COMPUTER ASSISTED COGNITIVE BEHAVIOR THERAPY (CCBT) FOR BANGLADESHI POPULATION

A Dissertation

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Approval Sheet

This is to certify that I have read the dissertation entitled "Computer Assisted Cognitive Behavior Therapy (CCBT) for Bangladeshi Population" submitted by Shahana Parveen in partial fulfillment of the requirements for the degree of M. Phil in Clinical Psychology, University of Dhaka and the research was carried out by her under my supervision and guidance.

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Abstract

Computer assisted Cognitive Behavior Therapy (CCBT) is a relatively new form of treatment in the world. The present research was aimed at developing a CCBT package for Bangladeshi population. Another purpose was to observe the impact of such an intervention as well as the perception of participants toward this kind of service. An explorative-sequential mixed method design was selected to achieve this end. The entire research was divided in two phases – development phase and test-and-review phase. The first phase was qualitative in nature which had three sub-phases – symptoms review, reviewing existing CBT practices and development of the web page. Using secondary data collection method and archival review, a total of 35 participants' description of depression, 15 case reports and 20 case logs were collected. Data was analyzed following qualitative thematic content analysis. A total of five categories, ten themes and 26 sub-themes were identified as clustered in a thematic relationship representing depression within a portrayal. The Problem rating form was created from the mostly coded symptoms of depression. Similarly, the reported CBT practices were summarized and represented in a timeline, few categories and two models. The summarized results helped in the development of the content of web page. The web page had ten sessions, each session contained PPT, case examples, psycho-education materials, exercise, homework and feedback of homework. In the second phase of the research, a one group pre-posttest design was adopted. The web page was administered to 15 participants with mild to severe level of depression. The impact of CCBT and participants' attitudes toward the service were assessed by using Depression Scale, problem rating form, feeling rating form and evaluation form. Statistical analysis showed the session completion rates and drop-out rates of the present program as 46.7% and 40%. Session completion rates were higher for participants with moderate depression (66.7%), whereas only 33.3% of mildly and 33.3% of severely depressed participants completed the package. Result also found a general decrease in the

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mean scores of depression scale from baseline (*M* = 118.07; *SD* = 11.823) to fifth (*M* =102.67; *SD* =19.346) and final session (*M* = 90.83; *SD* =17.414). The Friedman test showed a significant decrease in depressive symptoms before and after the treatment [χ^2 (2, *N* = 9) = 15.80, *p* = .000]. The result also indicated a significant difference between the baseline and fifth session (*z* = -2.524, *p* = .012) as well as between the baseline and last session (*z* = -3.062, *p* = .002). In terms of participants' attitudes toward the service, mean score indicated gradual increases in the participants' perceived benefits as the session progresses from first (*M* = 7.53; *SD* = .516) to ninth session (*M* = 9.00; *SD* = .000). The differences were also significant (χ^2 = 22.656, *p* = .004) regarding the perceived benefits. Participants reported higher level of satisfaction as the session progressed from first (*M* = 7.80; *SD* = .414) to ninth session (*M* = 9.00; *SD* = .000) and the differences were significant [χ2 (8, *N* = 12) = 22.154, *p* = .005]. Both qualitative and quantitative findings affirmed that computer assisted cognitive behavior therapy can be used successfully to treat symptoms of depression.

Key Words: Depression, Cognitive Behavior Therapy (CBT), CCBT, Effectiveness of CCBT and Bangladeshi population

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Computer Assisted Cognitive Behavior Therapy (CCBT) for Bangladeshi Population

This century is witnessing perhaps the most advance development in science and technology in human history. The rapid progress of Information Technology (IT) within the last decades made the world much smaller and the interaction more smother. This advancement in the information flow is not limited to business or day-to-day communication. The reach of information technology spread to almost every aspect of life. Life is becoming much easier with the increasing availability of the communication technology, such as computer, network, mobile and wireless device, cable television, automated office equipment and many more. This advancement made it convenient to use information technology in providing health-related support.

Technology-dependent health and mental health services are becoming more common and convenient. One reason for this technology-dependency in the mental-health sector may be the rapid increase of different types of mental health problems. Mental health problems are now at their pick and it is becoming increasingly difficult to allocate evidence-based mental health support to each and every layer of the society. The shortage of trained personnel leading to the unequal distribution of services to rural and urban area is a primary concern. The nature and effectiveness of the services is another concern. Thus, the uses of IT in exchanging mental health-related information or treating mental illness are gaining popularity over the years.

Cognitive Behavior Therapy (CBT) is particularly more appealing and most commonly used therapy model to transform into IT form than any other therapeutic models (Blankers, Salemink, & Wiers, 2015). The reason may lie in the obvious advantages of CBT – highly structured and goal-oriented. The nature and components of CBT made it more preferable mode of treatment to be transferred into online therapy form.

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CBT is originally developed to deliver in a face-to-face, traditional therapy settings. Over the years, however, CBT is evolved to be delivered both in face-to-face and computerized form. Therefore, it is imperative to learn more about development and historical context of CBT as well as its gradual transition to computerized form. The following section will give a more comprehensive understanding of both of these aspects.

Cognitive Behavior Therapy

CBT is an established, extensively researched, widely used, effective treatment method for a number of mental health conditions. CBT assumes that mental health conditions arise from maladaptive thoughts and beliefs, and thereby it focuses on identifying theses maladaptive thoughts-beliefs and challenging and changing these to more adaptive ones. Many types of cognitive and behavioral techniques are used to achieve this goal. As similar to the development of other form of psychotherapy, CBT had its own developmental stages – a sequential pathway that led to the current established CBT.

Historical development of CBT. Philosophically, CBT is similar to the phenomenological view of the world in the sense that both emphasize on the subjective experience of the individual regardless of reality (Leahy, 1996; Dawson & Moghaddam, 2015). The subjective experience in CBT was depicted in the thought process of the individual. The perspectives or belief of individual that eventually creates his or her reality – how a person views himself, others, future or the world. However, CBT further work with these subjective experiences by helping individual test these experiences or deconstructing adaptive experiences (Leahy, 1996). Cognitive Therapy was first developed by Aaron T. Beck in the early 1960s. Beck's work was influenced by others especially – Albert Bandura's Social Learning Theory, Stoic philosophy and Alfred Adler's work (Turner & Napolitano, 2010). Albert Ellis's rational emotive behavior therapy (REBT) was another influential work

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that is considered to be an important cornerstone in the development of current CBT (Knapp & Beck, 2008).

Beck observed, while helping people with depression that negative schemata or cognitive biases are at the root of their problems (Turner & Napolitano, 2010). He developed CBT initially to help people with depression by modifying these negative schemata and cognitive biases. Thus, the basic assumption of CBT emerges as modifying thought and behavior and with a primary focus on resolving present problems (Beck, 1964). Since its development, it was subjected to numerous modifications and adaptations to address other mental health conditions as well (Beck, 1995).

As it is apparent now that CBT didn't develop in a day and it is not static since its development; there are several eras or waves of CBT that describe its historical progression (Hayes & Hofmann, 2017). These waves portray CBT's nature and structure as well as its developmental milestones and evolution. The waves of CBT are highlighted in the following section.

First wave. Journey of first wave of CBT started with behaviorism. It was based mainly on behavioral methods and learning principles such as - classical conditioning and operant learning (Carvalho, Martins, Almeida, & Silva, 2017). The emphasis was on scientific experiment as opposed to the existing non-empirical clinical practices such as – psychoanalysis and psychodynamic theory and practices (Hayes, 2004). This era lasted from 1950s to 1960s (Forman & Herbert, 2009).

Previous to this era, the therapeutic practices were not sufficiently based on scientifically well-established principles or evidence-based practices. Behaviorism assumes that human (as well as animals) behavior results from conditioning and learning through reinforcement (Grantham & Cowtan, 2015). Therefore, modifying problematic behavior and emotion based on learning principles were at the heart of the behavior therapy (Forman &

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Herbert, 2009; Hayes, 2004). Most of the prominent work of this era was done by Skinner (1953), Wolpe (1958), and Eysenck (1952) (Forman & Herbert, 2009). The role of behaviorism was immense in the present-day CBT, because CBT owed its firm foundation on classical and operant conditioning (Leichsenring, Hiller, Weissberg, & Leibing, 2006).

Second wave. Based on the progress of behaviorism, new ways to help people with mental health conditions began to appear. First wave therapy ignored two important aspects of human behavior – thoughts and feelings. Second wave CBT was thus developed to address these aspects (Grantham & Cowtan, 2015). The primary focus of second wave therapy was information processing (Kahl, Winter, & Schweiger, 2012). The assumption was that faulty information processing style, errors in cognitive process and irrational thoughts are at the heart of problem; so identifying, modifying and changing these thought was the goal of therapy (Hayes, 2004).

Two of the most influential works of this era were - Ellis' (1955) rational emotive therapy, and Beck and Colleagues' (Beck, Rush, Shaw, & Emery, 1979) cognitive therapy (Forman & Herbert, 2009). RET (later transformed into REBT) historically preceded CT (later transformed into CBT) by a decade and was considered to be the pioneer form of CBT. Both have a fundamentally similar area of work - cognition. The core similarities between them were the emphasis on how cognition impact emotion and behavior, how cognition can be changed and how change in cognition can result in a change in emotion and behavior (Shea, 2016).

However, RET followed a philosophical origin, while CT followed an empirical approach to development (Padesky & Beck, 2003). REBT asserts irrational beliefs at the core of emotional upsets and only by disputing irrational beliefs and developing effective new philosophy of life, desirable change can be achieved (Nelson-jones, 2001). CBT, on the other

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hand, are more focused on the client's thought and initially developed as a result of Beck's research attempts to find out the scientific model of depression (Padesky & Beck, 2003).

Many of the main themes of first wave were later included into second wave and the combination of both behavior and cognition lead to the name Cognitive Behavior Therapy (Grantham & Cowtan, 2015). This second wave or cognitive therapy is considered the most influential form of psychotherapy (Kahl et al., 2012).

Third wave. Same principles were addressed in third wave – cognition and verbal processes (Forman & Herbert, 2009). However, some started to view the traditional cognitive and behavior therapy as "relatively mechanistic" (Hayes, 2004). The focus, as a result, started to shift somewhat to enhancing the life experiences and quality of life (Forman & Herbert, 2009). This wave also introduced evidence-based practice that took modern psychotherapy into a more scientific ground (Kahl et al., 2012).

The third wave or new wave or next generation of CBT started around 1990s (Forman & Herbert, 2009). Some new themes were introduced in this wave, these are – meta-cognition, cognitive fusion, emotions, acceptance, mindfulness, dialectics, spirituality and therapeutic relationship (Grantham & Cowtan, 2015; Kahl et al., 2012). The interventions used are heterogeneous with a priority on developing skills to prevent the problems from recurring (Kahl et al., 2012). The most recent edition to the third wave is the computer assisted or IT based CBT which took the CBT to a completely new delivery system.

Principles of CBT. As mentioned earlier, Computer assisted CBT uses CBT as core component. It is, therefore, important to know what constitute the traditional CBT. The core component of CBT is the cognitive model, "which hypothesizes that individual's emotions and behaviors are influenced by their perception of events" (Beck, 1995, p. 14). In other words, people's response (behavior, emotion, physiological response) to any situation

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depends on what they think of the situation and how they perceive and interpret it. Faulty perception will lead to the faulty response pattern.

Beck (1976) introduced three levels of cognition that guide the response to any given situation. He used the term "automatic thought" to present the immediate thought or perceptions that come automatically and immediately in response to an event. The automatic thoughts are in surface level of cognition. They are guided by the second and third level of cognition – "intermediate belief" and "core belief". Beck proposed that core belief and intermediate belief develop during the early stages of development (Beck, 1995). They represent how people view themselves, the world or others and the future. Negative core belief or schema developed during the early stages may lead to the development of mental health problems.

Collaborative empiricism (Wright, 2006) is another important factor for the successful outcome of CBT. Along with this, CBT centered around ten basic principles. Some of which involves - therapeutic alliance, collaboration and active participation, goal-orientation, emphasis on present, problem-focused, educative, emphasizes relapse prevention, time limited, structured, uses techniques that focuses mainly on identifying and reconstructing dysfunctional thoughts and beliefs (Beck, 1995).

These principles represent the basic nature of CBT. However, CBT can vary depending on the amount of content practiced by professionals. Depending on the level of practices there are four different types of CBT (British Association for Behavioral and Cognitive Psychotherapies [BABCP], 2005). These are – **formulation driven CBT** where assessment, formulation and treatment are used to help individual with problems with an emphasis on collaborative empiricism, **CBT approaches** which includes - specific CBT intervention for specific problem areas - anger management, pain management and similar types of interventions, **assisted self-help** which includes – computer assisted CBT, self-help

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materials given to health workers or assistant psychologist and **self-help materials** that do not fall into the category of psychotherapy but includes only some book or bibliography offered as psycho-education (Grazebrook & Garland, 2005).

Effectiveness of CBT. CBT is highly structured, goal-oriented and can be administered to relatively short-period of time. The highly-structured nature of CBT made it easy and possible to test for effectiveness and efficacy. CBT is recommended as a treatment of choice by National Institute for Health and Clinical Excellence (NICE) guidelines for a wide range of mental health condition such as Depression, Anxiety, Post traumatic stress disorder, Obsessive compulsive disorder etc. (Blane, Williams, Morrison, Wilson, & Mercer, 2013). The United Kingdom's National Health Service announced to train more therapist at government expense in order to make CBT more accessible (Laurance, 2008).

CBT was originally developed to address depression. Study found that CBT especially reduce symptoms of depression by activating behavior (Behavior Activation, BA), reconstructing cognition (Cognitive Restructuring, CR) and working with Core Belief (CB) (Hawley et al., 2016).

Since its development numerous studies were conducted to see its effectiveness in treating depression. In a meta-analysis on treatment outcomes of CBT for a wide range of psychiatric disorders, it was found that CBT was somewhat superior to antidepressants in the treatment of adult depression (Butler, Chapman, Forman, & Beck, 2006). A large-scale, well-controlled study found that CBT was better than placebo and as effective as antidepressant medication in treating moderate-to-severe depression (DeRubeis et al., 2005).

Another meta-analysis reviewed efficacy of CBT for a wide range of mental health conditions such as substance abuse, somatoform, chronic pain and fatigue, mood disorder, anxiety disorders, where evidence-based nature of CBT was proven as well as its effectiveness (Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012).

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CBT was found to be effective for anxiety-based disorders such as – social anxiety, generalized anxiety, post traumatic stress disorder, obsessive compulsive disorder. In a meta-analysis of 56 effectiveness studies of adult anxiety, CBT was found to be effective in clinically representative conditions (Stewart & Chambless, 2009). CBT procedures, particularly exposure-based approaches, for anxiety-based disorders were found to be effective in meta-analysis (Olatunji, Cisler, & Deacon, 2010).

CBT is even effective for childhood and adolescence anxiety disorder (Cartwright-Hatton, Roberts, Chitsabesan, Fothergill, & Harrington, 2010). The effectiveness of CBT further extended to conditions such as – insomnia in cancer patients (Espie et al., 2008) and chronic pain (Ehde, Dillworth, & Turner, 2014).

Although CBT has been shown to be effective, it is less available because of few therapists, expense associated with service costs, waiting lists and peoples' reluctance to enter the therapy (Blane et al., 2013; Titov, Andrews, & Sachdev, 2010). In order to make CBT more accessible and cost effective, computer and online based cognitive behavior Therapy are being used in many countries. CBT is well-suited for any IT-based intervention (Stuhlmiller & Tolchard, 2009). Over the years, numerous numbers of IT-based interventions were developed. These interventions come in different name and shape. A short review of IT-based intervention is given in following section.

