = 52)</th>
<th>Client-initiated contact (n = 44)</th>
<th>Combined (N = 96)</th>
<th>t-value (df)</th>
<th>p-value</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHAI</td>
<td></td>
<td></td>
<td></td>
<td>-0.301</td>
<td>.761</td>
<td>21.98</td>
</tr>
<tr>
<td>Pre-Treatment</td>
<td>22.13 (5.69)</td>
<td>21.80 (5.09)</td>
<td>21.98 (5.40)</td>
<td>-0.301</td>
<td>.761</td>
<td></td>
</tr>
<tr>
<td>Post-Treatment</td>
<td>17.46 (7.50)</td>
<td>16.81 (5.46)</td>
<td>17.19 (6.69)</td>
<td>-0.301</td>
<td>.761</td>
<td></td>
</tr>
<tr>
<td>3-Month Follow Up</td>
<td>15.05 (6.03)</td>
<td>13.71 (4.35)</td>
<td>14.71 (5.61)</td>
<td>-0.301</td>
<td>.761</td>
<td></td>
</tr>
<tr>
<td>GAD-7</td>
<td></td>
<td></td>
<td></td>
<td>-2.29 (94)</td>
<td>.024*</td>
<td></td>
</tr>
<tr>
<td>Pre-Treatment</td>
<td>13.71 (4.32)</td>
<td>11.59 (4.73)</td>
<td>12.74 (4.61)</td>
<td>-2.29 (94)</td>
<td>.024*</td>
<td></td>
</tr>
<tr>
<td>Post-Treatment</td>
<td>7.19 (4.58)</td>
<td>4.72 (3.85)</td>
<td>6.13 (4.43)</td>
<td>-2.29 (94)</td>
<td>.024*</td>
<td></td>
</tr>
<tr>
<td>3-Month Follow Up</td>
<td>6.58 (4.49)</td>
<td>5.09 (4.27)</td>
<td>6.01 (4.44)</td>
<td>-2.29 (94)</td>
<td>.024*</td>
<td></td>
</tr>
<tr>
<td>PHQ-9</td>
<td></td>
<td></td>
<td></td>
<td>-1.53 (94)</td>
<td>.129</td>
<td></td>
</tr>
<tr>
<td>Pre-Treatment</td>
<td>13.65 (6.31)</td>
<td>11.72 (5.94)</td>
<td>12.77 (6.19)</td>
<td>-1.53 (94)</td>
<td>.129</td>
<td></td>
</tr>
<tr>
<td>Post-Treatment</td>
<td>7.74 (5.24)</td>
<td>4.69 (4.29)</td>
<td>6.44 (5.07)</td>
<td>-1.53 (94)</td>
<td>.129</td>
<td></td>
</tr>
<tr>
<td>3-Month Follow Up</td>
<td>7.74 (5.66)</td>
<td>5.74 (4.70)</td>
<td>6.98 (5.36)</td>
<td>-1.53 (94)</td>
<td>.129</td>
<td></td>
</tr>
<tr>
<td>K10</td>
<td></td>
<td></td>
<td></td>
<td>-1.14 (94)</td>
<td>.257</td>
<td></td>
</tr>
<tr>
<td>Pre-Treatment</td>
<td>29.27 (6.83)</td>
<td>27.70 (6.54)</td>
<td>28.55 (6.71)</td>
<td>-1.14 (94)</td>
<td>.257</td>
<td></td>
</tr>
<tr>
<td>Post-Treatment</td>
<td>22.58 (7.86)</td>
<td>19.44 (6.47)</td>
<td>21.24 (7.41)</td>
<td>-1.14 (94)</td>
<td>.257</td>
<td></td>
</tr>
<tr>
<td>3-Month Follow Up</td>
<td>21.08 (8.18)</td>
<td>18.48 (6.24)</td>
<td>20.09 (7.56)</td>
<td>-1.14 (94)</td>
<td>.257</td>
<td></td>
</tr>
<tr>
<td>SIAS-6/SPS-6</td>
<td></td>
<td></td>
<td></td>
<td>-2.39 (94)</td>
<td>.019*</td>
<td></td>
</tr>
<tr>
<td>Pre-Treatment</td>
<td>19.69 (10.34)</td>
<td>14.65 (10.24)</td>
<td>17.39 (10.55)</td>
<td>-2.39 (94)</td>
<td>.019*</td>
<td></td>
</tr>
<tr>
<td>Post-Treatment</td>
<td>12.68 (9.31)</td>
<td>11.00 (7.78)</td>
<td>12.00 (8.69)</td>
<td>-2.39 (94)</td>
<td>.019*</td>
<td></td>
</tr>
<tr>
<td>3-Month Follow Up</td>
<td>11.38 (8.51)</td>
<td>5.71 (6.75)</td>
<td>9.96 (8.36)</td>
<td>-2.39 (94)</td>
<td>.019*</td>
<td></td>
</tr>
<tr>
<td>PDSS-SR</td>
<td></td>
<td></td>
<td></td>
<td>-2.50 (94)</td>
<td>.014*</td>
<td></td>
</tr>
<tr>
<td>Pre-Treatment</td>
<td>10.27 (5.86)</td>
<td>7.39 (5.34)</td>
<td>8.95 (5.78)</td>
<td>-2.50 (94)</td>
<td>.014*</td>
<td></td>
</tr>
<tr>
<td>Post-Treatment</td>
<td>5.54 (4.65)</td>
<td>3.96 (3.77)</td>
<td>4.89 (4.35)</td>
<td>-2.50 (94)</td>
<td>.014*</td>
<td></td>
</tr>
<tr>
<td>3-Month Follow Up</td>
<td>4.48 (4.14)</td>
<td>2.14 (2.19)</td>
<td>3.89 (3.58)</td>
<td>-2.50 (94)</td>
<td>.014*</td>
<td></td>
</tr>
<tr>
<td>SDS</td>
<td></td>
<td></td>
<td></td>
<td>-1.90 (94)</td>
<td>.060</td>
<td></td>
</tr>
<tr>
<td>Pre-Treatment</td>
<td>20.02 (6.58)</td>
<td>17.27 (7.56)</td>
<td>18.76 (7.14)</td>
<td>-1.90 (94)</td>
<td>.060</td>
<td></td>
</tr>
<tr>
<td>Post-Treatment</td>
<td>11.19 (7.44)</td>
<td>9.19 (7.69)</td>
<td>10.33 (8.33)</td>
<td>-1.90 (94)</td>
<td>.060</td>
<td></td>
</tr>
<tr>
<td>3-Month Follow Up</td>
<td>11.68 (8.92)</td>
<td>9.35 (7.19)</td>
<td>10.80 (8.33)</td>
<td>-1.90 (94)</td>
<td>.060</td>
<td></td>
</tr>
</tbody>
</table>

Note: SHAI = Short Health Anxiety Inventory; GAD-7 = Generalized Anxiety Disorder 7-item; PHQ-9 = Patient Health Questionnaire; K10 = Kessler Psychological Distress Scale; SIAS-6/SPS-6 = Social Interaction Anxiety Scale and Social Phobia Scale Short form; SPS-6 = Social Phobia Scale-6; PDSS-SR = Panic Disorder Severity Scale-Self Report; SDS = Sheehan Disability Scale. * \( p < .05 \)
study. Missing data is common in randomized control trials, as such, intention-to-treat principles have been developed to address and advise researchers that encounter missing data (Gupta, 2011). Intention-to-treat principles advise that all participants be included in analyses, regardless of whether they had missing data. Researchers assert (i.e., Montori & Guyatt, 2001) aspects of certain interventions may contribute to missing data, as such, it is important to include all participants to be able to generalize results to the entire sample. There is evidence to suggest that GEE analyses may produce biased results when data are not missing completely at random (Paik, 1997); as such, a logistic regression was employed to investigate variables that may predict missing data. The furthest lesson visited was found to predict whether data was missing at post-treatment, and was therefore used as a predictor variable in the model that imputed missing data. There was a significant main effect for time, Wald’s $\chi^2 = 25.05, p < 0.001$; however, there was no main effect for condition ($p = 0.758$) or interaction ($p = 0.411$). See Figure 1 for a depiction of change in SHAI scores and Table 6 for additional information.

Effect sizes and associated 95% confidence intervals were also calculated to aid in the interpretation of results. Pairwise comparisons revealed significant improvements in health anxiety from baseline to post-treatment. Clients in the therapist-initiated contact group reported a decrease in SHAI scores from pre-treatment ($m = 22.04; SD = 5.37$) to post-treatment ($m = 18.35; SD = 6.55$), $d = 0.62$ [0.22 – 1.01], $p < 0.001$. Individuals in the client-initiated contact group experienced a decrease in SHAI scores from pre-treatment ($m = 21.80; SD = 5.03$) to post-treatment ($m = 19.11; SD = 5.30$), $d = 0.52$ [0.09 – 0.94], $p = 0.001$. The between group effect size was $d = .13$ [-0.28 – 0.53].
Figure 1. Change in SHAI scores from pre-treatment to post-treatment separated by group. SHAI = Short Health Anxiety Inventory.
Table 6
*Means, Standard Deviations, and Effect Sizes (Cohen’s d) for the Short Health Anxiety Inventory by Group*

<table>
<thead>
<tr>
<th>SHAI</th>
<th>Estimated marginal means</th>
<th>Percentage change from pre-treatment</th>
<th>Within-group effect size from pre-treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-treatment</td>
<td>Post-treatment</td>
<td>To post-treatment</td>
</tr>
<tr>
<td>Therapist-initiated</td>
<td>22.04 (5.37)</td>
<td>18.35 (6.55)</td>
<td>16.73 [4.83-19.21]</td>
</tr>
<tr>
<td>Client-initiated</td>
<td>21.80 (5.03)</td>
<td>19.11 (5.30)</td>
<td>12.31 [4.83-19.21]</td>
</tr>
</tbody>
</table>