IT-based Intervention

The IT based intervention has many names – Cybertherapy, Internet-based Cognitive Behavior Therapy (ICBT), Computer-assisted or Computerized or Computer-guided Cognitive Behavior Therapy (CCBT), Cognitive Assistive Technology (CAT), Internet-delivered Psychotherapy (IPT), Mental Health Apps (MHapps) and many more. The name and definition of these kinds of therapies differ according to the types, amounts and intensity of service provided and the use of software and technical element to support the services.

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Types and classification. There are numerous numbers of IT-based interventions available worldwide. However, there is no unified, single and agreed nomenclature to define or label all kind of online-based intervention into a single taxonomy (Dowling & Rickwood, 2013). Hence, it is difficult to conceptualize different forms of online, or in broader term IT based intervention in a single dimension. Because of this wide varieties and diverse nature of IT based intervention, there are number of different classification. Suler (2008) described six dimensions of cyber Therapy. These are – synchronous or asynchronous, text or sensory, imaginary or realistic, automated or interpersonal, invisible or present and individual or group. Among these different categories, sensory and synchronous are described as most effective. These dimensions were made depending on the communication pattern, nature of the content, types of assistance offered and the presence of professional in the therapeutic activities.

Barak, Klien and Proudfoot (2009) tried to unify all kinds of online-based therapy into four types: web-based interventions, online counseling and therapy, internet-operated therapeutic software, and other online activities (online support groups or assessment). Munoz's (2010), however, simply stated two types of IT based intervention - depending on whether the therapy will be **automated** (self-help) that is without the presence or assistance from a professional or therapist; and/or **guided** (therapist assisted), where a trained professional will view, guide and intervene. The guided intervention can either be **direct** for example - through face-to-face contact, or **indirect** where progress are viewed and directed by remaining invisible with the help of email, text messages or chatting options (Munoz, 2010).

Sarasohn-Kahn (2012) described IT based intervention in the form of computer-based cognitive behavioral therapy, online counseling, online social networks, mobile platforms for self-tracking and support, games for behavioral health and virtual reality.

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So, IT based intervention have many names and labels. The following types are proposed as an attempted summary to encompass all the dimensions provided by different researchers.

The communication process divides the IT based intervention into two major types. One is **synchronous** or real time communication, where the users and trained professional interact with each other simultaneously and within same time frame. For example, phone call, internet-relay chats and similar kinds. The other is **asynchronous** or delay-time communication, where the users and trained professional need not be in the same time frame. For example, text messages, automated or guided web pages or apps, email, discussion boards and similar kinds.

Depending on the use of device there may be three different types of IT based intervention. First, **telecommunication**, where the therapy process follow a single or multiple episodes of tele-counseling using mobile or telephone services as the means of communication. Second, **software-based therapy**, such as games, virtual reality, mobile apps, software solely developed to provide partial support to the individual in needs, such as - thought diary, Moodkit etc. Third, **online therapy,** in which full time internet access is required for the completion of therapeutic activities such as – skype, web page or apps.

Depending on the involvement of the therapist, the IT based intervention can be divided into three types. **Full-involvement**, where a professional or fully qualified therapist, direct the full therapeutic activities through the medium of a communication device, as seen in the therapy by skype or telecommunication. **Partial-involvement** is where a fully trained professional view and direct the progress through series of therapeutic activities presented to the participants by webpage or games but remaining partially or fully invisible whole time. **No-involvement** means automated and individually tailored software or online instruments (web page, games, apps and similar kinds) designed to direct and help participants in

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achieving their therapeutic goal, for examples, web page or apps without the presence of professionals.

The amount of therapeutic **content** embedded in IT based mental health instrument may also be viewed as having few categories. Some of these include only one or two elements such as mood chart, thought diary, which is helpful as adjacent to face-to-face therapy. Other simply provides psycho-education about specific mental health related topics. However, some IT based therapy try to follow full psychotherapy model, replicating and translating almost all elements from face-to-face therapy into instrumental form.

The content embedded in any IT based intervention depends on the intended **purpose and aim**. The purpose may simply is to communicate information. The purpose may be to provide support and aid, such as giving reminder about appointment or specific tasks, helping people complete their homework, help them to regulate their emotion through instructions and self-help material etc. Again the purpose may be to give a near enough experience of face-to-face therapy without the presence of therapist as in low-intensity therapy. Computer-assisted Cognitive Behavior Therapy (CCBT) is one of such types of low-intensity technology-based therapy. In the following section a short review of CCBT is described.

Computer-assisted Cognitive Behavior Therapy (CCBT)

In CCBT, the cognitive behavior therapy is delivered using a computer which may be in addition to or in place of sessions with a therapist (National Institute for Health and Clinical Excellence [NICE], 2006). CCBT programs, as the name suggests, evolve around the basic model and principle of cognitive behavior therapy. The design and representation, however, differ according to their intended purpose. The uses of video, audio, power-point presentation material, inter-active and non-interactive types of homework and tasks assignment, shapes different CCBT program differently. CCBT can also vary depending on the technologies used and amount of additional support.

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Protocols and guidelines for CCBT. Along with design and content, it is important that the IT based therapy needs to be evidence based and follow the proper protocol and guidance. Before developing CCBT packages few aspects required to be considered, for example – the content of the package, where, when and how it can be used, likely participants, engaging participants in the program, technical aspects, confidentiality and legal processes.

The 16 recommendations formulated by Bakker, Kazantzis, Rickwood, and Rickard (2016) for any MHapps can serve as one such guideline. The recommendations direct the apps to be CBT based addressing both anxiety and low mood, useable by non-clinical populations, self-automated, materials must include - thoughts, feelings and behaviors, encourage activities, psycho-education, real-time engagement, problem focused activities, encourage real life activities rather than being technology-based, gamification and intrinsic motivation to engage, logs of previous uses, reminders to engage, easy and intuitive interface and interactions, includes information and connection to immediate help services and evidence-based (Bakker, Kazantzis, Rickwood, & Rickard, 2016).

Although these recommendations are for apps because of their comprehensive nature they can be used as guideline for any IT-based therapy. One thing apparent from these recommendations is that the intervention must engage participant in the therapy and encourage activities that needed to be practiced in real-life situation. NICE provide a guideline for CCBT packages that shed some lights on where and how such a package can be used.

NICE (2009) guidelines stated that CCBT can only be used for peoples with persistent sub threshold depressive symptoms or mild to moderate depression and it should be provided via a stand-alone computer-based or web-based program. It also recommend that the intervention must include materials that explain the CBT model, involve participants' with

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homework and tasks between sessions, use cognitive restructuring and actively monitor changes, progress and outcome (NICE, 2009). NICE guidelines further stipulate that any CCBT intervention should be supported by a trained practitioner. Recommended intervention range is 9–12 weeks, including follow-up (NICE, 2009).

The guidelines discussed above provide a comprehensive idea of an ideal CCBT package. There are also some technical factors which need to consider before developing the service. These are – content must be easy to translate into online delivery mode, design must be website or app based, must include technical programming, provide technical support, include data storage and analysis, prioritizes safety and confidentiality issues, and give special consideration to ethical concerns (Hill et al., 2018).

Description of existing CCBT packages. There are numerous number of CCBT packages in different shapes and formats available online. Currently available CCBT packages include, Beating the Blues, Colour Your Life, MoodGYM, COPE and Overcoming Depression for treating depression; FearFighter for panic and phobia; and OCFighter (previously known as BTSteps) for obsessive-compulsive disorder (OCD). Few of them were approved by NICE. The descriptions of some of these services are given below.

Beating the Blues. As the name suggests this package is for mild-to-moderate level of depression. Beating the Blue uses multi-media interactive computer technology for representing CBT in CCBT form. It has eight-weekly one-hour sessions. The first session starts with an introductory video along with five case studies. Each session contain homework, weekly monitoring of progress and review. Varieties of cognitive and behavior techniques are distributed step-by-step in eight sessions. These are – activity schedule, thought recording, challenging unhelpful thinking, attributional style, goal setting, sleep management, task breakdown, problem solving etc. The program includes a rating scale for each session to assess suicidal risks. If any participant score high in severity (five to eight in a

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zero to eight rating scale), they were immediately recommended to take professional help. The program's effectiveness was proven by RCTs (Proudfoot et al., 2003) and meta-analysis (Cavanagh & Shapiro, 2004). NICE recommended "Beating the Blues" in 2006.

Moodgym. MoodGYM works as an interactive, online self-help book. It has five interactive modules spanned in five weeks. In the sixth week, all the materials are revised. The emphasis is given on cognitive restructuring. The participants access techniques by going through examples, exercises and quizzes. Other topics include – pleasant activity and assertiveness training. Downloads are available to the users. A workbook contains all the exercises that a user completed on the course of each session. A summary and workbook are also available at the end of each module. Moodgym is found to be effective in both RCTs (Gilbody et. al., 2015) and Meta-analysis (Twomey & O'Reilly, 2016).

FearFighter. This CCBT package is for overcoming panic and phobia. There are nine sessions, one session per week is highly recommended. The length of each session is approximately 50 minutes. The session includes – physiological responses of anxiety fear, recognizing signs of anxiety and safety behavior, anxiety management, challenging thought, identifying core belief and developing alternative-helpful core belief, exposure and SMART goal, exposure and rehearsal, maintaining exposure. The ninth session is basically a summary of all sessions. User can download and print worksheets for activities and monitoring progress. There are also emails sent to participants after each session with further tips. The FearFighter was found to be almost equivalent to full-time clinician (Marks, Mataix-Cols, Kenwright, & Cameron, 2003) with or without exposure (Schneider, Mataix-Cols, Marks, & Bachofen, 2005). It was also recommended by NICE (2006).

OCFighter. OCFighter is for Obsessive-Compulsive Disorder (OCD). Its primary goal is to reduce the amount of time spent on obsessions and rituals. It has nine weekly sessions. The sessions includes - learning about OCD, CBT and exposure and response

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prevention (ERP), rituals and their costs, identifying triggers, obsessive thoughts, goal setting and exposure, learning the skills and continuing the skills. The ninth session summarizes all other sessions. OCFighter is recommended by NICE in 2005. It was also found to be effective in a meta-analysis of 23 RCTs (Cuijper, Marks, van Straten, Cavanagh, Gega, & Andersson 2009).

Living Life to the Full. Living life to the full is a CBT-based online service for people experiencing low mood and mild-to-moderate symptoms of depression. Their course focuses on developing life skills that are designed to improve quality of life. The offered courses are growing while enlisting different conditions as well as different communities of people, such as – older adults, people who attend church, farming communities, people with chronic pain, diabetes, long-term illness, drinking habits, expectant mothers, teenager with dental anxiety.

The course has eight 90-minutes sessions designed to make it enjoyable and interactive to the users. Trained facilitators conduct the session and provide booklets, handouts, exercises, and discussions. The topic discussed in the sessions includes – low mood, low activity level, learning to change bad thoughts with good thoughts, building self-esteem, solving problems and achieving goals, dealing with - excessive eating, drinking, smoking, spending etc., managing anger and living happily. Living life to the full is recommended by NHS England. It was found to be effective for adults with mild-to-moderate depression and anxiety in a comparative, clinical feasibility study (Pittaway et al, 2009).

Effectiveness of CCBT

CCBT packages were found to be effective in many studies. Sikorski, Luppa, Kersting, Konig, and Riedel-Heller (2011), after a thorough meta-analytical review, opines that CCBT may serve as a first-step of treatment for depression within a stepped care approaches. CCBT, like CBT was first developed for depression, gradually it was found to be

effective for other mental health as well. Increasingly, CCBT packages are viewed as an effective first line tool for the management of common mental health problems (Cavanagh et al., 2006). In the following section, effectiveness of CCBT for depression and other mental health conditions is briefly discussed.

Depression. In a meta-review of the effectiveness of CCBT published from 1999 to 2011, it was found that CCBT is effective for depression (Foroushani, Schneider, & Assareh, 2011). It is, however, not recommended for severe level of depression. Systematic review of four RCTs had found CCBT packages to be effective in reducing mild-to-moderate level of depression (Kaltenthaler, Parry, Beverley, & Ferriter, 2008).

When compared with traditional face-to-face therapy in a RCT, both groups were equally beneficial, however, face-to-face therapy group showed worsening of depressive symptoms three months after the termination of treatment (Wagner, Horn, & Maercker, 2014). A review of the effectiveness of three internet-based programs found equal outcomes to standard therapy (Eells, Barrett, Wright, & Thase, 2014). So, there is conflicting evidence on short-term and long-term effectiveness of both face-to-face and internet-based services.

Long-term improvement and drop-out rates are key deciding factors that determine the effectiveness of any treatment module. Researches are scarce in both of these aspects. A meta-analytical re-evaluation found that even though intervention causes significant immediate reduction of symptoms, the services are associated with higher drop-out rate and lower long-term improvement of functioning (So et al., 2013). A blended treatment package comprising of both face-to-face and web-based intervention seems to result in higher improvement rate in depression as well as anxiety (Kooistra et al., 2016).

Future research on the long-term effects and drop-out rates are necessary to ensure the effective development and delivery of the internet-based services (Ebert et al., 2015; So et al. 2013).

In summary, CCBT packages were found to be effective in many studies for Depression (Eells et al., 2014; Wagner et al., 2014) as well as for adolescents' depression (Smith et al., 2015). In a meta-analysis that identified 13 RCTs including 796 children and adolescents, concluded CCBT packages as effective for adolescents' anxiety and depression (Ebert et al., 2015).

Anxiety-based disorder and other conditions. Along with depression, many CCBT packages were developed to address anxiety-based and other mental health conditions. Both depression and anxiety were found to be effectively reduced by CCBT (Hoifodt et al., 2013; Stuhlmiller & Tolchard, 2009). While compared to waiting-list, a meta-analysis found CCBT packages to be more effective in treating DSM-V Anxiety disorders (except obsessive compulsive disorder and post-traumatic stress disorder) (Adelman, Panza, Bartley, Bontempo, & Bloch, 2014).

OCD as well as anxiety, stress and other disability severity levels were found to be significantly reduced by CCBT website (McIngvale, Bordnick, & Hart, 2015). Significant improvement was found for stress related disorder as well (Twomey et al., 2014). Internet-based intervention is also found to be helpful for adults with attention deficits hyperactive disorder (Pettersson, Soderstrom, Edlund-Soderstrom, & Nilsson, 2014) and reducing pain in children with headaches and pediatric pain (Coakley & Wihak, 2017).

It is apparent from numerous study results that CCBT is evidence-based and can be effective for many mental health problems. However, it is also imperative to know peoples' perception and experiences while using the services. Few studies have been carried out to explore the attitude of participant.

Attitudes toward the services. CCBT package has a lot of benefit as compared to face-to-face therapy. For example, it is convenient, easy to access and once accessed relatively easy to continue. It reduces the cost of accessing services. The quality of services

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can be maintained and improved with consistency and precision. Not to mention that it provides a solution to shortage of therapist and the waiting list problems (Apolinario-Hagen, Vehreschild, & Alkoudmani, 2017). As research found that CCBT packages were appealing to many participants because of the quality, convenience, cost-effectiveness, accessibility, dis-inhibition, fewer stigmas and global aspects that the services offer to their users (Coakley et al., 2017; Eimontas, Gegieckaite, & Zelviene, 2015; Lal & Adair, 2014).

However, one of the significant features of psychotherapy that is limited in IT-based intervention is the presence of a psychotherapist. The role, experience and expertise which a professional psychotherapist brings to a therapy session, plays crucial importance in the improvement of a person's condition.

In any form of IT-based intervention, therapist's presence is more or less replaced by electronic communication which is likely to make an impact (Andersson & Titov, 2014). Instead of having therapist's empathetic listening, support and acceptance, the participant of these form of intervention have to adjust to a reply that may lack human emotion. Although research found people reporting positive outcome and positive experiences while using the services, the issues of individualism and lack of human contact were also a major concern for many of the participants (Darvell, Kavanagh, & Connolly, 2015).