*Note.* SHAI = Short Health Anxiety Inventory. Standard deviations are shown in rounded parentheses for the estimated means; 95% confidence intervals are shown in square parentheses for the percentage changes and effect sizes.
3.3.2 Multiple regression analysis. To address research questions 3 to 5, a multiple regression using forced entry was employed, wherein change score on the SHAI from pre- to post-treatment was the dependent variable. Several assumptions pertaining to the multiple regression were checked prior to interpreting results. A correlation matrix was produced for each of the variables entered as possible predictors to examine multicollinearity. As suggested by Field (2013), potential correlations between predictor variables were compared to a critical value (i.e., $r > .90$). The data did not appear to be higher correlated, indicating the data was likely free from multicollinearity (Field, 2013). Further, the variance inflation factor (VIF) and tolerance statistic for all predictor values was examined and were within an acceptable range (i.e., $VIF < 10$; tolerance $> 0.2$; Field, 2013). The Durbin-Watson statistic was computed to test the assumption of independence of errors. The Durbin-Watson statistic is a value than can range from zero to four. A score of two on the Durbin-Watson statistic indicates the residuals are not substantively correlated, yet, scores ranging from one to three are considered indicative of independence of errors (Field, 2013). For the present sample, the Durbin-Watson statistic was 2.19, indicating the assumption of independence of errors was met. To examine the assumptions of linearity and homoscedasticity, a scatterplot of the standardized residuals against the standardized predicted value was examined. Based on visual assessment, the graph did not appear to curve or present with any form of funneling. The graphed data appeared random, indicating the assumptions of linearity and homoscedasticity were met. To test the normality of the residuals, a p-p plot was produced and the residuals appeared normally distributed along the diagonal line.
Bootstrapping using 1000 samples was used in subsequent analysis to ensure robustness in statistical significance. As seen in Table 7, demographic (sex, education), clinical (symptom severity at pre-treatment), and treatment adherence (furthest lesson visited) variables were not statistically significant predictors of change scores on the SHAI from pre-treatment to post-treatment, yet the multiple regression resulted in a small to medium effect size, $F(5, 57) = 1.58, p > .05, R^2 = .121, f^2 = 0.14$. A post hoc G*Power analysis (Faul, Erdfelder, Lang, & Buchner, 2007) suggested the regression may have lacked sufficient statistical power.

3.3.3 Examination of messages received by therapists. To explore research question 6, a Kendall’s tau was employed on the frequency in which clients mentioned health anxiety and initial health anxiety severity. Prior to conducting a correlational analysis on clients’ SHAI scores at pre-treatment and the frequency with which health anxiety was mentioned to their therapist, the data were screened. As discussed previously, the SHAI at pre-treatment showed signs of a non-normal distribution, as skewness was violated. Bootstrapping using 1000 samples was used in subsequent analysis to address skewness and kurtosis. A Kendall’s tau, a non-parametric correlation, was employed as the analysis does not rely on the assumption of normality (Schaeffer & Levitt, 1956). Kendall’s tau is recommended when several cases are ranked the same value (Field, 2013). In the present sample, many cases were ranked zero (i.e., 89 cases) meaning most clients did not mention health anxiety to their therapists. There were nine statements coded as containing mention of health anxiety. Within the nine statements, five clients mentioned health anxiety once, and two clients mentioned health anxiety twice. Mentions of health anxiety were often brief in messages and were not typically
Table 7
*Multiple Regression Predicting Change in Short Health Anxiety Inventory Scores from Pre-Treatment to Post-Treatment*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Beta (LLCI, ULCI)</th>
<th>SE</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>Constant</td>
<td>-6.38 (-35.68, 1.62)</td>
<td>10.33</td>
<td>.28</td>
</tr>
<tr>
<td>Sex</td>
<td>-.93 (-3.47, 2.78)</td>
<td>1.66</td>
<td>-.07</td>
<td>.57</td>
</tr>
<tr>
<td>Education</td>
<td>-.66 (-1.56, .57)</td>
<td>.51</td>
<td>-.19</td>
<td>.21</td>
</tr>
<tr>
<td>GAD-7 at pre-treatment</td>
<td>.23 (-.36, .60)</td>
<td>.25</td>
<td>.24</td>
<td>.36</td>
</tr>
<tr>
<td>PHQ-9 at pre-treatment</td>
<td>.01 (-.24, .59)</td>
<td>.20</td>
<td>.01</td>
<td>.96</td>
</tr>
<tr>
<td>Furthest lesson visited</td>
<td>2.50 (.20, 10.08)</td>
<td>2.04</td>
<td>.23</td>
<td>.07</td>
</tr>
</tbody>
</table>

*Note.* Confidence intervals reported in parentheses are 95% bias corrected and accelerated confidence intervals based on a 1000 bootstrapped sample. Values are rounded to two decimal places. LLCI = Lower Limit Confidence Interval; ULCI = Upper Limit Confidence Interval; SE = standard error; GAD-7 = Generalized Anxiety Disorder 7-item; PHQ-9 = Patient Health Questionnaire. $R^2 = .121$ ($p > .05$).
elaborated upon. For example, one client discussed an upcoming mammogram, and her health anxiety pertaining to the results from the mammogram. Another client mentioned “My thoughts range from thinking I have a health condition to having some other form of illness”. Overall, the mentions of health anxiety were almost exclusively clients informing their therapists that they do feel anxious about an aspect of their health.

The Kendall’s tau correlation revealed a significant positive relationship between the frequency with which clients mentioned their health anxiety and the initial severity of their health anxiety symptoms, $\tau = .18, p = .041, 95\% \text{ BCa CI } [-.05, .34]$. A supplementary correlation was calculated to investigate whether the number of messages sent to therapists (not specifically containing mention of health anxiety) was correlated with health anxiety severity; the Kendall’s tau revealed no significant correlation, $\tau = .09, p = .233, 95\% \text{ BCa CI } [-.07, .27]$, suggesting individuals experiencing more severe health anxiety symptoms do not necessarily send their therapists more messages.

3.3.4 Supplementary analysis. Researchers have suggested that individuals experiencing elevated health anxiety symptoms often make frequent medical consultations (e.g., Bobevski et al., 2016). High rates of healthcare system utilization are associated with significant economic costs, which potentiate the economic importance of understanding the impact of ICBT on medical service use in individuals experiencing health anxiety. At pre-treatment and post-treatment, clients were asked how many times over the previous eight weeks they had an appointment with their GP. The data were screened for outliers with respect to number of visits to the GP, and outliers were subsequently replaced using the next highest non-extreme score. Bootstrapping using
Figure 2. Average visits to general practitioner in the 8 weeks prior. Error bars represent standard error. *p < .05
1000 samples was used in the subsequent analysis to address non-normality and the potential impact of outliers. As depicted in Figure 2, the paired-samples $t$-test revealed clients visited their GPs less at post-treatment ($M = .63, SE = .12$) than at pre-treatment ($M = 1.02, SE = .14$). The difference was statistically significant and represented a small to medium-sized effect, $t(59) = 2.49, p = .022, 95\%$ BCa CI [0.10, 0.70], $d = 0.38$.

**Discussion**

Health anxiety has been associated with significant personal and economic costs (e.g., Bobevski et al., 2016); due to the extensive burden associated with health anxiety, the availability of effective treatment options is of great importance. Established interventions for health anxiety exist (e.g., Hedman et al., 2011); however, many people with health anxiety remain untreated. Internet-delivered interventions are a novel approach to addressing the treatment gap for a variety of mental health concerns including health anxiety. Internet-delivered interventions, such as ICBT, show great promise in promoting the dissemination of efficacious interventions (Griffiths et al., 2006). Importantly, disorder-specific interventions for health anxiety have been developed with results showing significant reductions in health anxiety symptoms (e.g., Hedman et al., 2011; Newby, Mahoney, et al., 2016); in contrast, transdiagnostic ICBT programs have been under-researched with respect to health anxiety symptoms.

The current study was designed to gain insight into the efficacy of transdiagnostic ICBT in the treatment of health anxiety. Additionally, the level of therapist support (therapist-initiated vs. client-initiated) was explored to assess whether consistent, weekly messages from therapists or optional, as-needed contact from a therapist impacted health anxiety reduction. As no known research has been conducted on implementing
transdiagnostic ICBT with a health anxious population, demographic, clinical, and treatment engagement variables were examined as potential predictors of health anxiety reduction to better understand whether particular individuals may benefit more than others.

Transdiagnostic interventions have been investigated, in part due to the numerous benefits associated with providing individuals a unified protocol. For example, transdiagnostic treatments are able to treat comorbid disorders at the same time (e.g., depression and anxiety). Clients involved in the current study endorsed either anxiety or depression in addition to elevated health anxiety; results indicated clients’ symptoms of health anxiety decreased significantly from pre-treatment to post-treatment. Results lend support to the efficacy of transdiagnostic ICBT in the treatment of mental health concerns. As it is commonplace for individuals experiencing elevated health anxiety to experience comorbid anxiety or depression, a finding reflected in the current sample, transdiagnostic interventions might be viewed as preferable. Yet, it may be important to explore Internet-delivered interventions on symptoms of health anxiety in individuals not endorsing comorbid mental health concerns. A study comparing transdiagnostic ICBT and disorder-specific ICBT for health anxiety would provide insight into the efficacy of both interventions in individuals with a sole concern of health anxiety.

In the current study, the average health anxiety symptoms reported by clients was reduced 16.73% for the therapist-initiated group and 12.31% for the client-initiated contact group. The symptom reductions were statistically significant; additionally, the percentage of change in symptoms was also sizable. In a recent analysis, Hadjistavropoulos and colleagues (manuscript submitted, 2017) analyzed symptom
reduction (measured by PHQ-9, GAD-7, K10, PDSS-SR, SDS, and SIAS-6/SPS-6) for all clients taking part in the Wellbeing Course ($N = 180$), including but not limited to the 96 clients endorsing elevated health anxiety symptomatology included in the current study. Symptoms across almost all measures were reduced by $\geq 30\%$ from pre-treatment to post-treatment (excluding the K10 and SIAS-6/SPS-6 for client-initiated condition). The difference in percentage change for health anxiety versus other symptoms (e.g., panic) suggests that while health anxiety does appear to reduce following transdiagnostic ICBT, symptoms of health anxiety may decrease to a lesser extent than those associated with other mental health concerns.