Again, expert therapists adjust session's structure or agenda in accordance with person's need. No matter how dynamic an IT platform is, it may still be insufficiently efficient to adjust sessions to a person's need. An experience therapist can detect any emergency or possible safety issues and act accordingly. Reduced therapist contact in the intervention package may lead to the lack of detection of worsening of the patient's clinical state (MacLeod, Martinez, & Williams, 2009).

Another important factor is the delay between communications. There may be some delay in immediate response as well as responding to individual need of participant. Lack of

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immediate response to individual need is an inconvenience reported by participants using the services (Lamers, Bohlmeijer, Korte, & Westerhof, 2015). However, synchronous and asynchronous communication has no significant impact on the outcome (Baumeister, Reichler, Munzinger, & Lin, 2014). So, even though participants were dissatisfied with lack of individuality, the delays in communication were not found to be a significant hindrance to improvement.

Some participants reported CCBT as a helpful strategy to deal with waiting time problems, but at the same time they have negative attitudes about “perceived helpfulness” and “intention to use the services” (Apolinario-Hagen, Vehreschild, & Alkoudmani, 2017). Interestingly, the attitude toward CCBT (credibility of CCBT, expectancy-for-improvement and perceived likelihood of using) change from poor to greater preference after using the packages (Mitchell & Gordon, 2007).

A study conducted by Richards et al. (2016) found that participants were satisfied and feel supported in using the service. In another study, both clients and referrers reported moderate to high level of satisfaction in using the services and fewer difficulties accessing the service (MacGregor, Hayward, Peck, & Wilkes, 2009).

So, participants’ attitudes toward the services were diverse. Both positive and negative evaluations of the CCBT packages were apparent. The important limitation in summary includes – legal and ethical problems, license requirements, confidentiality, effectiveness, technological difficulties, payment, identification, directing a client, adherence, a lack of immediate response to individual needs (Coakley et al., 2017; Eimontas et al., 2015; Lal et al., 2014). Over the years, numbers of studies have been conducted to determine the best way to provide IT based intervention and minimize the limitation.

Most of the study focused on the involvement of the therapist in the therapeutic process (Barak et al. 2009). It was apparent from research review that guided interventions

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result in greater outcome then unguided interventions (Baumeister et al. 2014; Richards & Richardson, 2012). Lack of human contact may be minimized by including some level of guidance or therapists' involvement to the services (Palmqvist, Carlbring, & Andersson, 2007).

There are some technical conditions that require careful attention while developing the packages. The most important technical consideration includes – the licensing. The package must go through proper licensing procedure to ensure safe and evidence-based practice. Legal and ethical clarification also requires careful consideration. Set criteria for terms, conditions and confidentiality clause should be pre-defined and added for the benefits of both the developer and the participant. The issues related to payment process need to be decided and clarified beforehand. The type of technology used also requires pre-planning and pre-determination. Sufficient attention given to all of these aspects can ensure greater user's satisfaction and increase confidence and trust in the service.

Individual differences in the usage of CCBT. The continuation and the success of the services, nonetheless, depend on some degrees to the participant's perception toward the services and their individual characteristics. The predictor of successful outcomes, in terms of participants' perception, includes - higher levels of patient motivation, credibility, likely adherence, self-efficacy and a lower degree of hopelessness (MacLeod et al. 2009).

Participants' personal characteristics, such as – age, gender, educational background, social status and employment may have impact on the outcome as well as their attitudes toward using the services. Age and gender were found to have a significant impact, where older people and women are more likely to use the services and benefits from it (Hofman, Pollitt, Broeks, Stewart, & van Stolk, 2016).

An RCT on demographic characteristics of CCBT users found that participants who are older, more often female, more often single or divorced, more highly educated, less often

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employed full-time, more severe depressive symptoms and a lower health-related quality of life are more likely to access services as compared to a population survey (Spath et al., 2017). Another study found female gender, lower mastery and lower dysfunctional attitudes as a predictor of better outcome (Donker et al., 2013). In summary, female and older people are more likely to use the online-based intervention.

Knowledge of technology and confidence in using computer and internet was found to be another important predictor in determining the intention to use internet-based therapy (March et al., 2018). However, a systematic review found that personal circumstances have more impact on causing drop-out than social background or difficulties with technologies (Waller & Gilbody, 2009).

Overall, the attitudes toward the IT-based interventions are ambivalent. The successful outcome depends on multitude of factors. Factors such as - types and qualities of intervention package, computer literacy, access to services, personality, preferences and demographic characteristics of individual users, are indicative of both intentions to use the service and successful outcome. As Cavanagh and Millings (2013) pointed out that the engagement to CCBT services depends on four Ps – program factors, problem factors, person factors and provider factors. It is, therefore, imperative to take into consideration all those factors before developing the packages.

Mental Health Scenario in Bangladesh

CCBT is effective and gaining acceptance and popularity over the year. It is increasingly becoming first-line treatment of choice within a stepped-care framework. Mental health conditions, on the other hand, are also increasing rapidly worldwide. Mental disorders affect a large number of people worldwide and are the five of the ten leading causes of disability, which can profoundly destroy both the health and economy of the country (World Health Organization [WHO], 2012).

World Health Organization (2011) also estimated that one in four people in the world will be affected by mental or neurological disorders at some point in their lives. Sadly, more than 70% of those who need mental health support lack access to services (Kohn, Saxena, Levav, & Saraceno, 2004). The condition is much worse in Bangladesh.

Bangladesh is a large and heavily densely populated country with numbers that approaching the 164 million mark according to the estimates from the World Population Reference (2010). Based on the CIA (2014) estimate, Bangladesh is the eighth most populous country in the world with a total population of 166,280,712. The WHO supported National Mental Health Survey in Bangladesh showed that 16.1% of the adult population (aged 18 years or older) was suffering from some sort of mental disorder (WHO, 2005).

In a systematic review of mental disorders in Bangladesh, Hossain, Ahmed, Chowdhury, Niessen, and Alam (2014) found out that the reported prevalence of mental disorders in adults ranged from 6.5 to 31.0% and in children from 13.4 to 22.9%. The prevalence of psychiatric disorder was found higher in female 13.9% than male 10.2% and in middle and lower socio-economic class (Karim, Alam, Rahman, Hussain, Uddin, & Firoz, 2006).

Depression. Among all the mental health problems, depression is one of the most common and is an emerging public health problem. As a leading cause of disability worldwide, WHO named it as the “major contributor to the global burden of disease” (WHO, 2012). Overall, 4.4% population worldwide suffers from depression (Global Burden of Disease [GBD], 2015). Lifetime prevalence rates are different in different countries. At least 8-12% of people worldwide have a possibility of suffering from depressin within their lifetime (Kessler, Berglund, & Demler, 2003). The lifetime prevalence is relatively low in Japan (3%), but high in United States (17%) (Kessler, Berglund, & Demler, 2003).

In Bangladesh, the life -time prevalence of major depressive disorder is 4.6% (Firoz, Karim, & Alam, 2007). It is more common in women than in man (Kuehner, 2003). The point prevalence of major depression ranges from 2.6% to 5.5% among men and from 6.0% to 11.8% among women (Dubovsky & Dubovsky, 2002).

The primary symptoms of depression include low mood and loss of pleasure or interest in daily activities. Other symptoms include- suicidal ideation, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness and poor concentration. In order to be diagnosed as suffering from depression, five or more of the above mentioned symptoms with at least one primary symptom need to be present for a period of two weeks (Diagnostic and Statistics Manual of Mental Disorders V - DSM –V). Inability to continue the previous level of functioning is another significant determinant of depression. Extreme and severe form of depression may lead to suicidal ideation and eventually suicide.

There are many effective treatments for depression. Recommended treatment options for moderate to severe depression consist of basic psychosocial support combined with antidepressant medication or psychotherapy, such as cognitive behavior therapy, interpersonal psychotherapy or problem-solving treatment (World Health Organization, 2012). Availability of treatment options is far more limited in Bangladesh.

Mental health services in Bangladesh. As a developing country health system is one of these sectors which are still under the process of developing. In an overview of the health care system in Bangladesh, Vaughan, Karim, and Buse (2000) reported notable improvements in some health indicators since the 1970s, mainly as a result of large-scale government programs, but health status remains poor. So, health and population are among the most important development issues now and receive priority accordingly. Mental health status, however, remains under-recognized public health problems.

Despite this statistics, the national budget allocation for mental health care is 0.5 percent of the total health care budget (WHO, 2007). Overall, there are totals of 0.065 psychiatric beds per 100,000 people, in which mental hospitals has 0.03 psychiatric beds per 100,000 people and general hospitals has 0.009 psychiatric beds for 100,000 people (WHO, 2005 & 2007).

The number of mental health care providers is also inadequate in Bangladesh (Sultana, 2012). The total number of human resources working in mental health facilities or private practice is 0.49 per 100,000 populations. The profession wise distribution was found to be: Psychiatrist - 0.072, other medical doctors (not specialized in psychiatry) - 0.182, nurses - 0.196, psychologists - 0.007, social workers - 0.002, occupational therapists - 0.002 and other health or mental health workers - 0.028 (WHO, 2007). This poor condition of mental health support system and inadequate numbers of mental health care providers calls for some immediate steps.

CBT in Bangladesh. Among the four types of CBT practices described by British Association for Behavioural and Cognitive Psychotherapies (BABCP, 2005), the formulation driven CBT is the one that is being used widely in Bangladesh. The trained professional practices the full structure of CBT starting from the principles to key concepts of CBT. There are also some uses of CBT approaches, the second types, to some degree - especially in group such as social skill training, anger management etc.

Assisted self-help is nearly non-existent, with few exceptions such as - training psychologist or other professionals to provide primary support. No comprehensive CCBT packages have been developed in Bangladesh. A lot of Self-help materials are developed since the beginning. They are immensely helpful in both helping people in need and raising awareness of mental health problems. Some self-help materials are IT-based, but they do not follow the actual criteria of an intervention packages.

The total numbers of CBT practitioners are very few. However, given the actual scenario of mental health support system in Bangladesh and the prevalence of depression, it is apparent that steps need to be taken. So, the present study focuses on developing a package of Computer assisted Cognitive Behavior Therapy (CCBT) and to find out its challenges and opportunities in the context of Bangladesh.

CCBT in Bangladesh

Though not full package of CCBT but to some extent psycho-education materials are available in Bangladesh. For example, two YouTube Channel called, Shikte Chai and Dream Psychology are contributing to provide psycho-education and building awareness on mental health. There are also some online magazines for example – Moner Khobor, that provide its reader with knowledge and understanding about various mental health issues. The "Kaan Pete Roi" a telephone support system that provides immediate and emergency help and support to people who are in the brink of suicide. There are also few individual therapists who provide the therapy via skype. These kinds of services are helpful in the sense that it reaches people throughout the country and help people to deal with their problems. These services fall into the category of IT-based interventions. However, none of them fall into the definition of CCBT as stated by various protocols and guidelines. Therefore, the only currently available CCBT package is the www.otikrom.com.

Present program: www.otikrom.com. The developed web page is asynchronous, automated, online-based requiring internet service to access the package. The content follows the full-structure of CBT, replicating and translating almost all elements from face-to-face therapy into instrumental form. The purpose of this web page is to provide a near enough experience of face-to-face therapy without the presence of therapist as in low-intensity therapy. The web-developed was named www.otikrom.com.

Otikrom is specifically developed for people suffering from mild-to-moderate level of depression. The name and opening statement of the web page is – “Otikrom – Beyond Depression: We are here - to help you cross the road of suffering - toward the path Beyond Depression”. The web page, thus, help people cross over or walk through the path of depression and beyond the life that still waits for them. The name was selected to instill hope in the face of diversity that depression brought. The name also provides an insight that the suffering in the present moment can be resolved and future without depression can still be possible.

The main goals of Otikrom are - to help people identify and assess their problems, to help people find a way through depression by using CBT as a core component, to ensure easy and free mental health services for everyone and to ensure sound mental health and well-being. Identifying depression through the lens of CBT is the first and foremost step. Once participants learn to know their problems, then finding a way-out become relatively easy. They are taught to identify and assess themselves through description of cases, exercise and homework in each session. After that, the same case examples, exercises and homework tasks are assigned to them to progress through the intervention phase.

Thus, once logged-in, the participants are taught to become their own therapist. In that sense it is similar to self-help materials. The participant goes through the instructions and exercises given as a session-to-session basis. There is a total of 10 sessions, each session with separate agenda. Participants get access to each session after one week interval. The interval is given to ensure the completion of homework designed for the entire week. The detail session-to-session structure and content are given in the result and Appendix B.

In general, each session starts with a problem rating form and feeling rating form designed uniquely for the web page. After the initial ratings of mental state, participants are shown PPT presentations that provide a description and agenda of the session, related

psycho-education, case examples, exercise and homework instruction. The PPT presentations are unique and individually designed to fulfill each session's objectives and need. For example, the first session's PPT shows five people describing their symptoms of depression and then dividing the symptoms into five categories – situational, cognitive, emotional, physiological and behavioral.

Following the PPT presentation, participants are given opportunities to share their problems. They are given few exercises to identify and separate their symptoms after that. Finally, homework is given to do the same thing in the entire week. The second session progresses with the agenda to develop five-part model from the symptoms. The rationale is to help participants identify their problem maintaining cycle. Second and subsequent session, similarly, have different and individually designed agenda of the particular session, related psycho-education, exercise, homework, review of homework and feedback about the session. All of these are either embedded in a PPT format, exercise table, yes/no questions or fill in the blanks.

The first four sessions mainly focuses on assessment and formulation. There are three formulations in first four sessions - five-part model, Beck's model of depression and PPMP model. The participant learns about the model following the case examples as well as their own experiences of problems.

Once participant start to understand their problem and problem-maintaining circle, they are provided with a plan for treatment. The session to session distribution of treatment process are summarized and shown to them. Session five, six and seven are designed for cognitive restructuring and behavioral activation techniques. Whereas, session eight is for additional problems, such as – guilt feeling, indecisiveness that accompanies depression; and session nine is for improving coping strategies through showing participant how to respond to any difficult situations.

Session 10 provides a summary of all the sessions. It also shows a glimpse to the current conditions and level of functioning achieved by the five cases described throughout the entire package. Hence, participant walk with the five cases (observing and seeing the difficulties and adversities that each case faces) toward the path beyond depression (by witnessing the five-cases ascend to depression free life).

Rationale of the Study

Bangladesh is a developing country. The Mental Health Care System is still developing. There are inadequate support facilities and fewer therapists to offer help. But mental health problems are rising very rapidly. It is becoming a challenge to provide support to all those who need help. Again online and internet is readily accessible to a large proportion of people in Bangladesh. If the internet accessibility can be used to provide support to those in need, it will be very helpful and a large number of people can receive help in this way. CCBT have been found to be effective in many countries. So, this study tried to develop a package for CCBT and determine the feasibility of CCBT in the context of Bangladesh by answering the following questions and fulfilling the subsequent objectives.

Research Questions

The main research question that the current study sought to answer was, “how do people respond to CCBT?” Once the initial question was answered, the research then revolved around another question, “What are the challenges and opportunities in applying CCBT?”

Objectives

The main purpose of this research was to develop a package to provide CCBT to Bangladeshi population. Another objective of this research was to see the outcome of CCBT in the context of Bangladesh

Specific Objectives. There were few specifics objectives that stem from the two main objectives mentioned above. For the first objective, there were three specific objectives. These includes – to find out the most frequently reported symptoms of depression in the context of Bangladesh, to overview the actual CBT practices in Bangladesh and to develop a package to provide CCBT for Bangladeshi population

Similarly, there were three specific objectives for the second objective. These include – to see the outcome of CCBT in treating depression, to see the level of satisfaction in using the package and to find out the shortcomings of the package in providing help.

Chapter – 2

Methodology

Methodology

To ensure access to the psychological therapy for the population of Bangladesh, this research was designed to develop a computer based therapeutic tool to manage depressive symptoms to those who are in need. Hence, the main purpose of this research was to develop a package to provide CCBT for Bangladeshi population. The second purpose was to see the outcome of Computer-assisted Cognitive Behavior Therapy in treating depression. To achieve these goals explorative, sequential mixed method design with the philosophical stand of pragmatism paradigm was selected.

Mixed method research integrates both qualitative and quantitative elements to address research questions that cannot be answered only adhering to any single approach. Because of this, the method was unable to fall within either the positivist or interprtivist worldview. As an alternative to either of this worldviews, pragmatism became a common associate of mixed method research (Teddlie & Tashakkori, 2009). The rationale for using this worldview and methodology are described in the following texts.

Philosophical standpoint

Paradigm. The core part of any research is the paradigm or worldview adopted by the researcher. A paradigm or worldview is “the consensual set of beliefs and practices that guide a field” (Morgan, 2007, p. 49), “a basic set of belief that guide action” (Guba, 1990, p. 17). It could be interpreted as perspectives that adopt particular approaches to inquiry while discarding other (Feilzer, 2009).

Pragmatism as a paradigm allows the researcher the freedom of choice (Creswell, 2007). Rather than arguing on the nature of reality and possibilities of truth (Morgan, 2014) as in positivism and interpritivism, pragmatism paradigm allows the mixing of different research methods as well as modes of analysis while going back and forth between induction and deduction with primary focus on practical utility (Feilzer, 2009; Morgan, 2007). The

present research focused mainly on the practical utility, mixing of both induction and deduction were thus a necessity to achieve the practical goal of developing a tool to help people in need. Pragmatist researchers emphasize on research questions (Saunders, Lewis, & Thornhill, 2009) and use all available approaches to completely understand the problem (Creswell, 2007).

The main focus of the current research was on research questions which were multi-dimensional and new in nature. The questions sought both truth and reality. In the present research, the **complementary strengths** (Morgan, 2007) from pragmatism helped in designing, implementing and evaluating the computer assisted cognitive behavior therapy instrument for depression.

Literature reviews indicated that there was no available online intervention package available, at the time, in Bangladesh. As with all new area of problems and research questions, collecting sufficient amount of knowledge following inductive approach became the priority. So, the first focus was to find out the true scenario in Bangladesh that means to find out the participants' view of depression and structure of existing cognitive behavior therapy practices. The second focus was checking the validity of the content and then transferring these to online form. An adherence to interpretivist philosophical stance was, therefore, warranted for the first phase of the research. But only developing a Computer-assisted CBT package was not enough to answer the research question completely.

People's responses to this computerized form of therapy remained unanswered. Thus, finding out the actual impact of computer assisted CBT package on depression became a major research concern. The second question, therefore, can be answered effectively with taking positivist philosophical position. When the research question does not adhere to positivist or interpretivist philosophy, then researcher can conform to pragmatist's view and work with both philosophies (Saunders et al., 2009). Thus, a "what works" leading to a mixed

methodology was used to allow the researcher to address questions that do not sit comfortably within a wholly quantitative or qualitative approach to design and methodology (Armitage, 2007).

Mixed method. Mixed method research is now considered as the third major research approach with pragmatism as its philosophical partner (Denscombe, 2008, Morgan, 2014). In mixed method research, a researcher usually integrates components of both qualitative and quantitative approaches (such as – the use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) (Creswell, 2014; Johnson, Onwuegbuzie, & Turner, 2007; Tashakkori & Teddlie, 2003).

The mixed method research is based on the assumptions that collecting diverse types of data may provide a more comprehensive insights into the research problems or gap in knowledge than either qualitative or quantitative method alone (Creswell, 2007). The purpose of this mixing is to obtain breadth and depth of understanding, perspective, complexity, and difference and/or corroboration (Johnson et al., 2007). As apparent from the research question and the discussion above, the use of both qualitative and quantitative method was required in the present research.

Mixed method is best suited to address problem that are complex in nature, and requires more than one phase. It is an iterative, cyclical approach to research (Teddlie & Tashakkori, 2010), sometimes going from induction to deduction or vice versa (Teddlie & Tashakkori, 2012). The present research had two phases. The first phase of the research sought answers to questions that can only be answered by explorations – what are the current mode of CBT practices in Bangladesh, how depression can be portrayed in the language of people and what could be included in a web page to help people. These questions led to the inductive exploration as known as qualitative method.

The research, then, progressed to answer questions that are more confirmatory in nature. For example, whether the CCBT package can impact on reducing depression and whether participants gain benefits from using this service. These questions can only be answered through deductive reasoning. The methodology adopted in second phase was quantitative. Thus, by using both qualitative and quantitative methodology, it was possible to understand the complex question that was raised in the present study.

Dimensions of mixed method research. Mixed method research has few characteristics or dimensions that help a researcher to design the research. While designing the present research few of these dimension and characteristics helped the present researcher to appropriately shape the direction of the research. Schoonenboom and Johnson (2017) proposed seven primary dimensions (purpose, theoretical drive, timing, point of integration, typological vs. interactive design approach, planned vs. emergent design, complexity) and ten secondary dimensions (phenomenon, social science theory. ideological drive, combination of sampling methods, degree to which the research participants will be similar or different, type of implementation setting, degree to which the methods similar or different, validity criteria and strategies, full study vs. multiple studies).

Greene, Caracelli, and Graham (1989) coined six important characteristics that should be taken into consideration while designing, these are – methods, phenomena, paradigm, status, implementation (timing and independence) and study. Some of these components are described throughout the chapter. The focus of discussion was on how they shaped the present research.

The processes to mix qualitative and quantitative method in a research depend on the **purpose** of the integration. That means the reason behind using a mixed method research. There are five purposes that provide justification for choosing a mixed method study (Greene et al., 1989). Greene et al (1989) cited them as – **triangulation** where results of different

methods are used to seek convergence and corroboration and to increase the validity, **complementary** where results from one method help elaborate, enrich, clarify, illustrate the results from other, **development** where result from one method help develop or inform other method, **initiation** where consistencies and discrepancies in result from using different methods are used to gain fresh perspectives, **expansion** where the breadth and range of inquiry are increased using different method. Here, the "development" served the best justification for the present research. Because result from the first part of the research (web-development phase) helped in the second phase of the research (evaluation of webpage's impact on depression).

A mixed research could be either dependent or independent. This research was **dependent** in nature, in the sense that "the implementation of the second component depends on the results of data analysis in the first component" (Schoonenboom & Johnson, 2017). Without the development of the instrument in the first phase, second phase couldn't have been carried out.

Another important characteristic of mixed research is **status** (Greene et al., 1989) or **weighting** (Creswell & Plano Clark, 2007). It means the relative importance and role one method play over other. For example, a study can be qualitatively or quantitatively driven or dominant or both methods may play equal role. Even though this present study was equally divided in two phase – qualitative and quantitative, the problem addressed was relatively new. There were no online versions of CBT in Bangladesh available at the time. So, the research needed in-depth knowledge, exploration in both phases of the study. The research was, thus, primarily qualitatively driven or qualitative dominant.

Timing of two (or more components) is an important dimension in any mixed method design (Greene et al., 1989; Schoonenboom & Johnson, 2017). Morse (1991) coined the term "simultaneous" and "sequential". That is the mixing of two methods (qualitative and

quantitative) can occur sequentially or simultaneously. Creswell (2007), however, described the two types as “concurrent” and “sequential”. Schoonenboom and Johnson (2017) defined a sequential design as a method where the quantitative phase precedes the qualitative phase or vice versa and a concurrent design as a method where both phases are executed (almost) simultaneously. The present research adhered to the sequential timing. Therefore, the design selected for this research was explorative and sequential. The reason for taking this type is described in detail in following section.

Explorative sequential mixed method design. The next important question was which mixed method research best serve the purpose of present research. Mixed Method design can vary depending on the way qualitative and quantitative elements embedded and designed in a particular research process. Creswell (2007) described three primary models of mixed method research.

Convergent parallel mixed method design where researcher converges or merges quantitative and qualitative data to gain comprehensive understanding of the problem (Creswell, 2007). Here, data collection takes place approximately the same time. **Explanatory sequential mixed method design** where researcher first uses quantitative method and to explain the findings in more detail undergo a qualitative research (Creswell, 2007). Here, data collection timing is sequential, that is data are collected in stages. An initial quantitative phase is followed by a qualitative phase (Creswell, 2007).

Exploratory sequential mixed method design where findings generated from an explorative qualitative phase were used to build into a second, quantitative phase. As the name suggests the data collection timing is sequential. This kind of method is mostly appropriate for developing instruments where instrument developed in the qualitative phase were used in the follow-up quantitative phase (Creswell, 2007). In present research, an explorative sequential mixed method design was used, because developing an instrument was

the primary focus of the research. The sequence and description of explorative, sequential mixed method design are depicted in Figure – 1.

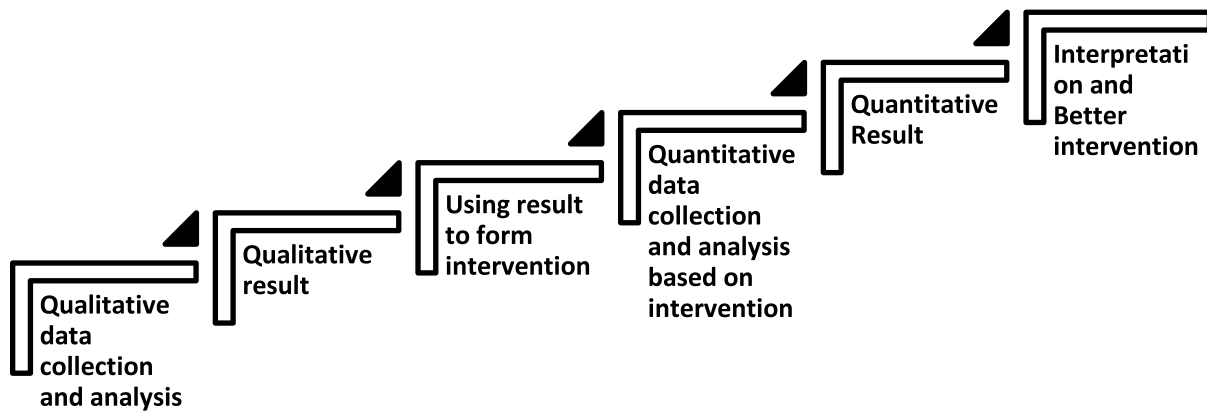

Figure 1. A flow-chart showing the steps in explorative sequential mixed method design

As the name suggests, mixed method design started with a qualitative research phase, then incorporating and using data and information from first phase of research, it sequentially progressed to a quantitative one (Creswell, 2014). The first question: “How Bangladeshi people respond to Computer-assisted Cognitive behavior therapy”, an explorative question, which cannot be answered without a computerized package. The first phase of the research thus required a qualitative approach, in which qualitative method was used to first collect and summarize the need and the requirement of the service receiver and then to develop a CCBT package.

The second question, a confirmatory question, “whether the package has any impact on treating depression”, which required administering the web page to sample of population and then to drew conclusion on the impact of its use. This led to the use of quantitative data collection and analysis method.

The first phase had three sub-phases - symptom review, reviewing existing CBT practices and development of content. The three sub-phases separately with their individual goals led to the fulfillment of the actual purpose of this phase - developing a web-version of Cognitive Behavior Therapy. The qualitative phase, thus, ended with turning the face-to-face therapy contents into web-version. The second phase of the research focused on the outcome of CCBT package by administering the treatment to people with depression. The procedure of the research is shown as a flow - chart in Figure – 2.

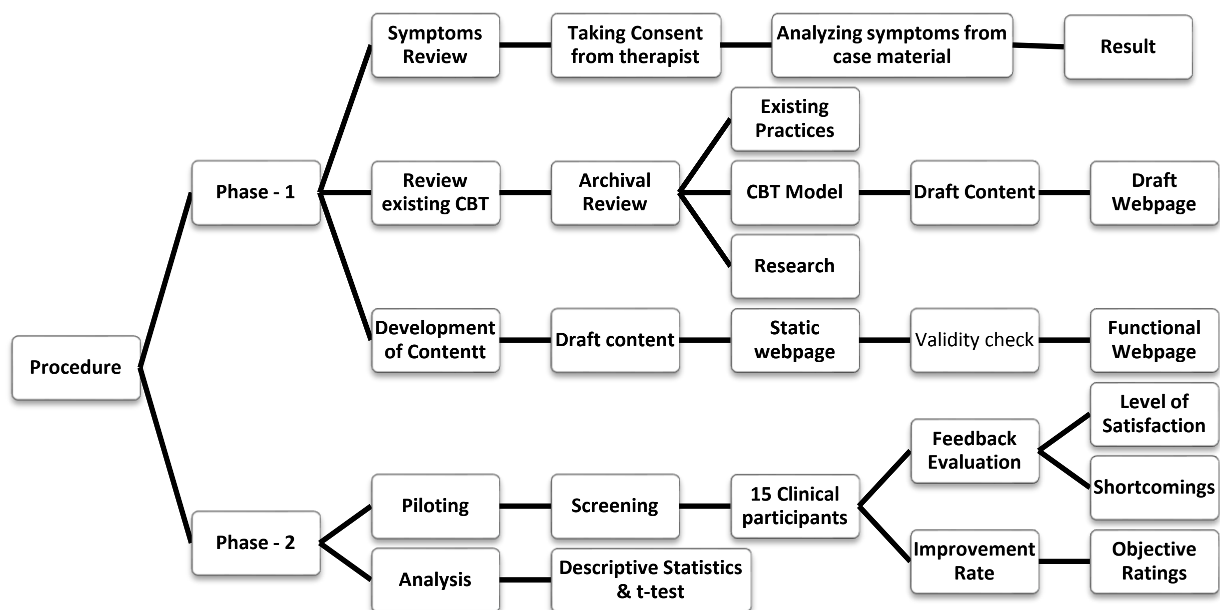

Figure 2. Procedure of the research

Qualitative Phase

Qualitative research is used when there is a need for exploration and when existing knowledge aren't sufficient to explain the problem (Creswell, 2007). Both of these were true for the first phase of the present research. So, qualitative methods were used in the first phase. The qualitative tools that were used are described below along with the rationale and procedure.

Symptoms review. This web page was developed with the intents of providing self-help services to people with symptoms of depression. Prior to the development, a comprehensive understanding of the need of people with depression was essential, because only then the symptoms can actually represent depression in the web page. The purposes of this sub-phase were - to get an essence of peoples' actual problem description and to select symptoms lists for webpage - a review of symptoms were thus carried out. The symptoms reported by people with depression were collected from secondary data source

Data collection method. Secondary data refers to the data that were already collected or produced by someone else for some other purpose (Ajayi, 2017; Boslaugh, 2007). Primary data which were collected by the researcher himself for the first time (Ajayi, 2017) were usually more accurate, valid and provide higher level of control for the researcher (Sorensen, Sabroe, & Olsen, 1996).

Secondary data, even though may have validity and richness concerns, they do, however, help save time, cost, waste of data and experimental bias ((Boslaugh, 2007; Sorensen et al., 1996). The present study had a lot of phases, which were essential for the actual goal achievement. Thus, minimizing time, cost and waste of data served the goal of actually answering the complex research question that required a lot of different types of data collection. Since the data had been already collected it freed the researcher to devote time and effort to other steps in the scientific process (Greenhoot & Dowsett, 2012).