The current study results indicated the level of therapist support provided to clients might not impact symptom reduction. On average, individuals receiving client-initiated and therapist-initiated contact experienced significant reductions in health anxiety symptoms; however, clients receiving consistent weekly messages from their therapist displayed more favourable treatment engagement in that more lessons were accessed and more messages were sent to their therapist. Future research is warranted to clarify the role of therapist contact on symptom reduction and treatment engagement.

The current study was also designed to determine whether demographic, clinical, and treatment adherence variables predict health anxiety symptom reduction from pre-treatment to post-treatment. Research that examines individual suitability for transdiagnostic ICBT can inform future practices in the Online Therapy Unit. For example, if being male and under the age of 25 consistently predicted poorer treatment outcome, potential clients within those demographic domains may be referred to other mental health resources (i.e., in-person services) prior to committing to an Internet
intervention. Furthermore, if a certain demographic or population does not benefit as significantly from ICBT, future research may focus on finding ways of promoting treatment engagement and examining variables that may be contributing to lack of efficacy.

The variables examined in the current study (i.e., gender, education, depression and anxiety severity at pre-treatment, and furthest lesson visited) did not predict reductions in health anxiety symptoms, contrary to the hypotheses set forth. The lack of significant predictors may suggest that a wide range of individuals are appropriate for, and can likely benefit from, transdiagnostic ICBT. Results from the current study differed from that reported in the literature. For example, when examining predictors of treatment outcome following a disorder-specific ICBT program designed specifically for treating health anxiety, Hedman and colleagues (2013) found the number of lessons clients accessed predicted greater reduction in symptoms at 6-month follow up. The current study examined predictors of health anxiety reduction immediately following treatment rather than predictors at 6-month follow-up. Additional ICBT research has indicated that being female, having higher levels of education, accessing more lessons, and presenting with greater symptom severity at pre-treatment is predictive of more favourable treatment outcome (El Alaoui et al., 2015; Hadjistavropoulos, Pugh, et al., 2016). As denoted by Andersson and Titov (2014), research shows a lack of consensus with regard to predictors of ICBT treatment success, which may be due to the relatively new nature of the field; additional research may elucidate for whom this novel treatment is most effective. The sample size in the current study appeared to limit the power and potentiate the probability of committing a type II error.
Messages sent by clients to their therapists \((N = 297)\) were reviewed for potential instances when health anxiety was explicitly mentioned. The correlation between symptom severity at pre-treatment and the frequency in which clients mention health anxiety was examined. There was no \textit{a priori} directional hypothesis given the relatively nascent state of current research in the area. In the current study, clients experiencing more severe health anxiety symptoms were more likely to explicitly discuss health anxiety in their messages to therapists. The Wellbeing Course is described on the Online Therapy Unit website as helping “\textit{clients manage depression and anxiety}”; accordingly, we assumed potential clients would not likely be seeking treatment primarily for health anxiety. Despite our expectations, a small number of clients with severe health anxiety may have been seeking support specifically for health anxiety based on the content of their emails to therapists. Further, more clients who reported severe health anxiety symptoms might have discussed their concerns had their therapist specifically asked. In the current study, experiencing more elevated health anxiety symptoms was correlated with greater frequency of discussing health anxiety in messages to therapists; yet experiencing more elevated health anxiety was not associated with an increase in number of emails sent. The consistency in number of messages sent between clients with varying levels of health anxiety symptoms suggest that clients may not have been engaging in frequent reassurance-seeking from their therapists, as might be indicated by significantly more messages sent by clients experiencing more severe health anxiety.

The current study sought to examine healthcare utilization change in clients, as research suggests that individuals experiencing elevated health anxiety often seek more healthcare services than non-anxious individuals (Fink et al., 2010). At pre-treatment,
post-treatment, and 3-month follow up, clients were asked, “Please indicate the number of visits you have made to your general practitioner/family doctor in the past 8 weeks”. As examined in a supplementary analysis, clients visited their GP significantly less from pre-treatment to post-treatment. Results suggest that one frequent behavioural symptom observed in individuals with health anxiety (i.e., healthcare utilization) may be reduced following transdiagnostic ICBT. However, clients’ responses at 3-month follow up were not able to be examined due to the abundance of missing data (i.e., 70.8%). An important consideration to the supplementary analysis should be noted; at post-treatment, clients were asked to indicate the number of visits to their GP in the past eight weeks, however, this timeframe overlaps almost completely with the duration of the treatment protocol. For instance, if a client was referred to the Wellbeing Course by their GP, they may have been advised to schedule a follow up appointment after completing the program, therefore resulting in a significant reduction in GP visits for the duration of the Wellbeing Course. A comparison of GP visits from pre-treatment to 3-month follow up may have been a more informative analysis in terms of examining clients’ healthcare utilization.

The centrality of treatment engagement is a prevalent notion in the ICBT literature. Previous researchers have described treatment acceptability and treatment outcome as synonymous with treatment engagement (e.g., Andrews et al., 2010; El Alaoui et al., 2015). As such, an investigation into potential group differences with respect to treatment engagement was conducted comparing clients receiving therapist-initiated to those receiving client-initiated contact. The current study evidenced that clients receiving therapist-initiated contact completed more lessons and sent more
messages to their therapists than those receiving client-initiated contact. Previous researchers have found similar results—clients receiving consistent, weekly contact from a therapist appear to be more engaged in treatment (Oromendia et al., 2016); however, contrary to Oromendia and colleagues (2016) who found only 15% of clients receiving client-initiated contact sought out communication with their therapists, most clients (i.e., 61%) receiving client-initiated contact in the current study sought therapist communication. In the study by Oromendia et al. (2016), clients were required to schedule a telephone call with their therapist in order to receive support, whereas in the current study, clients could initiate therapist contact and receive support via messaging. Discrepancies between the two studies may indicate that providing greater ease of access to therapists facilitates clients initiating communication.

Clients receiving therapist-initiated contact in the current study completed more lessons, but discrepant results have been reported. For example, Dear, Gandy, and colleagues (2015), found no differences in terms of treatment engagement between three treatment groups receiving therapist-initiated, client-initiated, or no contact. Intervention protocol differences (i.e., content of lessons, therapist contact, use of automated messages) between the current study and Dear, Gandy, and colleagues (2015) were quite similar. Accordingly, replication research is needed to clarify the differences.

The WAI-SR measures the perceived working relationship between therapist and client and was explored to assess treatment engagement. In the current sample, most of the ratings on the subscales of the WAI-SR indicate a high positive alliance was formed between clients and their therapists (Jasper et al., 2014). Interestingly, a difference emerged on the ‘goal’ subscale of the WAI-SR between individuals receiving therapist-
initiated and client-initiated contact. In the current sample, clients receiving consistent, weekly messages from their therapist felt a stronger alliance between themselves and their therapist with respect to setting therapy goals. When the data from all clients taking part in the Wellbeing Course ($N = 180$) were analyzed, including but not limited to the 96 clients endorsing elevated health anxiety symptoms included in the current study, different results were found (Hadjistavropoulos et al., submitted manuscript, 2017); specifically, clients receiving therapist-initiated and client-initiated contact differed on the WAI-SR ‘bond’ subscale ($p < .001$), wherein clients receiving therapist-initiated contact endorsed a higher affective bond with their therapist; clients receiving therapist-initiated and client-initiated contact differed to a lesser degree on the ‘goal’ subscale ($p = .020$). The differences found when clients without health anxiety were included in analyses underscores the need for more research.

4.1 Limitations and Future Research Directions

The current study is the first to examine the impact of transdiagnostic ICBT on health anxiety. There were several strengths, including use of an established clinical modality, a clinical sample, and a randomized design; nevertheless, there are limitations that offer directions for future research. First, missing data on the SHAI occurred at post-treatment and 3-month follow up; notably, the significant proportion of data missing at 3-month follow up limited the possibility to conduct meaningful analyses for this time point. The Online Therapy Unit has offered ICBT to Saskatchewan residents since 2010 and has recently taken several steps to reduce the amount of missing data on primary measures, specifically the PHQ-9 and GAD-7. Previously, to complete measures, clients were required to log into the Online Therapy Unit website; however, clients reported
difficulties remembering their username and password to login, especially three months following treatment. As such, primary measures are now also hosted on FluidSurveys and emailed to clients to complete in the event they can no longer login. Unfortunately, the SHAI and additional secondary measures (e.g., PDSS-SR, K10) were not included on FluidSurveys.

As the SHAI data was unable to be analyzed at the 3-month follow up time point due to excess missing data, the current study was unable to explore the maintenance of health anxiety reduction following a transdiagnostic ICBT program. There were no differences in health anxiety reduction between the two levels of therapist support explored (i.e., therapist-initiated vs. client-initiated), yet, it is possible that differences may have emerged at 3-month follow up (e.g., Dear et al., 2013). Future research should ensure the SHAI is completed at post-treatment and 3-month follow up to facilitate a more meaningful understanding of the long-term effects of transdiagnostic ICBT on health anxiety, as well as a more thorough analysis of the impact of therapist-initiated and client-initiated contact.

Data was imputed for the GEE analysis, consistent with intention-to-treatment principles and other related ICBT research (e.g., Dear, Staples, et al., 2015; Hadjistavropoulos, Nugent, et al., 2016). Model-based imputation techniques, which was selected in the GEE analysis, are generally considered to result in more unbiased estimates of treatment effects as compared to other imputation techniques, such as last observation carried forward (Armijo-Olivo, Warren, & Magee, 2009). While some researchers assert that instances when data is not missing completely at random may introduce bias to a GEE analysis (e.g., Paik, 1997), other researchers have found that the
imputation technique utilized by GEE analyses are unbiased, even when data may not be missing completely at random (Armijo-Olivo et al., 2009). Regardless, data was imputed in the current study and as such, it is important to note that data imputation may lead to an underestimation of the overall time effect of the GEE analysis (Twisk & de Vente, 2002). Health anxiety symptoms were found to significantly decrease from pre-treatment to post-treatment, yet, it is possible that even more favourable reductions may have been found had missing data not been present.