The use of secondary data helped in minimizing experimental bias too. The main focus of this phase was to find out the kind of symptoms that were frequently found in the client within Bangladeshi context. That is, how they were reported and what were the initial portrayals or description of these symptoms. People with depression were more likely to give an accurate description of their symptoms to a therapist while seeking help than to an unknown researcher.

A therapist's reflection of client's reporting of problem can give a real picture of how people report their symptoms when they sit in front of the therapist. Thus, to ensure that the data were from the natural environment - without any pressure of being in an experimental situation – this data collection method was adopted.

Sample. Four sampling sites were selected through purposive sampling strategy. It is called purposeful sampling strategy because researcher purposefully selects individuals and sites that could provide an understanding of the issues raised in the research (Creswell, 2007). These sites were selected because these were the most visited places where people with depression normally go to sought help.

These include - National Institute of Mental Health (NIMH), Dhaka Medical College and Hospitals (DMCH), Bangabandhu Sheikh Mujib Medical University (BSMMU) and Nasirullah Psychotherapy Unit (NPU). The practicing therapists in these four settings were asked to provide the initial representation of depressive symptoms. The session records were accessed additionally with proper permission. A total of 35 participants' records were collected from the therapists.

Point of inquiry. Secondary data were collected according to a topic guide that was made prior to the data collection. The topic guide consisted of point of inquiry to be made. As it was apparent from the objective of this phase, researcher wanted to gain a portrayal of symptoms. Thus, topic guide covered the areas of inquiry including - symptoms commonly presented by people with depression, the cognitive, emotional, physiological, behavioral manifestation of the symptoms, onset or the life events that triggered the symptoms.

Data analysis. The main focus of the data analysis in this phase was to identify a structure or common patterns of verbalization of problems. The main goal of any forms of qualitative analysis is making meaning and understanding the underlying process and structure through organizing, categorizing, explaining and portraying the qualitative data

(Creswell, 2007; Flick, 2013). The symptoms of depression, as reported by people and as recorded by therapists, were analyzed thematically.

Thematic analysis mainly focuses on "what" is said rather than "how" it is said (Riessman, 1993). It was used for identifying, analyzing and reporting pattern (theme) within data (Braum & Clarke, 2006). Understanding the underlying process or looking beyond what the participant said was not the focus of this phase, and thus thematic analysis guided the research toward the emergence of code and theme.

Nowell, Norris, White, and Moules (2017) summarized six phases of thematic analysis procedure that they outlined to meet the trustworthiness criteria given by Lincoln and Guba (1985). These were – familiarizing with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and finally producing the report.

Thematic analysis and content analysis have a lot of similarities especially they both search for the pattern and theme by cutting across the data (Vasimoradi, Turunen, & Bondas, 2013), but one added benefits of content analysis, that made it more appealing to mixed method researchers, is it provide an opportunity for quantification of qualitative data (Mayring, 2014).

There are three types of content analysis - conventional content analysis where coding categories emerge from the data without adherence to any prior theory, directed approach where initial codes and coding categories were guided by existing theory or research and summative content analysis where the emerged content were counted, compared and then interpretation of the context were made (Hsieh & Shannon, 2005).

In the present research, therapists' notes of first three sessions were used. The secondary data were, therefore, first collected, then stored and sequenced. They were repeatedly read to get an impression of the symptoms' representation. Following the thematic analysis process, the researcher first read and re-read the text. Then codes were assigned to

the texts. Coding mean labeling or categorizing the texts segments by assigning meaning (Miles & Huberman, 1994). Thus the symptoms were first coded into some label. These emerged label or code were then categorized or grouped into some broader themes. Theme means “some level of patterned response or meaning within the data set” ((Braum et al., 2006; p. 10).

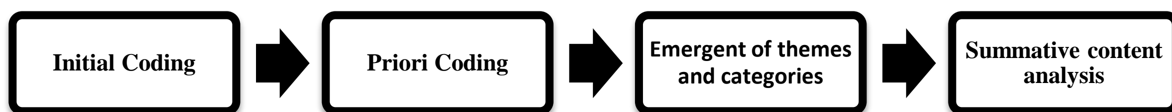

Figure 3. Steps in qualitative thematic content analysis

However, after the emergence of initial theme, defining and naming the themes were done with a focus on five-part model of cognitive behavior therapy. This process of coding is called priori or template coding (King, 1998). In the priori or template coding, researcher uses code or theme based on some already existing research or theoretical framework (Blair, 2015). Since the theme of the web page was CBT, the use of such theoretical orientation was necessary.

The symptoms found in five broader themes were then analyzed again using content analysis. This is called summative content analysis. The emerged themes were analyzed by the frequencies of “number of item coded” and “number of coding references”. The themes, then, were interpreted to understand the context. Themes were selected for the webpage based on the frequency of their references and the associative meaning. The entire process of this qualitative analysis can be defined as qualitative thematic content analysis (Green & Thorogood, 2004).

Both thematic and content analyses were done using NVivo software. Finally, frequently reported symptoms as they were verbally portrayed by people with depression

were summarized. Based on the analysis of data, important and frequently reported symptoms were selected for the “Problem rating form” of the intervention package. The symptoms were – low mood and sadness, lack of interest in activities and reduced activity level, low self-esteem and indecisiveness, attention and concentration problems, problems in relationships and real life crisis. The result of the symptoms review is given in details in result section.

Reviewing existing CBT practices. The second sub-phase was also qualitative in nature. It was dedicated to have an understanding of how symptoms represented by people with depression were addressed and treated face-to-face by CBT practitioners. From the findings of this sub-phase, contents for the web page were selected and finalized. The contents for the web page were crucial and central to the present research. They were at “the heart of the entire research” - in the sense that these contents were eventually turned into the desired instrument or web page. In order to develop the content an extensive amount of reviewing through existing literature and records were necessary.

Data collection method. In order to gain an idea of the traditional face-to-face therapy practice in Bangladesh, it was crucial to know what happen in a session with a therapist. Observing a face-to-face therapy session as they progress was time-consuming. Again, the use of CBT content and technique materials differ from case to case as well as therapist to therapist. So, only observing one or two cases may not give a comprehensive idea. The process of observation may even interfere with the work of therapist as well as the clients, and thus interfering with the improvement of people with depression. However, already existing successful case reports can give better and more resourceful insight about the process. So, researcher used an archival form of data collection to study cases as they were dealt by professional in the relevant field.

Going through the therapists’ description in the form of case report, case log and case documents were an efficient way to have a clear understanding of “what’s going on in the

therapy session". It was not, however, a secondary data collection method. Archival data collection and secondary data collection method are similar in the sense that they are both collected from pre-existing sources. But they are also different in the sense that archival data are usually gathered or collected from available sources and secondary data are usually generated or produced from available sources (Vogt, Gardner, & Haeffele, 2012). In this phase of research, researcher gathered and collected the already existing documents without going through any form of interview, observation or survey.

Sample. The library of Department of Clinical Psychology, University of Dhaka and archive of Nasirullah Psychotherapy Unit, University of Dhaka were two main sites for the data collection. These two sites were purposively selected because these were the largest source of archival documents of current Cognitive Behavior Therapy practices in Bangladesh. A total of eight case reports of depression and seven case reports of other conditions were selected and reviewed. The 20 case logs were reviewed to get an idea of session-to-session conduct. Finally, therapists' documents of nine cases were selected and reviewed to get an idea of "how", that is – how therapists provide psycho-education or how people do their homework.

Data analysis. Data was analyzed following the similar qualitative form of analysis – thematic analysis. Because finding underlying meaning or developing a theory was not the intention of this phase. Data were first stored and organized. To get an essence of the phenomena, they were read several times. The case reports were reviewed to get an idea of "what"- as in what contents, models and techniques were generally used. The analyses of case logs were summarized into a timeline. Both case logs and case reports gave an impression of "how therapists deal a case of depression in Bangladesh". The themes appeared from this phase helped to shape the development of draft content for the web page. The results are described in detail in the result section.

Development of content. The third sub-phase was carried out to summarize and develop a web page and to ensure that the materials were indeed valid. This sub-phase was concluded after the validity check and recommended changes were made to the web page. Beck's (1976) Cognitive Behavior Therapy model was chosen for the development of intervention package. The ideas generated from the previous phases were summarized and incorporated into a draft of the web-application.

Draft content. The draft content contained a total of 10 sessions. Each session had a PPT slide, feeling rating form, problem rating form, exercise, homework for next session, and review of previous session's homework. An assessment scales developed specifically for Bangladeshi population and used extensively in dealing with depression was used in the web page as a base for objective ratings. Problem rating and feeling rating were also included into the draft content as subjective measures. The contents of feeling rating were developed from the result of "existing CBT practices". Problems rating were the summarized form of the frequent symptoms reported by the people with depression as found in "symptom review".

Two formulation models were used – "Beck's cognitive model of depression" and "Predisposing-Precipitating-Maintaining (PPM)" model. Both of these models are widely used by the therapist in Bangladesh as found in the archival analysis and literature review. The treatment techniques and homework materials were chosen from existing practices of CBT.

Draft web page. The content of the web page was provided to a web page developer for the development of a draft static web page. The purpose of this draft web page was getting a full picture of the web page and determining the validity before turning the draft content into dynamic web page form. The information was provided to web page developer and a static web page was developed.

Validity of content. This phase involves refinement of web page through several forms of evaluation by experts. The first draft web page was reviewed by two judges. They were Clinical Psychologists having expertise, clinical skills and experiences in cognitive behavior therapy. The static web page was presented and described to them. Their feedbacks were summarized. The changes suggested by the Judges were incorporated into the second draft static web page. The second draft web page was given for further evaluation by Judges. The second form of judge evaluation focused on the content, for example - the relevancy of particular contents, content's order and feasibilities, language used and users' friendliness.

Sample. A total of 10 judges were selected. The judges included - five clinical psychologists, two assistant clinical psychologists, a software engineer, one judge with depression and one from non-clinical population. The description of judges is added in the Appendix C.

Instrument. A judge evaluation form was made for the judges to express their opinion in written form. The form contained ten parts – nine for nine sessions, one part for web page structure and one part for overall evaluation. Judges rated a particular item on the point where they either agree or disagree. On the case of disagreement, judges either wrote or verbally voiced their recommendation. The judge evaluation form is added in the appendix.

Data analysis. The feedback and recommendations were all summarized. Because the data were largely qualitative in nature, a qualitative thematic analysis was carried out. The frequently codded items were summarized.

Incorporating changes. The recommendation by judges included several aspects. Adding new sentences to make the web page more users' friendly was mostly recommended feedback elicited from judges. There were few suggestions on structural changes to make the web page more users' friendly. Changing sentence construction were another mostly recommended suggestions given by judges. In some cases, some level of changes in overall

presentation of the topic was also discussed. The changes suggested by the experts were incorporated in the web page. The web page was then transformed into web language to make it dynamic to user.

Transformation into web language. The static web page merely showed the content in a web page without any functional language or logic. So, the static form was in need of transforming into a dynamic or functional web page. In this phase of the research, no traditional research method or techniques were followed. There were numerous amounts of mind-mapping and brain-storming. Researcher acquired sufficient knowledge about how web-language works prior to this. The process of transformation is showed in figure – 4.

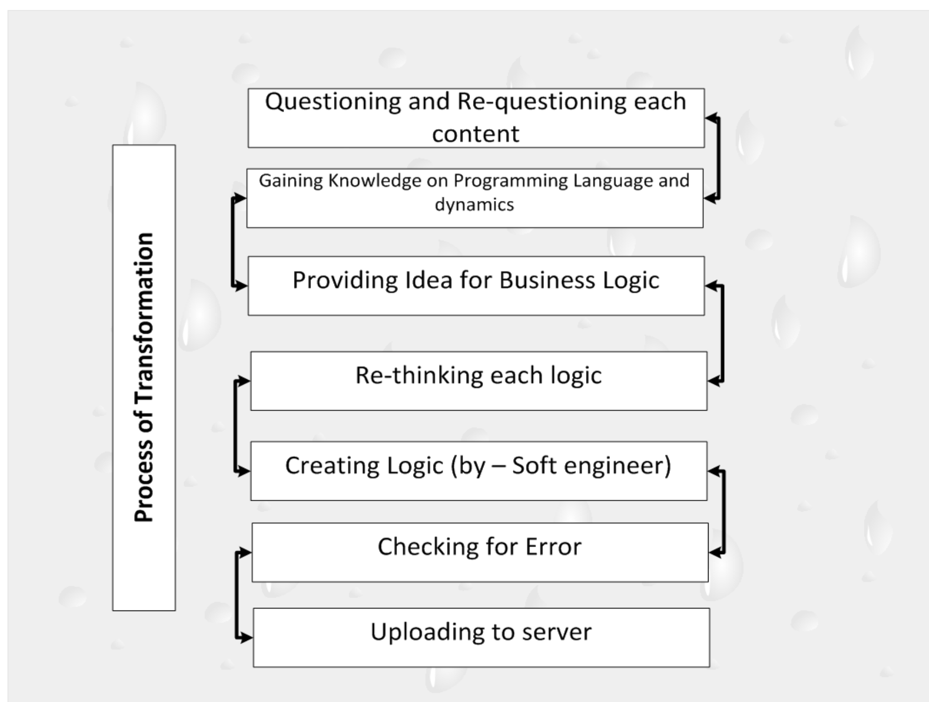

Figure 4. *Steps in the process of transformation*

The contents summarized from the first two sub-phases of research were subjected to questioning and re-questioning. The first focus was to select content that could be changed effectively into web-form. The second was to determine how it could be changed into web-language with ensuring its effectiveness and feasibility and without compromising its basic

structure, purpose and utility. The third step was to communicate the content in a language that is understandable to the web-developer. In this step, the researcher and the software engineer worked together to develop business logic. The researcher then went through the logic again before finalizing them. The finalized logic was then written and strucutred by the software engineer.

Once the dynamic web page was created, before uploading it to the server, it was checked for error by going through each and every session over and over again. When each and every possible error and safety strategies were ruled-out and checked thoroughly, the dynamic web page was ready to be uploaded into the server for the general use. At a glance the transformation resulted in following change:

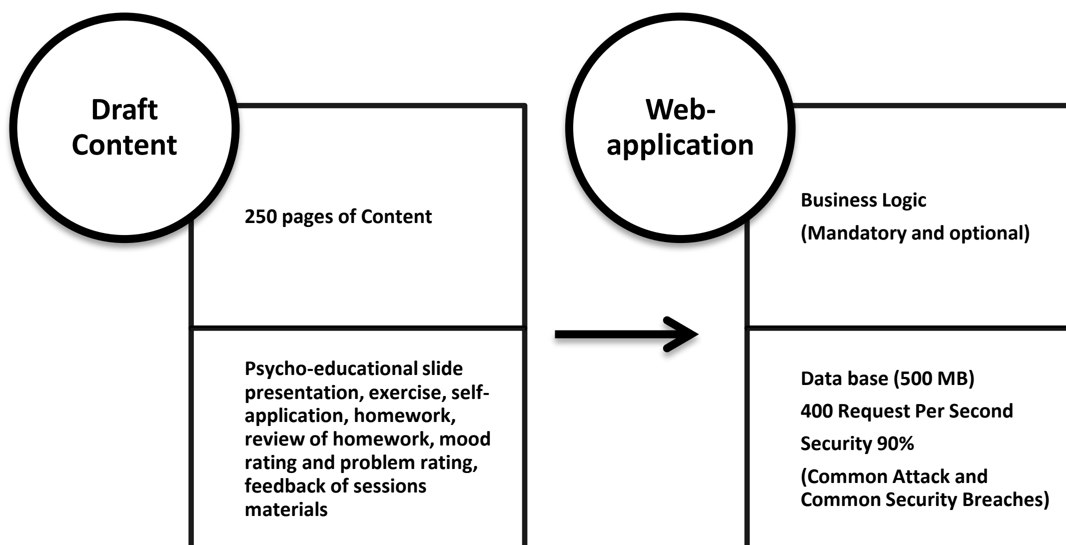

Figure 5. The content transformed from documents form to dynamic web page form

Quantitative Phase

This was the second major phase of the research. Once the Computer assisted Cognitive Behavior Therapy (CCBT) instrument was developed and validated, the second

major question rises, “What are the impacts of CCBT in treating depression?” As the question suggest, this phase required a deductive, confirmatory methodology that answer the “whether or not” the CCBT have any impacts. So, a quantitative methodology was adapted.

Quantitative methodology is based on empiricist and objectivist epistemology, with a view that there is an objective reality that could be explained by statistical measure (Yilmaz, 2013; Landiyanto, 2018). The adaptation of quantitative approach was necessary in this research in order to compare the pre-test and post-test data. That is, to see the difference between before the administration of CCBT treatment and after the CCBT treatment. The researcher adopted a “quasi-experimental design” - “one group pretest-posttest design” to evaluate the outcome.

Randomized Control Trials (RCTs) is the most “robust method” or “gold standard” to determine any treatments’ efficacy (Sessler & Imrey, 2015; Sargeant, Kelton, & O’Connor, 2013; Saturni et al., 2014). But it is not always feasible to use a true experimental design due to logistical constraints or ethical boundaries. A quasi-experimental design with only one group pretest-posttest without a control group can be effective first stage or pilot stage before any rigorous experimental design can be conducted. Barker, Pistrang, and Elliott (1994) referred to this as an open clinical trial.

Design. The design of this test and review phase can be represented as X_1-O-X_2 design, where X_1 represented the pre-test phase, X_2 represented the posttest phase and O was the treatment package (an online CCBT package developed in the previous phase of the study – www.otikrom.com). As it is apparent from the design, independent variable of the study was the web page called www.otikrom.com, and the dependent variable was the changes in the level of depression after weeks of administration of the web page.

The total treatment package length was 10 weeks. So, using a control group and withholding treatment with the placebo or waiting list may end up jeopardizing participants’

mental health. The experimenter's manipulation was limited; there were lots of other factors that can play role in the change in depression level other than the independent variable. But isolating the participant from their natural environment was not feasible, ethical or appropriate, because the treatment package was designed to change behavior in their natural settings.

Sample. The target population of this research was the people who are suffering from depression in Bangladesh. The purposive sampling technique was adopted. Among the major psychotherapeutic and mental health support center one of them was chosen through purposive sampling technique. The selected sample site was "Nasirullah Psychotherapy Unit". The participants were selected from the waiting list of this unit.

Nasirullah Psychotherapy Unit had a first contact form where the people seeking note their problems and symptoms. As a primary screening process these notes were reviewed and 46 participants were selected for the trial. The participants were then approached via phone. Details of the treatment package were shared with them over the phone. Among the 46 participants 21 agreed to participate in the trial and 25 participants voiced their discomfort with online therapy and preferred face-to-face therapy instead. The 21 participants were screened in a face to face session, where six participants met the exclusion criteria. The final number of participants for the treatment trial was 15.

Inclusion Criteria. The main inclusion criteria were – the participant had to be literate with sufficient skills in computer and internet literature. The availability of computer and internet was another criterion that needed to be met.

Exclusion criteria. The presence of suicidal ideation or attempts and psychotic symptoms were primary exclusion criteria. The inability to use computer or internet was another crucial criterion.

Table 1

Demographic characteristics of participants

Variables	Level	Frequency
Gender	Male	6
	Female	9
Age	21 to 40 years	15
Education	H.S.C	3
	Graduation	5
	Post-Graduation	7
Marital Status	Married	6
	Single	9

Instruments. The instrument was the developed CCBT package – www.otikrom.com. There were 10 sessions in the web page, each session containing feeling rating, problem rating, psycho-education materials, exercise of the materials presented, feedback of previous session's homework, homework for the next week and evaluation form. The assessment instruments embedded on the web page are described as follows.

Depression Scale (DS). The Depression Scale (DS; Uddin & Rahman, 2005) was developed for depression with adherence to Bangladeshi culture. It was developed by Uddin and Rahman (2005) to measure both the presence and severity of depression. The scale has 30 items. Participant rated each item with a 5-point Likert Scale ranging from "not at all" to "absolutely appropriate". The split-half reliability of the scale was found to be 0.7608. The test-retest reliability was 0.599 (significant at $\alpha = 0.01$). The scale has positive correlation with both psychiatrist' ratings ($r = 0.377$, significant at $\alpha = 0.01$) and patients' self-ratings (r

= 0.558, significant at α = 0.01) of depression. Construct validity was 0.716 (significant at α = 0.01). This scale was being widely used in Bangladesh.

Subjective ratings. There was “Feeling rating” and “Problem rating” form at the beginning of each session. The purpose of these ratings was to get an idea of the participants’ mental state after one week interval. These rating provided an overall glimpse on participants’ mood and problem severity after one week interval. They also served as an indicator of change, noting any improvement or deterioration in participants’ conditions.

Problem rating form. The “Problem rating form” was created from the mostly codded complaints found in “symptoms review” phase. These symptoms were summarized on the basis of frequencies of reporting by people with depression. A total of 11 items were selected for problem rating form. These were – low mood and sadness, lack of interest in activities and reduced activity level, forgetfulness, attention and concentration problems, failure in studies, failure in work, problems in relationships, loss of confidence, illness or disabilities, death of a loved one and others. The items were presented in a chart at the beginning of each session. Each item had an associative 1-10% ratings scale where 1 indicated lowest level and 10 indicated highest level of severity. Participants had freedom to select the items that they deemed relevant to them and rated them individually.

Feeling rating form. The “Feeling rating form” contains a chart listed with 20 feeling words. Each individual feeling was associated with 1-10% ratings scale, where 1 means lowest level and 10 means highest level of severity. The form contained both positive and negative feelings. The feeling words were – sadness, pain, crying, weakness, anger, embarrassment, hatred, emptiness, irritation, calmness, normal, happy, uncomfortable, anxious, energetic, frustrated, surprised, lucky, tormented and proud. Participants had freedom to choose any or none of them.

Evaluation form. At the end of each session, an evaluation form was attached for the participant. By filling out the form participant provided their feedback about the session's content and its usefulness. The evaluation form was divided into four sections.

First section contained items that were specifically designed to evaluate the overall structure, content and language used in CCBT package. Participants were asked to evaluate the quality of psycho-education, language, exercise materials and homework materials. There were seven items in this section. Each item used a 5-point Likert Scale, which ranged from completely agree to completely disagree.

The purpose of second section was to determine whether the materials used fulfilled the agenda, that means participants rated whether the session's material were helpful and in accordance with their expectation. The numbers of items were varied, depending on the number of agendas in each session. Each item was rated using a 5-point Likert Scale, which ranged from completely helpful to completely unhelpful.

The third section was designed to evaluate overall usefulness and satisfaction experienced while using the web page. There were two items in this section – one rated the perceived usefulness and the other rated perceived satisfaction. Each item was rated by 1-10% ratings scale, where 1 means lowest level and 10 means highest level of usefulness or satisfaction.

The fourth section also contained two items. However, these two items asked open-ended questions. In the first item, participants were asked to provide feedback on anything that they find particularly interesting or likable in the session. The second item asked the participants to write down any complaints or any desireable changes that they want to see in the web page.

Data analysis. The outcome of the package was analyzed by Quantitative data analysis procedure using computer software, called Statistical Package for Social Science

(SPSS). The data were analyzed using – descriptive statistics, ANOVA and dependent t-test. The verbal opinions of the participants were also summarized.

Ethical Consideration

Proper ethical codes of conducts were followed in the both phases of the study. At the beginning of the research, a formal ethical clearance was taken from the Ethical Review Committee of the Department of Clinical Psychology, University of Dhaka. The committee reviewed all the materials and instruments used in the research along with the method and procedure for the collection of data. With the formal approval from the committee, researcher started the research process.

Qualitative Phase. In this phase, the archival and secondary data were only accessed after ensuring that the primary sources followed the proper method of informed consent. In the symptom review phase, the data were taken from therapists' documents. Before accessing and collecting the data, therapists were asked to ensure that they had the permission to share the information for research purpose. Similarly, archival data were accessed only after the permissions from respective organizations were taken. The organizations and the therapists were briefed properly about the purpose and procedure of the research.

Quantitative Phase. The permission from the organization was taken before getting in contact with the participants. The research process was explained individually to every participant. The explanation included – research purpose, procedure, about CCBT, the instruments used, their role in the process, who will get access to their information and confidentiality. They were assured that their responses and all information will be kept completely confidential and will be used only for the research purpose.

They were briefed about www.otikrom.com, with a detail explanation that the web page was still on trial and was not yet evidence-based. The development processes of www.otikrom.com were also briefly discussed to ensure the clarity. A brief orientation of

cognitive-behavior therapy and its effectiveness was also discussed briefly with them. It was emphasized to the participants that they will not get any benefits from the research other than getting online based treatment.

Informed written and verbal consent were taken from them. Participants were informed that they have the right to accept or refuse the treatment package. Their rejection won't lead to any consequences in accessing support from the respective organization. They were also informed that they have the rights to withdraw from the study at any point. In the event, they withdraw from the study, they were assured that they will get re-assigned in the waiting list immediately.

Each participant was given a phone number in case there is an emergency, or they feel that the treatment process is causing them any harm. The web page itself had an assessment scale. The scale instructs the participants to seek professional and emergency help if their score indicated severe or profound level of problems. They were specifically briefed that the web page can't provide help in the events of suicidal ideation or self-harm tendencies. They were instructed to seek help immediately if they feel the need.

There was a detail instruction in-built in the web page briefing the participants' rights, roles, and responsibilities. They were briefed about the security issues and safer users' policy. The web page security protocols instructed the participants to not to share their logging information to anyone and not to access the web page from multiple devices. They were also advised to scan any materials before they download them. Each participant required to "agree with the instructions" before they can access the package.

Chapter – 3

Results

Results

The main purpose of this research was to develop a package to provide Computer assisted Cognitive Behavior Therapy for Bangladeshi population. The second purpose was to see the outcome of CCBT in treating depression. This section of the research represented the results of these two phases of the study. The first phase of the research was qualitative in nature. It had three sub-divisions – symptoms review, reviewing existing CBT practices and development of the content. The second phase of the research was quantitative in nature. In the following section, the result of the research is presented sequentially.

Qualitative Phase

Portrayal of depressive symptoms. A total of 35 secondary data were analyzed in the symptoms review phase. The thematic and frequency analysis were carried out to get a comprehensive portrayal of symptoms representation. As mentioned earlier, the analysis followed priori coding style. The major categories were distributed within a cognitive behavior therapy framework including - cognition, emotion, behavior, physiological symptoms and interpersonal difficulties.

Among the five categories of symptoms, the participants reported more emotional symptoms than any other. The second most cited complaints were physiological in nature. The number of items coded and coding references is given in following section.

Table 2

Number of items coded in five categories of symptoms of depression

Categories	Number of coding references	Number of items coded
Cognitive symptoms	23	19
Emotional symptoms	56	30
Behavioral symptoms	20	15
Physiological symptoms	36	24
Interpersonal symptoms	16	13

The result showed that people experiencing depression complain more on how they feel. The second highest manifestation of depressive symptoms was physiological manifestation of discomfort. Within each category, there were themes and sub-themes.

The categories, themes and subthemes created a portrayal of depressive symptoms that is represented in the following figure.

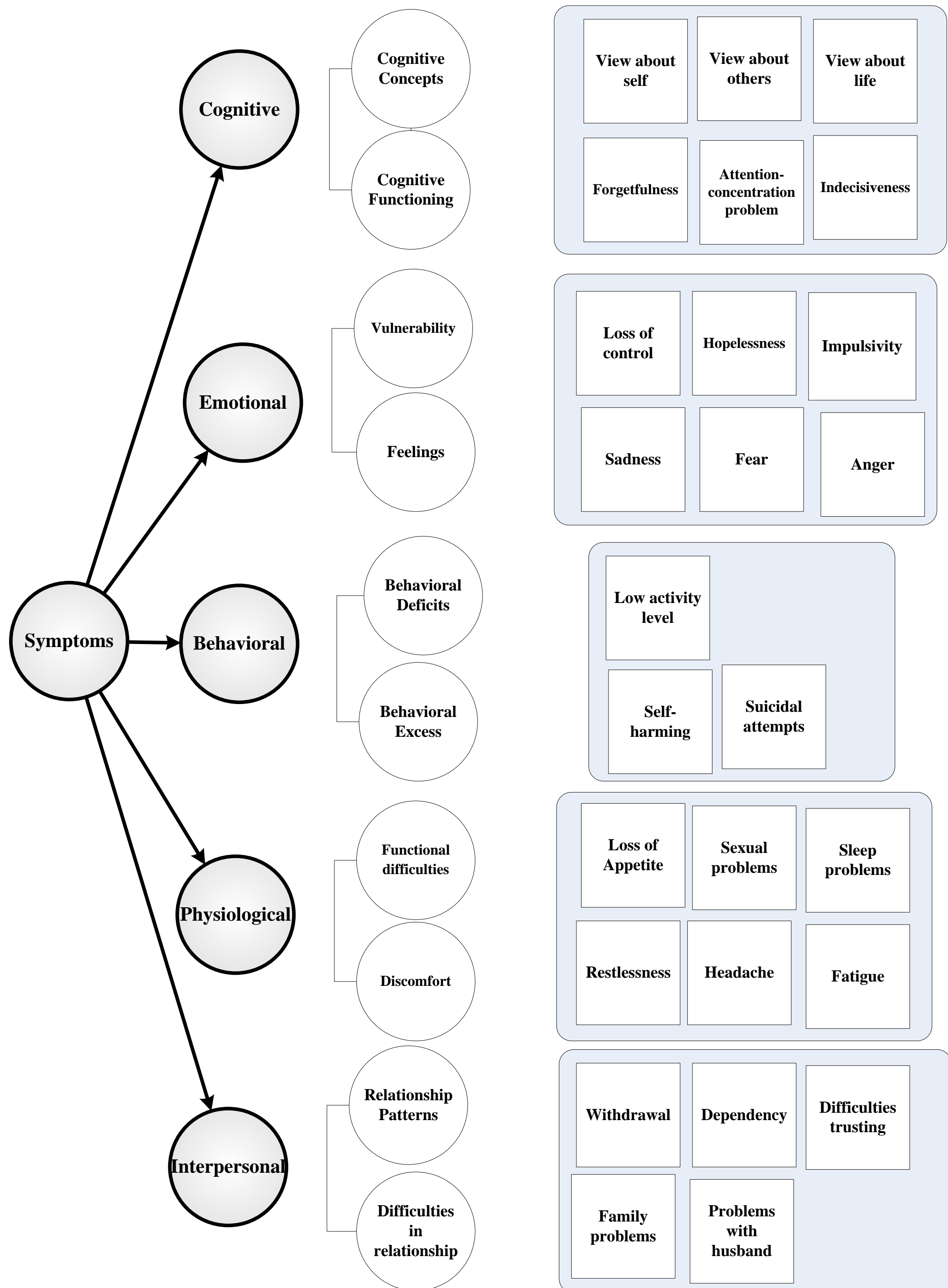

Figure 6. Categories, themes and sub-themes of depressive symptoms

Cognitive symptoms. Coding reflected two major themes. These were – cognitve functioning and cognitive concepts.