A potential limitation to the current study is the way in which messages sent by clients to their therapist were coded for the presence of health anxiety discussion. In the examination of the messages, clients appeared to have discussed elements consistent with elevated health anxiety (e.g., frequent medical consultations for medication changes) while not explicitly indicating they were experiencing health anxiety. Future research may examine messages for more subtle forms of communicating anxiety pertaining to health which could ultimately inform ways to improve the Wellbeing Course. Additionally, online therapists are not trained nor encouraged to query about health anxiety when communicating with their clients. In the future, a portion of the training online therapists complete may include a section specific to learning about health anxiety. This may allow for therapists to be more able to comment on and facilitate the application of skills learned in the Wellbeing Course to health anxiety symptomatology. Further, the addition of a health anxiety Resource to the program, or perhaps the addition of a Case Story from an individual experiencing elevated health anxiety may be beneficial to clients. The skills learned in the Wellbeing Course (e.g., thought challenging) can be applied to health anxiety, yet clients may benefit by
reviewing information specific to health anxiety and how symptoms may impact day-to-day functioning.

In the current study, the SHAI was administered to clients at pre-treatment, post-treatment, and 3-month follow up. Despite being able to draw conclusions about the overall impact of a transdiagnostic ICBT program on health anxiety, we were not able to assess change in health anxiety symptoms neither on a week-to-week basis nor on a long-term basis. Additionally, health anxiety symptoms were assessed using only one measure, the SHAI. It may be beneficial to assess health anxiety symptoms using a variety of measures in order to better capture and understand clients’ symptoms.

An additional limitation of the current study pertains to the sample’s demographics. ICBT is associated with numerous benefits that supersede traditional in-person services; one frequently stated benefit is the ability for ICBT to reach populations that may not have access to psychological services. It is commonly asserted individuals that may not be able to afford psychological services (low socioeconomic status) or individuals living in rural communities are well-suited for Internet-delivered interventions. However, the majority of the current sample was comprised of highly educated, Caucasian women living in a city. The demographic profile from clients involved in the current study reflects that of other ICBT research (e.g., Hadjistavropoulos, Nugent, et al., 2016), yet, it is important to consider that results presented in the current study and perhaps in other ICBT literature may not generalize to poorly represented demographics (e.g., Aboriginal ethnicity, rural location, lower socioeconomic status).
Some results from the current study highlight important directions for future research. For instance, it may be beneficial to replicate the current study with a larger sample size to ensure sufficient statistical power for detecting significant effects. Additionally, treatment engagement was found to be higher for clients in the therapist-initiated condition than individuals in the client-initiated condition; this result differs from previous research (e.g., Dear, Gandy, et al., 2015). Accordingly more research is needed to better understand the role of weekly therapist contact on treatment engagement. In the current study, clients were randomly assigned to varying levels of therapist support; while randomized controlled trials are crucial, future research may benefit from taking a more ‘client-centered’ approach to treatment. Consideration of client preferences with respect to treatment has been regarded as an important facet, and has led to greater treatment adherence and treatment engagement (e.g., Johansson, Nyblom, Carlbring, Cuijpers, & Andersson, 2013; Swift, Callahan, & Vollmer, 2010). Prior to accessing ICBT, individuals may have a preference as to the amount of therapist contact they would like to receive. Future research may replicate the current study with a sample of individuals that choose (rather than were randomly assigned) to receive either therapist-initiated or client-initiated contact. In this way, future research may delineate whether the level of therapist support provided (therapist-initiated vs. client-initiated) contributes to more favourable treatment engagement or rather, whether ensuring the level of therapist support provided is consistent with the client’s wishes ultimately promotes treatment engagement.

The SHAI was administered at three time points in the current study; yet, future studies may consider administering the SHAI at more frequent intervals. For example, if
the SHAI was administered at the end of each lesson, results may elucidate whether certain lessons and certain skills (i.e., graded exposure) or whether transdiagnostic ICBT as a whole is more impactful to health anxiety reduction. Further, including additional measures of health anxiety (e.g., Illness Attitude Scales, Whiteley Index) may be beneficial to better understand the symptomatology clients are experiencing. Through better understanding a client’s health anxious thoughts and behaviours, therapists may be able to broach a discussion pertaining to health anxiety with their clients. Perhaps further measures may additionally be administered to clients to examine potential mechanisms of change in symptoms of health anxiety. Hedman, Andersson, and colleagues (2013) explored mechanisms of change in health anxiety symptoms resulting from disorder-specific ICBT for severe health anxiety. The researchers found that intolerance of uncertainty, characterized by an individual’s inability to accept that a negative outcome may occur regardless of the probability of the occurrence (Carleton, Norton, Asmundson, 2007), mediated the effect of treatment. Participants that showed more notable reductions in their need to know the meaning of bodily sensations (i.e., intolerance of uncertainty) also showed larger reductions in health anxiety symptoms (Hedman, Andersson, et al., 2013). However, the researchers indicate that a proper measure of intolerance of uncertainty was not used, rather was inferred based on a subscale from a specific measure of health anxiety. As such, it may be important for future research to administer a measure specific to intolerance of uncertainty (i.e., Intolerance of Uncertainty Scale-12; Carleton et al., 2007) to better understand the role mechanisms of change may have on health anxiety reduction; having a more thorough understanding of
the mechanisms of change involved in health anxiety reduction could inform future transdiagnostic ICBT programs what information is pertinent to include.

As articulated by the Mental Health Commission of Canada (2017), there is a notable disconnect between clients that Internet-delivered interventions seek to reach (e.g., low socioeconomic status, rurally located) and that of the actual demographic profile ICBT research often recruits. ICBT research often result in a sample comprised of highly educated city dwellers (Mental Health Commission of Canada, 2017), as was observed in the current study. Future research may focus recruitment strategies specifically on poorly represented demographics (e.g., Aboriginal peoples) to better understand the generalizability of results found in the current study as well as in other ICBT research.

Of the 180 clients that accessed the Wellbeing Course, over 50% scored 15 or higher on the SHAI, indicating many clients that utilize the Online Therapy Unit are quite health anxious. The high percentage of clients assessing the Wellbeing Course that are experiencing symptoms of health anxiety further lends support to the addition of a health anxiety Resource, or the addition of a Case Story relevant to health anxiety. The sample for the current study was comprised of individuals experiencing elevated levels of health anxiety; however, clients may not have been seeking treatment solely, or at all, for health anxiety as to be deemed eligible for the program, clients needed to endorse symptoms of anxiety or depression. As such, the results presented for the current study may not generalize to individuals experiencing health anxiety in primary care settings (e.g., medical clinics) or to individuals experiencing health anxiety without co-occurring anxiety and depression symptoms. New evidence suggests ICBT is considered equally
acceptable when compared to in-person CBT, but that in-person services are still preferred among primary care individuals experiencing health anxiety (Soucy & Hadjistavropoulos, 2017). Future researchers should also implement and investigate the efficacy of transdiagnostic ICBT in primary care populations, as well as in individuals seeking treatment primarily for health anxiety symptoms.

4.2 Conclusions

The current study was designed to examine the impact of transdiagnostic ICBT on symptoms of health anxiety. Results revealed that symptoms of health anxiety significantly reduced from pre-treatment to post-treatment; however, health anxiety appeared to reduce to a lesser extent than symptoms of depression, anxiety, panic, and social anxiety when compared to a larger sample of clients taking part in a transdiagnostic intervention. The level of therapist support provided to clients, specifically therapist-initiated or client-initiated contact, did not appear to impact health anxiety reduction. The level of therapist support provided to clients did impact treatment engagement in the current sample, wherein clients that received therapist-initiated contact accessed more lessons and sent more messages to their therapist. Future research is warranted to better understand the role of therapist support on symptom reduction, as well as to further examine the efficacy of transdiagnostic ICBT in the treatment of health anxiety.
References


Childress, C. A. (2000). Ethical issues in providing online psychotherapeutic interventions. *Journal of Medical Internet Research, 2*, e5. doi: 10.2196/jmir.2.1.e5


doi:10.1016/j.janxdis.2015.10.006


doi:10.1177/0081246314538733


doi:10.1016/j.janxdis.2008.01.008


doi:10.1016/j.jbtep.2005.07.001


doi:10.1046/j.1525-1497.2001.016009606.x


Appendix A

Online Screening Questionnaire

Part One-Basic Eligibility Questions

Thank you for consenting to take part in the Online Screening. As mentioned in the consent form, in this part of the screening, you will be asked some basic eligibility questions. If your responses indicate that you do not meet the basic eligibility requirements to take part in one of our courses, you will receive an immediate computer generated response informing you that you are not eligible and you will not be asked any further questions.

Basic Eligibility Questions

Are you currently experiencing any of the following symptoms? Anxiety, worry, difficulties with depression, loss of pleasure in activities, and/or pain.

○ Yes
○ No

(If “no” - At this time, the Online Therapy Unit can only offer services to individuals who are experiencing some symptoms of anxiety, depression, and/or pain.

In the future, we hope to be able to offer Online Therapy for a wider range of mental health concerns. If you have questions about this requirement for our courses please feel free to contact the Online Therapy Unit by phoning 306-337-3331 or emailing Online.Therapy.User@uregina.ca Please click the Next button to end the survey).

Are you a Saskatchewan Resident and intending to be in Saskatchewan while participating in the 8 week course?

○ Yes
○ No

(If “no” - At this time, the Online Therapy Unit is only able to offer services to individuals who reside in Saskatchewan and are intending to be in Saskatchewan while participating in the 8 week course. Given that you are not living in Saskatchewan or available for the 8 weeks course, you are not eligible for our courses at this time.)
If you have questions about this requirement for our courses please feel free to contact the Online Therapy Unit by phoning 306-337-3331 or emailing Online.Therapy.User@uregina.ca Please click the Next button to end the survey)

Are you 18 years of age or older?

○ Yes

○ No

(If “no” - At this time, the Online Therapy Unit can only offer services to individuals who are 18 years of age or older. As a result, you are not eligible for services.

Our courses are designed for treatment of adults with anxiety, depression, and/or pain. In order to take part, individuals must be a minimum of 18 years old as of the date of consent. If you have questions about this requirement for our courses please feel free to contact the Online Therapy Unit by phoning 306-337-3331 or emailing Online.Therapy.User@uregina.ca Please click the Next button to end the survey).