Cognitive functioning. Cognitive funcitioning means the use of general cognitive abilities or activities that required the active cognitive engagement such as – reading, writing, concentratiting, attending on any activities. There were significant deterioration of cognitive functioning as reported by participants:

> "I can't concentrate. I can't read. I can't concentrate on anything because of fear." (Internals//BSMMU Case 5). "I forgot what I study! I have memory problems." (Internals//BSMMU Case 7)

Cognitive concepts. The cognitive concepts were partcipants' views and perceptions of everything. There were general distortions on participants' view about themselves, about others and about world or future.

> "I am a fool. I am weak. I can't do anything!" (Internals//NIMH Case 5). "Nobody likes me, people try to avoid me all the time!" (Internals//BSMMU case 3). "I will never be able to fulfill my dreams!" (Internals//NPU Case 6)

Emotional symptoms. The emotional symptoms were the mostly coded complaints reported by the participants, which were as follows -

Sadness. Participants' complaint construed significant amounts of feeling words such as - sadness, feeling low and down. Their feelings of sadness were expressed through crying:

> "I am sad. I cry all the time, even in my sleep." (Internals//DMCH Case 5). "Sometimes I even cry loudly." (Internals//DMCH Case 2)

Their view of depression was synonymous with their feeling low, lonely and empty. The sadness was a symbol of depression for them and hence their problems:

> "I feel empty inside, like a deep hollow inside. That's what my problem is." (Internals//NPU Case 7)

Hopelessness. Their sadness was usually made worse by the feeling that nothing will ever be right. They felt that everything is wrong and there's no chance that the things will get better:

"I feel aweful. I feel hopeless. Nothing positive will ever going to happen to me" (Internals//NIMH Case 5)

Emotional vulnerabilities. The emotional vulnerabilities were apparent in participants' reflection of their conditions as being out of control. They felt that their feeling were something that they can't regulate. The feeling became something that gone beyond their conscious control and they can do absolutely nothing to change their feeling. As a result they reported increase amount of vulnerabilities:

"I do not know what happening to me! I just can't hold on to my feelings. I feel sad and nothing I do change it. I try and try!" (Internals//NPU Case 1)

Behavioral symptoms. The coding reflected two themes of behavioral symptoms manifestation.

Behavioral deficits. The behavior was lower than the usual level of functioning as perceived and reported by the participants in following language:

"I can't complete daily life activity and educational activities." (Internals//NIMH Case 5). "I am lazy and inactive all the time." (Internals//NIMH Case 4). "I don't feel any interest in doing anything." (Internals//NPU Case 4)

Behavioral excess. The behavior that exceeds normal or usual level of functioning as perceived and reported by participants:

"I sometimes repeatedly do things over and over again." (Internals//NIMH Case 5). "I tried to take my life." (Internals//NPU Case 1)

Physiological symptoms. The complaints that were related to their physiological regulation and functioning were coded under this category. The coding reflected two themes of physiological symptoms' manifestation.

Functional difficulties. The functional difficulties were the participant's complaints on level of physiological functioning, such as – sleep, appetite and sexual activities, experienced as a result of depression. Participants had second most complaints on their decrease level of physiological activities:

> "I have a very unsatisfying sleep. I can't sleep properly because of nightmare; dead people come into my dreams." (Internals//BSMMU Case 2). "I feel tired and weak." (Internals//DMCH Case 5)

Physiological discomfort. Few participants complaint on physiological discomfort that they experienced as a result of depression:

> "I can't seem to rest or relax! It's been happening for one month now." (Internals//DMCH Case 7)

Interpersonal symptoms. The coding reflected two themes of interpersonal symptoms' manifestation.

Relationship pattern. The participants reported general trends toward social withdrawal as well as getting excessively dependent on someone or not at all trusting anyone:

> "I have lost all my interest in doing anything social." (Internals//BSMMU Case 5). "I feel that I can't trust people." (Internals//DMCH Case 11)

Difficulties in relationship. There were few complaints on maintaining relationship with others. They perceived that their relationship with significant others are deteriorating severely.

Problem rating form. Based on the numbers of item coded and frequently coded symptoms a problem rating form was developed. The form is added in the Appendix B.

Structure of CBT practices.

Case Log. A total of 20 case logs were analyzed using thematic analysis. The appeared themes were conceptualized in a structural timeline of session (Figure – 8). The timeline represented CBT practices on a timeframe of "session to session" conducts. There were two parts in this model. One showed a general structure of the session and the other was on specific session's tasks.

Theme 1: General structure of session. General structure of session portrayed the interactions or areas of communication that took place between therapist and client from beginning to the end of each session. This means – how therapist began the therapy, how it progressed and how it drew to a meaningful end. The important themes appeared in this category included – setting agenda, reviewing previous session, reviewing mood, reviewing problems, scale or objective measurement, reviewing homework, specific session tasks, session summary, feedback of the client, conclusion and next session assignment. More or less every log followed this general structure.

Theme 2: Specific session's tasks. Specific session's tasks represented different and diverse session tasks inside different session that a therapist conducted in the course of the entire treatment process. The tasks were different in the sense that different sessions had different agenda (stemming from both client's expectation and therapist's intuitions). Therapist, with his or her expertise, set specific session's activities with an adherence to actual CBT structure as well as shaping session according to client's need. So, the tasks of the first session were not similar with the tasks of second session. However, in the present research, analysis followed a pattern. The pattern was depicted from the mostly coded theme within each session.

The timeline created from the general and specific session structure is shown in the following figure.

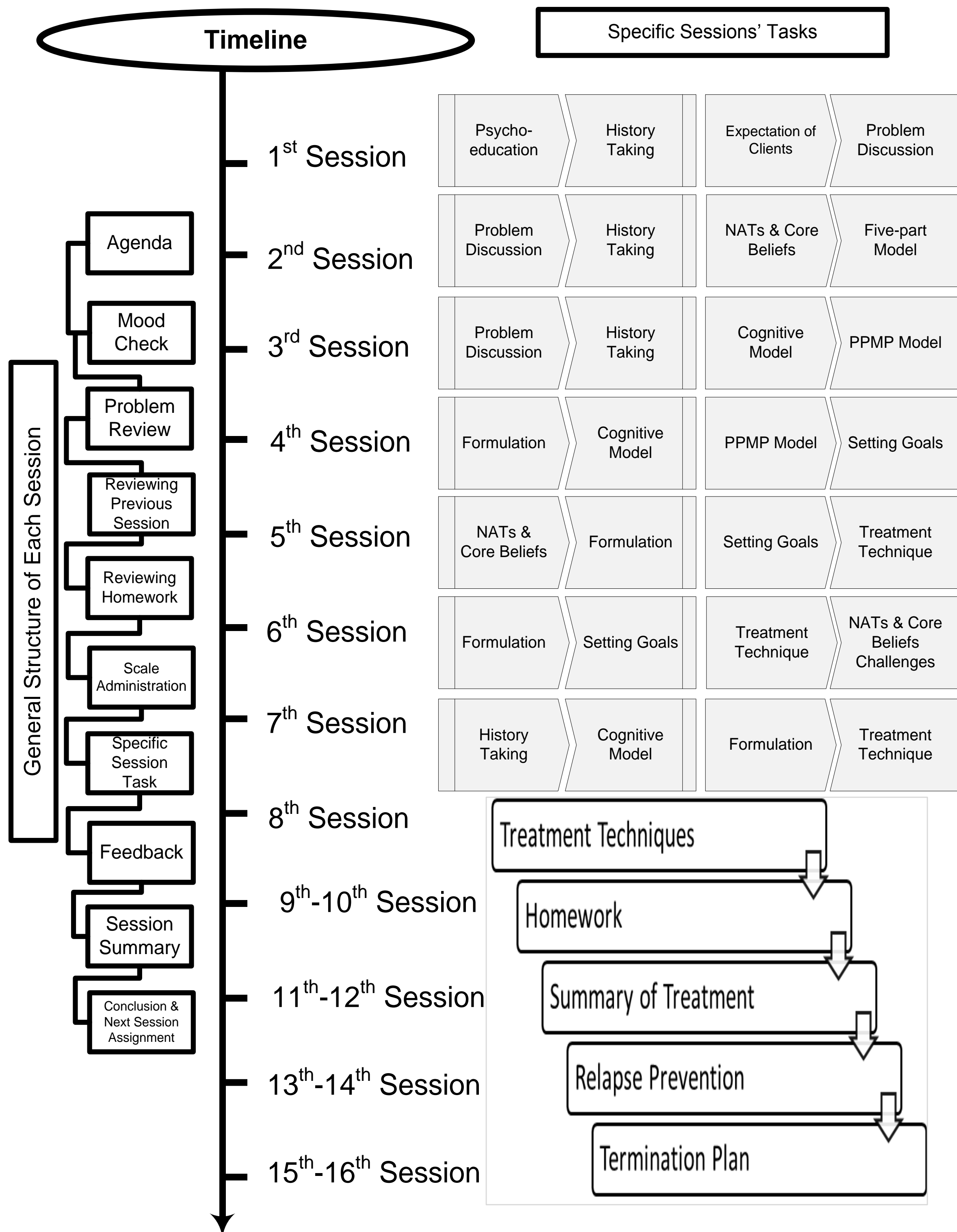

Figure 7. Timeline constructed from most frequently coded sub-themes

Case Reports. A case report contained a therapist's detail description of a client's history of problem as well as the therapeutic process to manage the problems. A total of 15 case reports were analyzed by following thematic analysis. There were five categories coded – information, history, assessment, formulation, and treatment. Within each category, there were themes and sub-themes.

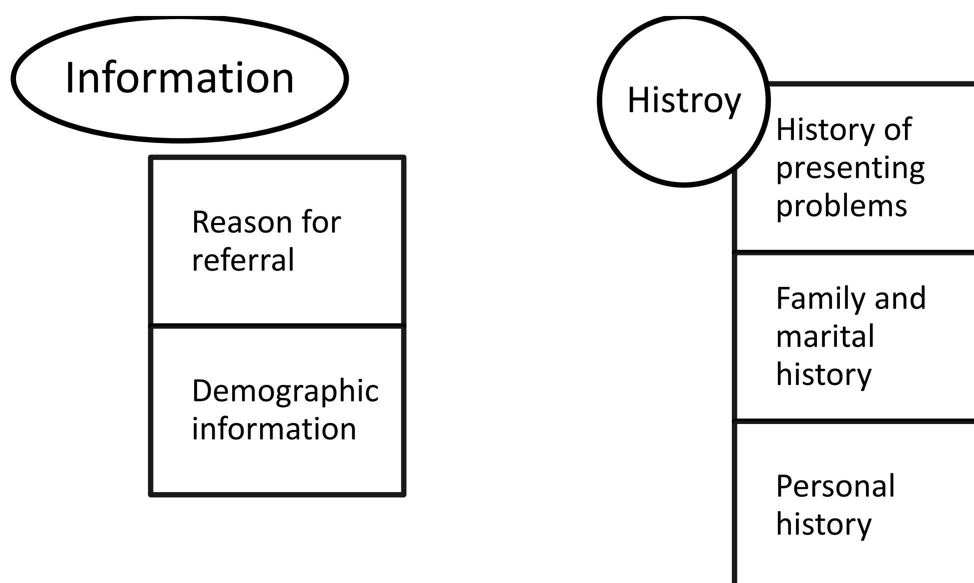

Figure 8. Categories and commonly coded themes of information and history of case report

All the reports began with **information** about why the client sought help and how the client came to be in contact with the therapist. This section was called "Reason for referral". The reports, then, progressed with short demographic information about the client. Client's relevant information was described using a pseudo identity here. The presenting problems of the client, with or without the onset, were described briefly after that.

The next part involved **relevant background history** of client such as – history of presenting problem, family and marital history, past medical or psychiatric history, educational history and personal history. The history part was an important part of the report because they gave a clear chronological insight into client's problem history and

development. The therapists used their clinical skills and expertise to present the history in a form that communicates clinically significant meanings to others.

The third category was **assessment** where therapists described how they collected and gathered information and history from the client. The themes and commonly coded sub-themes of this category were given below.

Table 3

Category, themes and sub-themes of assessment tools

Category	Themes	Commonly coded Sub-themes
Assessment	**Subjective Assessment**	Ratings of subjective well-being
		Problem ratings
		In-depth interview
		Observation
		Creative techniques tools
		Homework tools
	Objective Assessment	Depression Scale
		Cognitive Distortions scale
		Hopelessness Scale
		Anxiety Scale

Therapist used both subjective tools and objective assessment tools. The assessment tools were all developed in the Bangladeshi context. The subjective assessments were customized according to individual needs of the clients.

The fourth category was the core part of the CBT – **formulation**. Since formulation based CBT is used in Bangladesh, a large part of case report consisted of Beck’s cognitive model of depression and PPMP model (predisposing-precipitating-maintaining-protective factors). The themes and sub-themes of this category were described in the table below.

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Table 4

Category, themes and sub-themes of formulation model used by therapists

Category	**Themes**	**Commonly coded Sub-themes**
Formulation	**Cognitive Model**	Core Beliefs
		Dysfunctional assumptions
		Negative automatic thoughts
	PPMP Model	Predisposing factors
		Precipitating factors
		Maintaining factors
		Protective factors

The cognitive model was similar to the Beck's cognitive model of depression. The negative core beliefs and dysfunctional assumptions formed in the early life lead to the development of problems with or without critical incidence. The PPMP model, however, gave many patterns and sub-themes.

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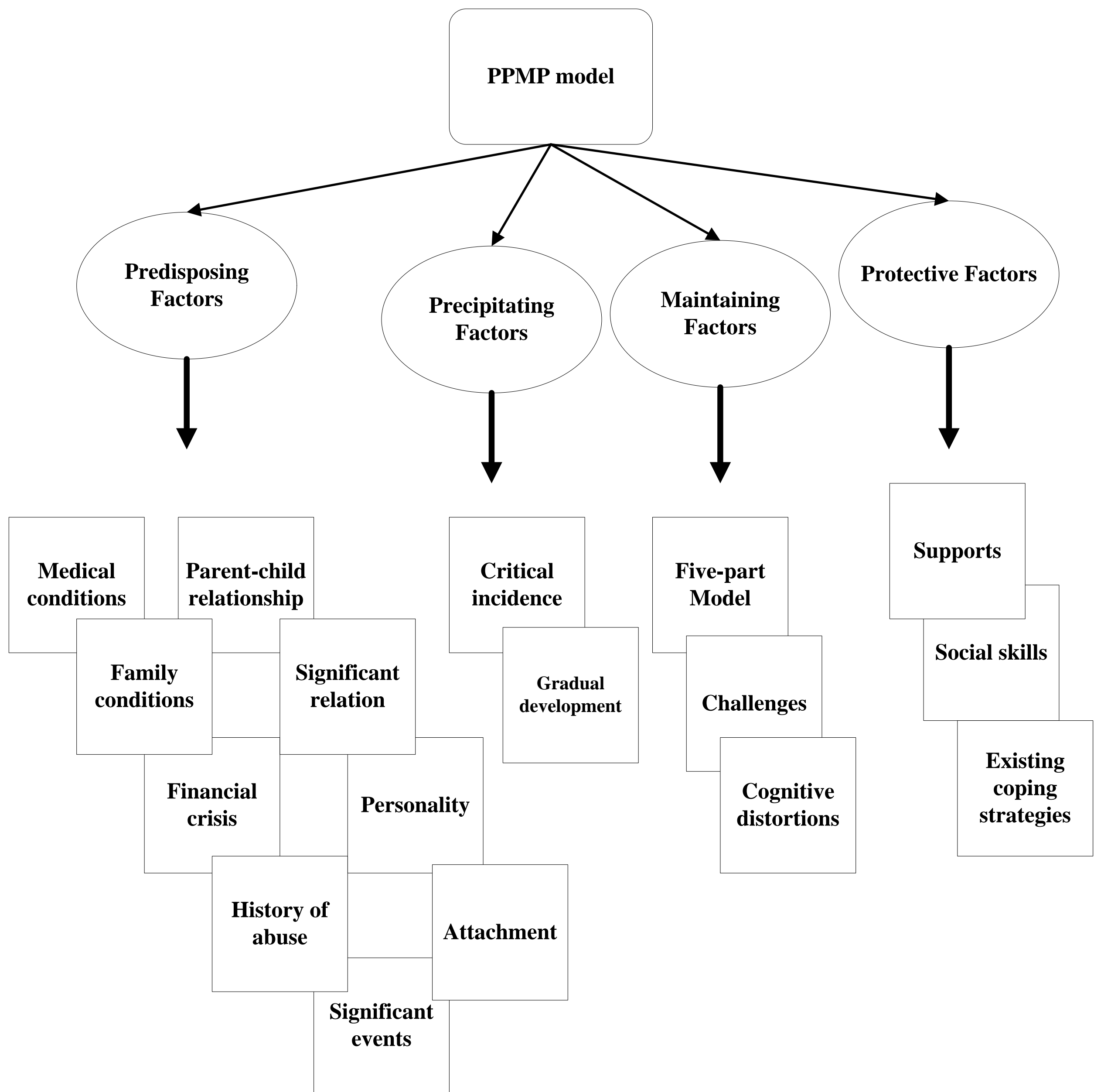

Figure 9. The commonly reported themes and sub-themes of PPMP model

Predisposing factors were further coded into other themes. The themes and sub-themes appeared here were used in the PPMP model of the CCBT web page. The key themes are shown in the following figure.