Do you have access to a computer, printer, and internet at home or in a place where it is appropriate to use a computer for personal use?

○ Yes

○ No

(If “no” - At this time, the Online Therapy Unit can only offer our courses to individuals who have access to a computer and internet in a secure environment. Unfortunately, because you do not have access to a computer in a secure environment, you are not eligible for our courses at this time.

Our courses are time-limited and involve logging onto a secure website on a frequent basis over a period of 8 weeks to review materials and complete questionnaires. Participants also correspond with staff over a secure email. Without having personal access to a computer and internet it is very difficult to fully engage in this form of treatment. Additionally, in order to keep your personal information secure, it is best to be able to access a computer from a personal computer in a private environment. If you have questions about this requirement for our courses please feel free to contact the Online Therapy Unit by phoning 306-337-3331 or emailing Online.Therapy.User@uregina.ca Please click the Next button to end the survey).

Do you feel comfortable using the internet and writing emails?

○ Yes

○ No
(If “no” - At this time, the Online Therapy Unit is only able to offer services to individuals who feel comfortable using a computer as our courses involve quite extensive use of the computer. As a result, you are not eligible to participate at this time.

Our courses require quite extensive use of the computer to review materials online. People that have taken part in our program in the past have said that having the skills to use the computer was very important and that they would have experienced difficulties if they did not have solid computer skills. If you have questions about this requirement for our courses please feel free to contact the Online Therapy Unit by phoning 306-337-3331 or emailing Online.Therapy.User@uregina.ca Please click the Next button to end the survey).

Do you feel that you will have the time available over the next 8 weeks to consistently work through one of our courses? Participants need at least 1 hour per week to work on our courses. Many participants spend 3 hours reviewing materials and practicing skills to improve wellbeing.

- Yes
- No

(If “no” - The Online Therapy Unit can only offer services to individuals who will have time to actively work on our courses. As a result, you are not eligible for services.

Our courses require participants to review materials and work on various tasks on a weekly basis for approximately 8 weeks. Our courses are meant to be short-term and quite intensive. If in the future, your circumstances change and you will have time available each week to work on a course, please return to the website and complete the Online Screening at that time. If you have questions about this requirement for our courses please feel free to contact the Online Therapy Unit by phoning 306-337-3331 or emailing Online.Therapy.User@uregina.ca Please click the Next button to end the survey).

If accepted into one of the Online Therapy Unit courses, are you willing to provide the Online Therapy Unit with a medical contact (e.g., Family Physician or Nurse Practitioner) for emergency purposes?

- Yes
- No

(If “no” - The Online Therapy Unit is only able to offer our courses to individuals if we have a medical contact for emergency purposes. As a result, you are not eligible for our courses at this time.)
We understand that you may not want to share information about your participation in this course with other professionals. For safety reasons, however, we feel it is necessary to have a medical contact in your community that is aware of your participation in our program and who can help you in person if an emergency were to arise. If you have questions about this requirement for our courses please feel free to contact the Online Therapy Unit by phoning 306-337-3331 or emailing Online.Therapy.User@uregina.ca Please click the Next button to end the survey).

Thank-you for completing the basic eligibility questions. It appears that you meet the basic requirements for one of our studies on the Wellbeing Course or Pain Course.

The next section of the screening will ask you to provide more detailed information about yourself and your current situation to help Online Therapy Unit staff understand your current needs. The information collected in this part of the screening will be discussed with you in the follow up telephone conversation with an Online Therapy Unit staff member. You will not receive any automated computer responses as you answer these questions.

REMINDER

The Online Therapy Unit does not provide an emergency or crisis response service. If you are feeling suicidal or in a crisis please exit this screening and seek help immediately. Call emergency services by dialing 9-1-1 (Ambulance/Police/Fire Service) OR Present at your local hospital emergency department

Demographic and Contact Information

First Name: ____________
Last Name: ____________
Street Address: ____________
City/Town: ____________
Province: ____________
Postal Code: ____________

How would you describe the location that you live?

- Large City (population over 200 000)
- Small to Medium City (population of 10 000-200 000)
- Town or Village
- Farm
Which health region do you belong to?

- Reserve
- Cypress
- Five Hills
- Heartland
- Keewatin Yatthé
- Kelsey Trail
- Mamawetan Churchill River
- Prairie North
- Prince Albert Parkland
- Regina Qu'Appelle
- Saskatoon
- Sun Country
- Sunrise
- I am not sure

Phone Number: ____________

Online Therapy Unit staff will contact you, either by phone or email, to schedule a discussion of your results and treatment options. Example: 306-555-5555

Do you feel comfortable with us leaving a voicemail or message for you at this phone number?

- Yes
- No, please explain ______________________

Email address: ____________

Please retype your email address: ____________

Age: ____________

Sex

- Male
- Female
I choose not to disclose

Other

**What is your date of birth?**

____/__/__ (YYYY/MM/DD)

**What is your highest level of education?**

- Less than high school
- High school diploma
- College certificate or diploma
- Some university
- University undergraduate degree
- University professional degree (e.g., MD)
- University graduate degree (e.g., MA, PhD)

**Which category best represents your employment status?**

Please select the best answer

- Employed Full-time
- Unemployed
- On short-term disability
- Employed part-time
- Homemaker
- Retired
- Student
- On long-term disability

**What is your occupation?**

- Service/Retail, please specify... ______________________
- Trades/Labour, please specify... ______________________
- Health/Medical, please specify... ______________________
- Education/Research, please specify... ______________________
- Business/Finance/Administration, please specify... ______________________
○ Farming/Mining/Oil, please specify... ______________________
○ Entertainment/Arts, please specify... ______________________
○ Science/Technology, please specify... ______________________
○ Law Enforcement/Security/Military, please specify... ______________________
○ Other, please specify... ______________________

How would you describe your ethnicity?
○ White / Caucasian
○ Spanish / Hispanic / Latino
○ Black / African American
○ Asian
○ Pacific Islander
○ First Nations
○ Metis
○ Mixed ethnicity
○ Other, please specify... ______________________

How did you hear about the Online Therapy Unit?
○ Printed poster or card
○ Media (e.g., newspaper, radio, TV, talks)
○ Online source (e.g., website or email)
○ Friend/family member/Employer
○ Physician or other medical health professional
○ Mental health professional or health region intake
○ Other, please specify... ______________________

Medical Contact
The Online Therapy Unit involves receiving treatment over the Internet, and, therefore, we are unable to provide support in the case of an emergency. For this reason, we ask individuals that are interested in this service to provide a medical contact (Family doctor, Psychiatrist, or Nurse Practitioner) who they have seen in person in the past. If you are accepted into treatment and provided a username and password for treatment we will:1) Send a letter to the medical contact notifying them of the nature of our Online Therapy
Unit courses and your participation; and 2) In the event of an emergency (e.g., concern about suicide), contact the medical provider if we become concerned about your safety and need to coordinate care.

**Name of Medical Contact:** ____________

**Type of Medical Contact**
- o Family Doctor/Physician
- o Psychiatrist
- o Nurse Practitioner

**Clinic Name (if available) :** ____________

**Clinic Phone Number:** ____________  
(e.g., 555-555-5555)

**Clinic Street Address:** ____________

**City/Town:** ____________

**Postal Code:** ____________

**Over the last 2 weeks, how often have you been bothered by any of the following problems?**

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little interest or pleasure in doing things</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Feeling down, depressed, or hopeless</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Trouble falling or staying asleep, or sleeping too much</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Feeling tired or having little energy</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Poor appetite or overeating</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Feeling bad about yourself – or that you are a failure or have let yourself or your family down</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Trouble concentrating on things, such as reading the newspaper or watching</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
</tbody>
</table>
television

Moving or speaking so slowly that other people could have noticed? Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual

Thoughts that you would be better off dead or of hurting yourself in some way

Roughly when did you first start having these difficulties? (2 months ago, 2 years ago, etc.)

- Never
- Less than a month
- 1-6 months
- 7-12 months
- 1-3 years
- Over 3 Years

Roughly how many distinct episodes of depression do you feel you have had in your lifetime?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>A great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you often worry about the possibility that you have got a serious illness?</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>2. Are you bothered by many aches and pains?</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>3. Do you find that you are often aware of various things happening in your body?</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>4. Do you worry a lot about your health?</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
</tbody>
</table>
5. Do you often have the symptoms of very serious illnesses?  

6. If a disease is brought to your attention (through the radio, television, newspapers or someone you know) do you worry about getting it yourself?  

7. If you feel ill and someone tells you that you are looking better, do you become annoyed?  

8. Do you find that you are bothered by many different symptoms?  

9. Is it easy for you to forget about yourself and think about all sorts of other things?  

10. Is it hard for you to believe the doctor when he tells you there is nothing for you to worry about?  

11. Do you get the feeling that people are not taking your illness seriously enough?  

12. Do you think that you worry about your health more than most people?  

13. Do you think there is something seriously wrong with your body?  

14. Are you afraid of illness?
Over the last 2 weeks, how often have you been bothered by any of the following problems?

<table>
<thead>
<tr>
<th>Problem</th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling nervous, anxious or on edge</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Not being able to stop or control worrying</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Worrying too much about different things</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Trouble relaxing</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Being so restless that it is hard to sit still</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Becoming easily annoyed or irritable</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Feeling afraid as if something awful might happen</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

Roughly when did you first start having these difficulties? (2 months ago, 2 years ago, etc.)

- Never
- Less than a month
- 1-6 months
- 7-12 months
- 1-3 years
- Over 3 Years

Roughly how many episodes of anxiety have you had in your lifetime? :

____________
Has anything happened to cause problems with anxiety and depression to get worse?

- Yes
- No

Please explain: ____________

What is your relationship status?

- Single, Never Married
- Married
- Living with Partner
- Separated
- Divorced
- Widowed

If you are in a relationship, will your partner know that you are receiving services from us?

- Yes
- No, please explain ______________________

If you are in a relationship, do you have any concerns regarding your relationship at this time?

- Yes
- No

Please explain difficulties you are experiencing in your relationship: ____________

Do you have children?

- No
- Yes, How many? ______________________

What ages are your children? : ____________

Do you have any concerns regarding your children at this time?

- No
- Yes

Please explain: ____________
What are your current living arrangements?
- living alone
- living with spouse or partner
- living with spouse or partner and children
- living with children
- living with extended family
- living with roommates
- Other

Are you currently experiencing trouble with anxiety in social situations?
- Yes
- No

Please briefly explain the trouble you have in social situations: ____________

Are you experiencing any legal difficulties at this time?
- Yes
- No

Please briefly explain the legal difficulties you are experiencing: ____________

Do you feel you are able to ask for help when things are not going well?
- Yes
- No

Are there persons in your life who help you if you need them to?
- Yes
- No

Who do you rely on for support?
- Spouse
- Children
- Parents
□ Extended family
□ Friends
□ Coworkers
□ Medical professional
□ Other, please specify... ______________________

The symptoms have disrupted your work / school work: (Work includes paid, unpaid volunteer work or training)

○ 0 – not at all
○ 1
○ 2
○ 3
○ 4
○ 5
○ 6
○ 7
○ 8
○ 9
○ 10 – extremely
○ I have not worked / studied at all during the past week for reasons unrelated to the disorder

The symptoms have disrupted your social life / leisure activities:

○ 0 – not at all
○ 1
○ 2
○ 3
○ 4
○ 5
○ 6
○ 7
The symptoms have disrupted your family life / home responsibilities:

- 0 – not at all
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 – extremely

On how many days in the last week did your symptoms cause you to miss school or work or leave you unable to carry out your normal daily responsibilities?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7

On how many days in the last week did you feel so impaired by your symptoms, that even though you went to school or work, your productivity was reduced?

- 0
- 1
Have you had any problems with your sleep, appetite, energy level, or sexual activity?

- Yes
- No

Please provide details of the difficulties you have been having (e.g., weight loss, sleep loss, change in energy). : ____________

How do you usually cope with your symptoms of anxiety and/or depression? : ____________

Do you have any thoughts about what would help you cope with your symptoms of anxiety and/or depression right now? : ____________

Which statement best describes your current thoughts about working on your symptoms?

- I don't really know that there is anything I need to work on
- I think it might be time to make some changes
- I know there are things I could change
- I am making some changes right now
- I have made some changes and am trying to keep myself well
- I was doing well for a while but have fallen back into old habits

What is motivating you to work on the course at this time? : ____________

Do you have any current or past medical problems?

- Yes
- No

Please describe : ____________
Do you think these medical problems will interfere with your ability to take part in one of our courses?

- Yes
- No

Are you receiving any treatment for your medical problems?

- Yes
- No

What kind of medical treatment are you receiving?: ____________

Are you currently experiencing symptoms of physical pain?

- Yes
- No

Please indicate where you currently are experiencing pain. Please select all that apply:

- Upper Back
- Middle Back
- Lower Back
- Hip
- Leg
- Foot
- Shoulder
- Arm
- Hand
- Head
- Face
- Pelvis
- Other

You have indicated that you experience pain in an area other than the locations provided above. Please describe the other area where you experience pain:

____________

For how long have you been experiencing this pain?

- Less than 3 months
- More than 3 months. Please specify how many months you have been experiencing this pain: ______________________

Have you had your pain assessed by your general practitioner or a specialist?

- Yes
- No

When was the last time you had a medical appointment with your general practitioner or a specialist where you discussed your pain?

- Less than a month
More than a month Please specify how many months ago:
______________________

Are you taking any prescription medication for your pain?

○ Yes
○ No

What prescription medication(s) are you taking for pain?: ____________

When did you last have a change in your prescription medication dosage for your pain?

○ Less than a month
○ More than a month Please specify how many months ago:
______________________

How often do you have a drink containing alcohol?

○ Never
○ Monthly or less
○ 2 to 4 times a month
○ 2 to 3 times a week
○ 4 or more times a week

How many drinks containing alcohol do you have on a typical day when you are drinking?

○ 1 or 2
○ 3 or 4
○ 5 or 6
○ 7, 8, or 9
○ 10 or more

How often do you have six or more drinks on one occasion?

○ Never
○ Less than monthly
○ Monthly
○ Weekly
○ Daily or almost daily
AUDIT

How often during the last year have you found that you were not able to stop drinking once you had started?

- Never
- Less than monthly
- Monthly
- Weekly
- Daily or almost daily

How often during the last year have you failed to do what was normally expected from you because of drinking?

- Never
- Less than monthly
- Monthly
- Weekly
- Daily or almost daily

How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?

- Never
- Less than monthly
- Monthly
- Weekly
- Daily or almost daily

How often during the last year have you had a feeling of guilt or remorse after drinking?

- Never
- Less than monthly
- Monthly
- Weekly
- Daily or almost daily
How often during the last year have you been unable to remember what happened the night before because you had been drinking?

- Never
- Less than monthly
- Monthly
- Weekly
- Daily or almost daily

Have you or someone else been injured as a result of your drinking?

- No
- Yes, but not in the last year
- Yes, during the last year

Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down?

- No
- Yes, but not in the last year
- Yes, during the last year

How often do you use drugs other than alcohol?

- Never
- Monthly or less
- 2 to 4 times a month
- 2 to 3 times a week
- 4 or more times a week

Do you use more than one type of drug on the same occasion?

- Never
- Monthly or less
- 2 to 4 times a month
- 2 to 3 times a week
- 4 or more times a week
How many times do you take drugs on a typical day when you use drugs?
- 0
- 1-2
- 3-4
- 5-6
- 7 or more

How often are you influenced heavily by drugs?
- Never
- Less often than once a month
- Every month
- Every week
- Daily or almost every day

Over the past year, have you felt that your longing for drugs was so strong that you could not resist it?
- Never
- Less often than once a month
- Every month
- Every week
- Daily or almost every day

Has it happened, over the past year, that you have not been able to stop taking drugs once you started?
- Never
- Less often than once a month
- Every month
- Every week
- Daily or almost every day

How often over the past year have you taken drugs and then neglected to do something you should have done?
- Never
○ Less often than once a month
○ Every month
○ Every week
○ Daily or almost every day

How often over the past year have you needed to take a drug the morning after heavy drug use the day before?

○ Never
○ Less often than once a month
○ Every month
○ Every week
○ Daily or almost every day

How often over the past year have you had guilt feelings or a bad conscience because you used drugs?

○ Never
○ Less often than once a month
○ Every month
○ Every week
○ Daily or almost every day

Have you or anyone else been hurt (mentally or physically) because you used drugs?

○ No
○ Yes, but not in the last year
○ Yes, during the last year

Has a relative or a friend, a doctor or a nurse, or anyone else, been worried about your drug use or said to you that you should stop using drugs?

○ No
○ Yes, but not in the last year
○ Yes, during the last year
Has a psychiatrist or another health professional ever diagnosed you with schizophrenia or a psychotic disorder?

- Yes
- No

Please provide details: ____________

Has a psychiatrist or another health professional ever diagnosed you with bipolar disorder or mania?

- Yes
- No

Please provide details: ____________

Have you been diagnosed with any other mental health disorder?

- Yes
- No

Please provide details: ____________

Have you ever received mental health treatment at any point in your life?

- Yes
- No

What kind of treatment did you receive and when? : ____________

Have you even taken any medications for mental health concerns in the past?

- Yes
- No

Have you ever been hospitalized for mental health problems in the past?

- Yes
- No

Please describe the details of the hospitalization (e.g., reason, number of times, length of stay): ____________

Are you currently on a waiting list to receive mental health treatment (e.g., from a social worker, psychologist, psychiatrist)?

- Yes
- No
Who are you waiting to see?
Please check all that apply

- Psychiatrist
- Psychologist
- Social Worker
- Nurse
- Family Doctor
- Nurse Practitioner
- Clergy or spiritual leader
- Other ______________________

Are you currently receiving treatment for mental health concerns?

- Yes
- No

What kind of provider are you receiving mental health treatment from?
Please check all that apply

- Psychiatrist
- Psychologist
- Social Worker
- Nurse
- Family Doctor
- Nurse Practitioner
- Clergy or spiritual leader
- Other ______________________

How often do you receive services for your mental health concerns?

- Less than once a month
- Once a month
- Twice a month
- Three times a month
Are you currently taking any medications for your mental health concerns?
- Yes
- No

What medication are you taking for mental health concerns? : ____________

When did you last have a change in your medication dosage for mental health concerns?
- Changed medication within last month
- Changed medication over a month ago. Please specify how many months ago:
  ________________

Have you been hospitalized or received emergency services (police, mobile crisis, hospital emergency, called 911) in the past year?
- Yes
- No

Please provide details: ____________

Do you have any other problems that you would like to share that you have not been asked about in this screening?
- Yes
- No

Please explain. : ____________

Do you have any concerns about participating in an Online Therapy Unit Course?
- Yes
- No

Briefly describe your concerns about participating in an Online Therapy Unit Course: ____________

Do you have any concerns about having the time to complete an Online Therapy Unit Course?
- Yes
- No
Briefly describe your concerns about having the time to complete an Online Therapy Unit Course: __________

Do you have any concerns about sending messages to an Online Therapy Unit staff member?
  o Yes
  o No

Briefly describe your concerns about sending messages to an Online Therapy Unit staff member: __________

Do you have any concerns about talking on the phone to an Online Therapy Unit staff member?
  o Yes
  o No

Briefly describe your concerns about talking on the phone to an Online Therapy Unit staff member: __________

If you ultimately do not participate in one of our courses, can we contact you briefly by phone or email to ask you how you are doing?
  o Yes
  o No

From time to time researchers associated with the Online Therapy Unit are interested in conducting additional research studies. If you have provided a response on the online screen that would indicate that you may be eligible for a future study would you like to receive an email invite?
  o Yes I give my permission for the Online Therapy team to send me an invite to future research projects
  o No

Please rate your level of agreement or disagreement with the following statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Undecided</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working with a computer would make me very nervous</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I get a sinking feeling when I think of trying to use a computer</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
Computers make me feel uncomfortable

Computers make me feel uneasy and confused

Online Screening Evaluation

Please rate the following statements on a scale of 1 and 10 with 1 being Not at all and 10 being Very much so.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1-Not At All</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10-Very Much So</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel that completing the screening on the computer was convenient.</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td></td>
</tr>
<tr>
<td>I feel the screening questions were clear.</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td></td>
</tr>
<tr>
<td>I feel that the length of the screening was reasonable.</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td></td>
</tr>
<tr>
<td>I feel this online screening captured my major problems.</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td></td>
</tr>
<tr>
<td>I feel this online screening will provide helpful information to a therapist so that the therapist can help me.</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td></td>
</tr>
<tr>
<td>If I had a friend or family member in need of help, I would recommend this online screening to them.</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td></td>
</tr>
<tr>
<td>I am satisfied with the online screening.</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td></td>
</tr>
</tbody>
</table>

If I had a choice I would prefer to complete this screening by telephone or by computer?

○ Telephone
○ Computer

**What did you like about the Online Screening?** : ____________

**What would you change about the Online Screening?** : ____________

You have now completed the Online Screening and can submit your results to the Online Therapy Unit!

Thank you for taking the time to complete this screening. When you have pressed the submit button at the bottom of this page, you will be contacted by email within 5 working days to schedule a discussion regarding your participation in Courses offered by the Online Therapy Unit. Please note, the Online Therapy Unit will attempt to contact you during regular business hours. If you are not available at the number you provided Monday-Friday between 8am and 4pm, please contact the Unit directly at 306-337-3331 during office hours to schedule a telephone conversation about your online screening. Please ensure you have pressed the submit button below before exiting the survey.
Appendix B

Short Health Anxiety Inventory

Instructions:
Each question in this section consists of a group of four statements. Please read each
group of statements carefully and then select the one which best describes your feelings,
over the past six months. Identify the statement by ringing the letter next to it, i.e. if you
think that statement (a) is correct, ring statement (a); it may be that more than one
statement applies, in which case, please ring any that are applicable.

1. a. I do not worry about my health.
   b. I occasionally worry about my health.
   c. I spend much of my time worrying about my health.
   d. I spend most of my time worrying about my health.

2. a. I notice aches/pains less than most other people (of my age).
   b. I notice aches/pains as much as most other people (of my age).
   c. I notice aches/pains more than most other people (of my age).
   d. I am aware of aches/pains in my body all the time.

3. a. As a rule I am not aware of bodily sensations or changes.
   b. Sometimes I am aware of bodily sensations or changes.
   c. I am often aware of bodily sensations or changes.
   d. I am constantly aware of bodily sensations or changes.

4. a. Resisting thoughts of illness is never a problem.
   b. Most of the time I can resist thoughts of illness.
   c. I try to resist thoughts of illness but am often unable to do so.
   d. Thoughts of illness are so strong that I no longer even try to resist them.
5. a. As a rule I am not afraid that I have a serious illness.
b. I am sometimes afraid that I have a serious illness.
c. I am often afraid that I have a serious illness.
d. I am always afraid that I have a serious illness.

6. a. I do not have images (mental pictures) of myself being ill.
b. I occasionally have images of myself being ill.
c. I frequently have images of myself being ill.
d. I constantly have images of myself being ill.

7. a. I do not have any difficulty taking my mind off thoughts about my health.
b. I sometimes have difficulty taking my mind off thoughts about my health.
c. I often have difficulty in taking my mind off thoughts about my health.
d. Nothing can take my mind off thoughts about my health.

8. a. I am lastingly relieved if my doctor tells me there is nothing wrong.
b. I am initially relieved but the worries sometimes return later.
c. I am initially relieved but the worries always return later.
d. I am not relieved if my doctor tells me there is nothing wrong.

9. a. If I hear about an illness I never think I have it myself.
b. If I hear about an illness I sometimes think I have it myself.
c. If I hear about an illness I often think I have it myself.
d. If I hear about an illness I always think I have it myself.

10. a. If I have a bodily sensation or change I rarely wonder what it means.
b. If I have a bodily sensation or change I often wonder what it means.
c. If I have a bodily sensation or change I always wonder what it means.
d. If I have a bodily sensation or change I must know what it means.

11. a. I usually feel at very low risk for developing a serious illness.
   b. I usually feel at fairly low risk for developing a serious illness.
   c. I usually feel at moderate risk for developing a serious illness.
   d. I usually feel at high risk for developing a serious illness.

12. a. I never think I have a serious illness.
   b. I sometimes think I have a serious illness.
   c. I often think I have a serious illness.
   d. I usually think that I am seriously ill.

13. a. If I notice an unexplained bodily sensation I don't find it difficult to think about other things.
   b. If I notice an unexplained bodily sensation I sometimes find it difficult to think about other things.
   c. If I notice an unexplained bodily sensation I often find it difficult to think about other things.
   d. If I notice an unexplained bodily sensation I always find it difficult to think about other things.

14 a. My family/friends would say I do not worry enough about my health.
   b. My family/friends would say I have a normal attitude to my health.
   c. My family/friends would say I worry too much about my health.
   d. My family/friends would say I am a hypochondriac.
Appendix C
The Generalized Anxiety Disorder Scale 7-Item (GAD-7)

Over the last 2 weeks, how often have you been bothered by any of the following problems?

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Feeling nervous, anxious or on edge</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Not being able to stop or control worrying</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Worrying too much about different things</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Trouble relaxing</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Being so restless that it is hard to sit still</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Becoming easily annoyed or irritable</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>Feeling afraid as if something awful might happen</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get alone with other people?

- □ Not at all
- □ Somewhat difficult
- □ Very difficult
- □ Extremely difficult
### Appendix D

**The Patient Health Questionnaire 9-Item (PHQ-9)**

Over the **last 2 weeks**, how often have you been bothered by any of the following problems?

<table>
<thead>
<tr>
<th></th>
<th>Little interest or pleasure in doing things</th>
<th>Feeling down, depressed or hopeless</th>
<th>Trouble falling or staying asleep, or sleeping too much</th>
<th>Feeling tired or having little energy</th>
<th>Poor appetite or overeating</th>
<th>Feeling bad about yourself – or that you are a failure or have let yourself or your family down</th>
<th>Trouble concentrating on things, such as reading the newspaper or watching television</th>
<th>Moving or speaking so slowly that other people could have noticed?</th>
<th>Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual</th>
<th>Thoughts that you would be better off dead or of hurting yourself in some way</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
### Appendix E

**Kessler Psychological Distress Scale (K10)**

Over the last 2 weeks, how often have you been bothered by any of the following problems

<table>
<thead>
<tr>
<th>Problem</th>
<th>None of the time</th>
<th>A little of the time</th>
<th>Some of the time</th>
<th>Most of the time</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tired out for no good reason</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Nervous</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>So nervous that nothing could calm you down</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Hopeless</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Restless or fidgety</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>So restless you could not sit still</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Depressed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>That everything was an effort</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>So sad that nothing could cheer you up</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Worthless</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix F

Social Interaction Anxiety Scale and Social Phobia Scale (SIAS-6/SPS-6)

1. I have difficulty making eye contact with others.
   - Not at all characteristic or true of me
   - Slightly characteristic or true of me
   - Moderately characteristic or true of me
   - Very characteristic or true of me
   - Extremely characteristic or true of me

2. I find it difficult mixing comfortably with the people I work with.
   - Not at all characteristic or true of me
   - Slightly characteristic or true of me
   - Moderately characteristic or true of me
   - Very characteristic or true of me
   - Extremely characteristic or true of me

3. I tense up if I meet an acquaintance on the street.
   - Not at all characteristic or true of me
   - Slightly characteristic or true of me
   - Moderately characteristic or true of me
   - Very characteristic or true of me
   - Extremely characteristic or true of me

4. I feel tense if I am alone with just one person.
   - Not at all characteristic or true of me
   - Slightly characteristic or true of me
   - Moderately characteristic or true of me
   - Very characteristic or true of me
   - Extremely characteristic or true of me
5. I have difficulty talking with other people.
   - Not at all characteristic or true of me
   - Slightly characteristic or true of me
   - Moderately characteristic or true of me
   - Very characteristic or true of me
   - Extremely characteristic or true of me

6. I find it difficult to disagree with another's point of view.
   - Not at all characteristic or true of me
   - Slightly characteristic or true of me
   - Moderately characteristic or true of me
   - Very characteristic or true of me
   - Extremely characteristic or true of me

7. I get nervous that people are staring at me as I walk down the street.
   - Not at all characteristic or true of me
   - Slightly characteristic or true of me
   - Moderately characteristic or true of me
   - Very characteristic or true of me
   - Extremely characteristic or true of me

8. I worry about shaking or trembling when I'm watched by other people.
   - Not at all characteristic or true of me
   - Slightly characteristic or true of me
   - Moderately characteristic or true of me
   - Very characteristic or true of me
   - Extremely characteristic or true of me
9. I would get tense if I had to sit facing other people on a bus or train.
   - Not at all characteristic or true of me
   - Slightly characteristic or true of me
   - Moderately characteristic or true of me
   - Very characteristic or true of me
   - Extremely characteristic or true of me

10. I worry I might do something to attract the attention of other people.
    - Not at all characteristic or true of me
    - Slightly characteristic or true of me
    - Moderately characteristic or true of me
    - Very characteristic or true of me
    - Extremely characteristic or true of me

11. When in an elevator, I am tense if people look at me.
    - Not at all characteristic or true of me
    - Slightly characteristic or true of me
    - Moderately characteristic or true of me
    - Very characteristic or true of me
    - Extremely characteristic or true of me

12. I can feel conspicuous standing in a line.
    - Not at all characteristic or true of me
    - Slightly characteristic or true of me
    - Moderately characteristic or true of me
    - Very characteristic or true of me
    - Extremely characteristic or true of me
Appendix G

Panic Disorder Severity Scale- Self Report (PDSS-SR)

Several of the following questions refer to panic attacks and limited symptom attacks. For this questionnaire, we define a panic attack as a sudden rush of fear or discomfort accompanied by at least 4 of the symptoms listed below. In order to qualify as a sudden rush, the symptoms must peak within 10 minutes. Episodes like panic attacks but having fewer than 4 of the listed symptoms are called limited symptom attacks. Here are the symptoms to count:

- Rapid or pounding heartbeat
- Chest pain or discomfort
- Fear of losing control or going crazy
- Sweating
- Nausea
- Chills or hot flashes
- Trembling or shaking
- Dizziness or faintness
- Fear of dying
- Breathlessness
- Feeling of choking
- Feelings of unreality
- Numbness or tingling

For each of the following questions, please select the number of the answer that best describes your experience during the past week.

1. **How many panic and limited symptoms attacks did you have during the past week?**

   0 — No panic or limited symptom episodes
   1 — Mild: no full panic attacks and no more than 1 limited symptom attack/day
   2 — Moderate: 1 or 2 full panic attacks and/or multiple limited symptom attacks/day
   3 — Severe: more than 2 full attacks but not more than 1/day on average
   4 — Extreme: full panic attacks occurred more than once a day, more days than not

2. **If you had any panic attacks during the past week, how distressing (uncomfortable, frightening) were they while they were happening? (If you had more than one, give an average rating. If you didn’t have any panic attacks but did have limited symptom attacks, answer for the limited symptom attacks.)**

   0 — Not at all distressing, or no panic or limited symptom attacks during the past week
   1 — Mildly distressing (not too intense)
   2 — Moderately distressing (intense, but still manageable)
   3 — Severely distressing (very intense)
   4 — Extremely distressing (extreme distress during all attacks)
3. During the past week, how much have you worried or felt anxious about when your next panic attack would occur, or about fears related to the attacks (for example, that they could mean you have physical or mental health problems or could cause you social embarrassment)?

0 — Not at all
1 — Occasionally or only mildly
2 — Frequently or moderately
3 — Very often or to a very disturbing degree
4 — Nearly constantly and to a disabling extent

4. During the past week, were there any places or situations (e.g., public transportation, movie theaters, crowds, bridges, tunnels, shopping malls, being alone) you avoided, or felt afraid of (uncomfortable in, wanted to avoid or leave), because of fear of having a panic attack? Are there any other situations that you would have avoided or been afraid of if they had come up during the week, for the same reason? If yes to either question, please rate your level of fear and avoidance this past week.

0 — None: no fear or avoidance
1 — Mild: occasional fear and/or avoidance, but I could usually confront or endure the situation. There was little or no modification of my lifestyle due to this.
2 — Moderate: noticeable fear and/or avoidance, but still manageable. I avoided some situations but I could confront them with a companion. There was some modification of my lifestyle because of this, but my overall functioning was not impaired.
3 — Severe: extensive avoidance. Substantial modification of my lifestyle was required to accommodate the avoidance, making it difficult to manage usual activities.
4 — Extreme: pervasive disabling fear and/or avoidance. Extensive modification in my lifestyle was required, such that important tasks were not performed.

5. During the past week, were there any activities (e.g., physical exertion, sexual relations, taking a hot shower or bath, drinking coffee, watching an exciting or scary movie) that you avoided, or felt afraid of (uncomfortable doing, wanted to avoid or stop), because they caused physical sensations like those you feel during panic attacks or that you were afraid might trigger a panic attack? Are there any other activities that you would have avoided or been afraid of if they had come up during the week, for that reason? If yes to either question, please rate your level of fear and avoidance of those activities this past week.

0 — No fear or avoidance of situations or activities because of distressing physical sensations
1 — Mild: occasional fear and/or avoidance, but usually I could confront or endure with little distress activities that cause physical sensations. There was little modification of my lifestyle due to this.
2 — Moderate: noticeable avoidance, but still manageable. There was definite, but
limited, modification of my lifestyle, such that my overall functioning was not impaired.
3 — Severe: extensive avoidance. There was substantial modification of my life style or interference in my functioning.
4 — Extreme: pervasive and disabling avoidance. There was extensive modification in my lifestyle due to this, such that important tasks or activities were not performed.

6. During the past week, how much did the above symptoms altogether (panic and limited symptom attacks, worry about attacks, and fear of situations and activities because of attacks), interfere with your ability to work or carry out your responsibilities at home? (If your work or home responsibilities were less than usual this past week, answer how you think you would have done if the responsibilities had been usual.)

0 — No interference with work or home responsibilities
1 — Slight interference with work or home responsibilities, but I could do nearly everything I could if I didn’t have these problems
2 — Significant interference with work or home responsibilities, but I still could manage to do the things I needed to do
3 — Substantial impairment in work or home responsibilities; there were many important things I couldn't do because these problems
4 — Extreme, incapacitating impairment, such that I was essentially unable to manage any work or home responsibilities

7. During the past week, how much did panic and limited symptom attacks, worry about attacks, and fear of situations and activities because of attacks, interfere with your social life? (If you didn’t have many opportunities to socialize this past week, answer how you think you would have done if you did have opportunities.)

0 — No interference
1 — Slight interference with social activities, but I could do nearly everything I could if I didn’t have these problems
2 — Significant interference with social activities, but I could manage to do most things if I made the effort
3 — Substantial impairment in social activities; there are many social things I couldn’t do because of these problems
4 — Extreme, incapacitating impairment, such that there was hardly anything social I could do
Appendix H

Sheehan Disability Scale (SDS)

Please rate the following from 0 to 10. 0 being Not at all 10 being extremely.

1. The symptoms have disrupted your work/school work.
   - 1
   - 2
   - 3
   - 4
   - 5
   - 6
   - 7
   - 8
   - 9
   - 10

2. The symptoms have disrupted your social life.
   - 1
   - 2
   - 3
   - 4
   - 5
   - 6
   - 7
   - 8
   - 9
   - 10
3. The symptoms have disrupted your family/home responsibilities.

☐ 1
☐ 2
☐ 3
☐ 4
☐ 5
☐ 6
☐ 7
☐ 8
☐ 9
☐ 10
Appendix I

Working Alliance Inventory-Short Revised (WAI-SR)

1. As a result of these sessions I am clearer as to how I might be able to change.
   1 2 3 4 5
   Seldom Sometimes Fairly Often Very Often Always

2. What I am doing in therapy gives me new ways of looking at my problem.
   5 4 3 2 1
   Always Very Often Fairly Often Sometimes Seldom

3. I believe my therapist likes me.
   1 2 3 4 5
   Seldom Sometimes Fairly Often Very Often Always

4. My therapist and I collaborate on setting goals for my therapy.
   1 2 3 4 5
   Seldom Sometimes Fairly Often Very Often Always

5. My therapist and I respect each other.
   5 4 3 2 1
   Always Very Often Fairly Often Sometimes Seldom

6. My therapist and I are working towards mutually agreed upon goals.
   5 4 3 2 1
   Always Very Often Fairly Often Sometimes Seldom

7. I feel that my therapist appreciates me.
   1 2 3 4 5
   Seldom Sometimes Fairly Often Very Often Always

8. My therapist and I agree on what is important for me to work on.
   5 4 3 2 1
   Always Very Often Fairly Often Sometimes Seldom
9. I feel my therapist cares about me even when I do things that he/she does not approve of.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seldom</td>
<td>Sometimes</td>
<td>Fairly Often</td>
<td>Very Often</td>
<td>Always</td>
<td></td>
</tr>
</tbody>
</table>

10. I feel that the things I do in therapy will help me to accomplish the changes that I want.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>Very Often</td>
<td>Fairly Often</td>
<td>Sometimes</td>
<td>Seldom</td>
<td></td>
</tr>
</tbody>
</table>

11. My therapist and I have established a good understanding of the kind of changes that would be good for me.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>Very Often</td>
<td>Fairly Often</td>
<td>Sometimes</td>
<td>Seldom</td>
<td></td>
</tr>
</tbody>
</table>

12. I believe the way we are working with my problem is correct.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seldom</td>
<td>Sometimes</td>
<td>Fairly Often</td>
<td>Very Often</td>
<td>Always</td>
<td></td>
</tr>
</tbody>
</table>

Goal Items: 4, 6, 8, 11; Task Items: 1, 2, 10, 12; Bond Items: 3, 5, 7, 9
Appendix J

Research Ethics Certificate

University of Regina

Research Ethics Board
Certificate of Approval

REB # 2016-001

Investigator(s) Dr. Heather Hadjistavropoulos Marcie Nugent, Max Ivanov, Schneider, Dale Dirkse, Victoria Owens, Joelle Soucy, Kim Larson, Annora Bourgeault, Nickolai Titov, Blake Dear, Lauren Staples, and Y. Nichole Faller

Department Psychology

Funder: Awarded- CIHR, HRF and SHRF

Title: The Wellbeing Course: A randomized controlled trial examining the efficacy of Online Cognitive Behaviour Therapy with different levels of therapist support

APPROVED ON: January 1, 2016

RENEWAL DATE: January 1, 2017

APPROVAL OF:

Application For Behavioural Research Ethics Review Advertisements (Appendix A)

Consent Forms:
- Online Screening (Appendix B)
- Intervention (Appendix E and F)
- Waitlist (Appendix G)
Online Screening Questionnaire
(Appendix C) Telephone Interview
Guide (Appendix D)
Specific Questionnaires (Appendices H, I, J, K, L, M, N) Appendix O
Appendix P
Oath of confidentiality for research assistants (Appendix Q)

FULL BOARD MEETING
DELEGATED REVIEW __X_

The University of Regina Research Ethics Board has reviewed the above-named research project. The proposal was found to be acceptable on ethical grounds. The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to this research project, and for ensuring that the authorized research is carried out according to the conditions outlined in the original protocol submitted for ethics review. This Certificate of Approval is valid for the above time period provided there is no change in experimental protocol, consent process or documents.

Any significant changes to your proposed method, or your consent and recruitment procedures should be reported to the Chair for Research Ethics Board consideration in advance of its implementation.

ONGOING REVIEW REQUIREMENTS

In order to receive annual renewal, a status report must be submitted to the REB Chair for Board consideration within one month of the current expiry date each year the study remains open, and upon study completion. Please refer to the following website for further instructions: http://www.uregina.ca/research/for-faculty-staff/ethics-compliance/human/forms1/ethics-forms.html.

Dr. Larena Hoeber, Chair
University of Regina Research Ethics Board