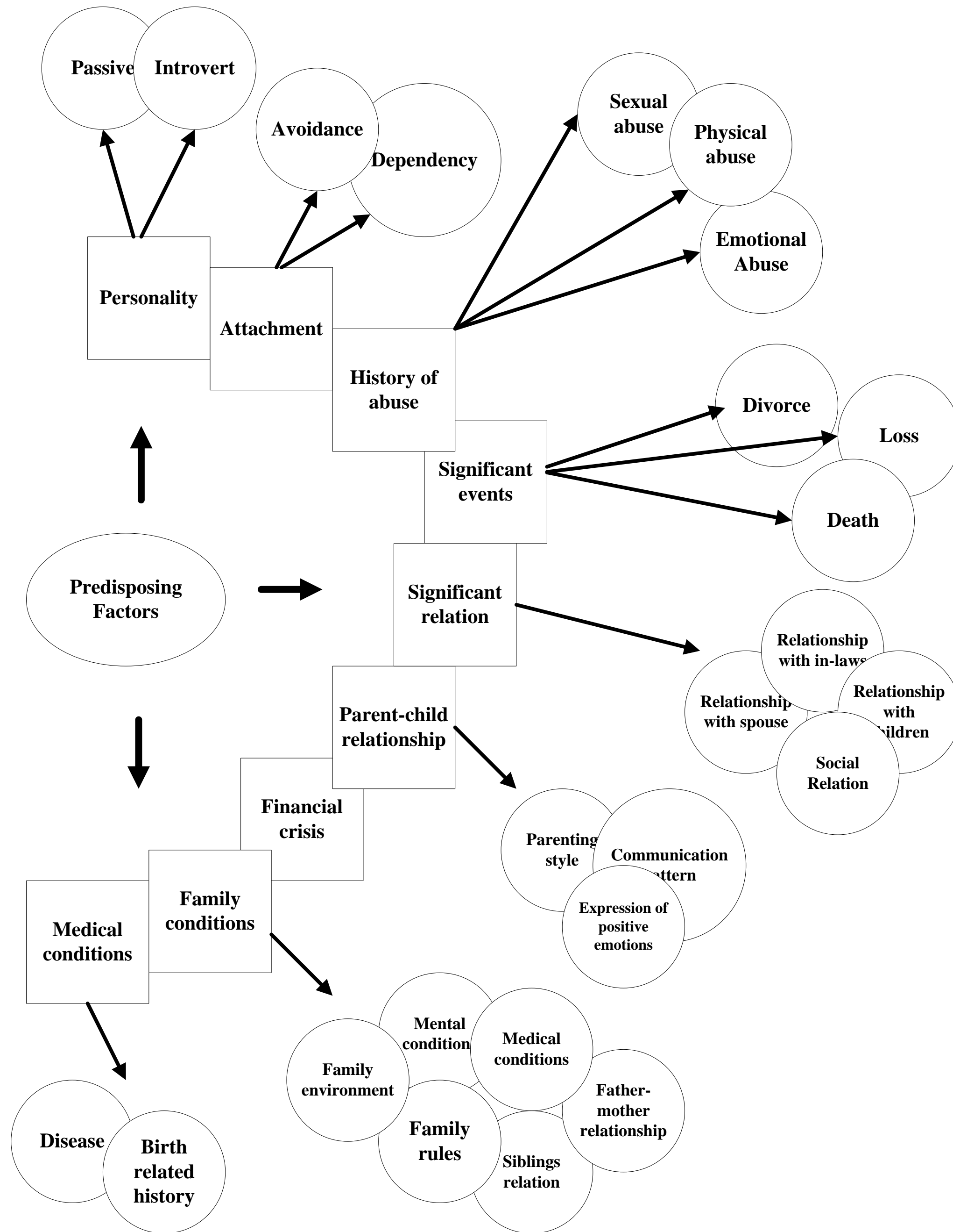

Figure 10. The commonly reported sub-themes of predisposing factors

The fifth category was – **treatment**. Two significant themes appeared in this category includes - treatment goals and treatment techniques. The themes and sub-themes are shown in the table below.

Table 5

Category, themes and sub-themes of treatment process

Category	Themes	Commonly coded Sub-themes
Treatment	**Treatment goals**	Short-term goals
		Long-term goals
	Treatment techniques	Cognitive techniques
		Behavioral techniques
		Skill development
		Family sessions
		Relapse Prevention

The language used to express the goals provided insights into the process of incorporating targets and goals in the web page. The techniques and the described delivery methods were helpful in determining as well as validating the techniques used in the web page.

The categories, themes and sub-themes found from analyzing both case reports and case logs were helpful in forming an impression of existing CBT practices in Bangladesh. The draft web page was formed and cross-checked with these findings.

CCBT package: www.otikrom.com. The web page was uploaded with the name www.otikrom.com. The contents were selected and distributed to 10 sessions. Each session was developed with specific agenda, psycho-education materials, exercises, homework and review of homework.

Table 6

The content of the web page

Name	Agenda	Homework
Session – 1	Identification of Problems	Feeling chart
Session – 2	Five-Part Model	Thought diary
Session – 3	Formulation (PPMP)	Thought listing
Session – 4	Formulation (Core Belief and Dysfunctional Assumptions)	Thought identification
Session – 5	Thought Challenges	Thought challenge Activity listing
Session – 6	Behavioral Activation	Thought challenge Activity reschedule Positive event recollection
Session – 7	Thought Challenges (Core Belief and Dysfunctional Assumptions)	Thought challenge Activity reschedule “ME”
Session – 8	Working with additional Problems	Same
Session – 9	Real Life Crisis	Same
Session – 10	Final Session	Summary

The table summarized the session to session agenda and homework distribution. Each session can only be accessed after one week interval – the time gap was designated to ensure proper homework practices among the participant.

Quantitative Phase

Outcome of CCBT package. In this phase of the study, the impacts of CCBT package on depression were assessed and analyzed. The obtained data from the participants were analyzed by descriptive statistics, test of significance – dependent t-test and ANOVA with the help of SPSS.

Table 7

The frequencies and percentages of session completion rates

Groups	Frequencies	Percentages	Mean	Std Deviation
Session 1-3	6	40%	5.53	3.623
Session 4-6	2	13.3%		
Session 7-9	7	46.7%		
Total	15	100%		

A total of seven participants completed the entire program. There were two participants who completed half of the program. Among 15 participants six dropped out in the middle of one to three sessions. The mean and standard deviation of session completions rate was (M = 5.53; SD = 3.623).

Table 8

The frequencies and percentages of level of depression as compared to session completion rate

Groups	N	Session 1-3	Session 4-6	Session 7-9
Mild Depression	6	50%	16.7%	33.3%
Moderate Depression	6	16.7%	16.7%	66.7%
Severe Depression	3	66.7%	0	33.3%

Four out of six participants with moderate level of depression completed the full package (66.7%). However, only two out of six participants with mild level of depression (33.3%) and one out of three participants with severe level of depression completed the full package (33.3%).

Descriptive statistics was conducted to determine the mean and standard deviation scores of depression scale.

Table 9

The mean and standard deviation scores of depression scale

Groups	N	Baseline		5th session		Last session	
		Mean	SD	Mean	SD	Mean	SD
Depression Scale	15	118.07	11.823	102.67	19.346	90.83	17.414
Mild depression	6	107	4.472	87	28.792	88	17.584
Moderate depression	6	120.17	2.317	112.20	6.017	92	20.062
Severe depression	3	130	7.211	102	-	102	-

A gradual decline in the mean of depression scale is visible from the table from first session to last session.

Table 10

Friedman's test of significance of depression scale scores across three phases

	N	Chi-square	df	Level of Significance	Kendall's W
Depression Scale	9	15.80	2	.000	.878

The Friedman test indicated that there was a significant decrease in the level of depression before and after the treatment, χ^2 (2, N = 9) = 15.80, p = .000. The Kendall's W coefficient of concordance of .878 indicated difference among the three phases to be stronger.

Wilcoxon-signed rank test was conducted as a post hoc to determine whether there were any differences in the depression level among three phases of treatment separately.

Table 11

Post hoc test – Wilcoxon-signed rank test on depression scale

	Depression Scale (5th session)		Depression Scale (Last session)	
	Z	Level of significance	Z	Level of significance
Depression Scale (Baseline score)	-2.524	.012	-3.062	.002

The result indicated that there was a significant difference between baseline and fifth session (z = -2.524, p = .012). Depression level in the baseline session and in last session also showed significant difference (z = -3.062, p = .002).

Table 12

The mean and standard deviation scores of problem rating form

Groups	Baseline		5th session		Last session	
	Mean	*SD*	Mean	*SD*	Mean	*SD*
Sadness	6.83	1.586	6.11	1.616	2.83	1.337
Lack of interest in activities	7	1.706	6.11	1.616	2.42	1.730
Forgetfulness	6.45	1.508	6.11	1.167	3.20	1.619
Attention and concentration level	6.55	1.635	6.11	1.167	3	1.7
Loss of confidence	6.42	1.379	5.78	1.394	3.33	1.557

Note: Items were rated in a 1-10 rating scales (where 10 indicated severe level of problems)

The result showed a gradual decrease of participants' subjective rating of problems from baseline to fifth session and to the last session. The mean rating of sadness, for example, decreased from, $M = 6.83$; $SD = 1.586$ to $M = 2.83$; $SD = 1.337$ at the end of the treatment.

Table 13

Friedman's test of significance of items in problem rating form across three phases

	N	Chi-square	df	Level of Significance	Kendall's W
Sadness	9	16.545	2	.000	.919
Loss of interest in activities	9	17.0	2	.000	.944
Forgetfulness	8	14.22	2	.001	.88
Attention and Concentration	8	14.214	2	.001	.88
Loss of Confidence	9	16.545	2	.000	.919

The test indicated that there was a significant decrease in the score of sadness, loss of interest in activities, forgetfulness, attention and concentration and loss of confidence before and after the treatment and Kendall' W indicated these differences as stronger.

Table 14

The mean and standard deviation scores of variation in response to positive and negative feeling words across the sessions

Groups	Baseline		5th session		Last session	
	Mean	*SD*	Mean	*SD*	Mean	*SD*
Total response to feeling words	13.67	5.678	7.33	4.849	9.83	4.019
Response to positive feeling words	4.25	2.379	3.33	2.309	4.08	1.564
Response to negative feeling words	9.42	3.476	10.67	7.050	5.75	3.019

Although there was an overall decrease to participants' response to words in "Feeling rating form", response to negative feeling words increased in the middle phase of the therapy which again followed a gradual decrease toward the end of the therapy package.

Table 15

Friedman's test of significance for variation in response to feeling words by participants' across three phases

	N	Chi-square	df	Level of Significance	Kendall's W
Feeling words	12	11.167	2	.004	.465
Positive feeling words	12	.424	2	.809	.018
Negative feeling words	12	8.667	2	.013	.361

The results indicated that there was a significant variation among participant in responding to feeling words across three phases [χ^2 (2, N = 12) = 11.167, p = .004] as well as in responding to negative feeling words across three phases [χ^2 (2, N = 12) = 8.667, p = .013]. However, there was no significant difference among participant in responding to positive feeling words across three phases [χ^2 (2, N = 12) = .424, p = .809].

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Table 16

Post hoc test – Wilcoxon-signed rank test of feeling words across three phases

	5th session		Last session	
	Z	Level of significance	Z	Level of significance
Response to all feeling words (1st session)	-2.826	.005	-2.406	.016
Positive feeling words (1st session)	-.778	.437	-.216	.829
Negative feeling words (1st session)	-1.061	.289	-2.714	.007

The result indicated there was a significant difference among the conditions, (z = -2.826, p = .005 and z = -2.406, p = .016). The result also indicated there was no significant difference in response to negative feeling words from baseline to fifth session (z = -1.061, p = .289). However, significant difference was found between baseline and last session (z = -2.714, p = .007).

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Participants' ratings of webpage. In this phase of the study, participants' evaluations and views on CCBT package were assessed and analyzed. The obtained data from the participants were analyzed by descriptive statistics, test of significance – dependent t-test and ANOVA with the help of SPSS. The results are shown in the following tables.

Table 17

The mean and standard deviation of participants' perceived benefits from session to session

	Mean	Std Deviation
Session – 1	7.53	.516
Session – 2	7.67	.492
Session – 3	7.60	.516
Session – 4	7.89	.333
Session – 5	7.78	.441
Session – 6	8.50	.535
Session – 7	7.57	2.070
Session – 8	8.80	.447
Session - 9	9.00	.000

Note: Items were rated in a 1-10 rating scales (where 10 indicated highest level of benefits)

There was a gradual increase in the mean score of participants' perceived benefits from each session as the session progresses from first to ninth session with an exception of seventh session.

Table 18

Friedman's test of significance of participants' perceived benefits from session to session

	Mean Rank	Chi-square	df	Level of Significance	Kendall's W
Session 1	3.62				
Session 2	3.62				
Session 3	2.88				
Session 4	3.62	22.656	8	.004	.708
Session 5	3.62				
Session 6	6.88				
Session 7	5.00				
Session 8	7.88				
Session 9	7.88				

The results indicated that there was a significant increase in participants' perceived benefits from each session [χ^2 (8, N = 12) = 22.656, p = .004]. The Kendall's W coefficient of concordance of .708 indicated the difference to have a stronger relation.

Table 19

The mean and standard deviation of participants' perceived satisfaction from session to session

	Mean	Std Deviation
Session – 1	7.80	.414
Session – 2	7.92	.289
Session – 3	7.80	.422
Session – 4	8.22	.441
Session – 5	8.44	.527
Session – 6	8.50	.535
Session – 7	8.57	.535
Session – 8	8.60	.548
Session - 9	9.00	.000

Note: Items were rated in a 1-10 rating scales (where 10 indicated highest level of satisfaction)

There was a gradual increase in the mean score of participants' perceived satisfaction in each session as the session progressed from first to ninth session (M = 7.80; SD = .414) and (M = 9.00; SD = .000) respectively.

Table 20

Friedman's test of significance of participants' perceived satisfaction from session to session

	Mean Rank	Chi-square	df	Level of Significance	Kendall's W
Session 1	2.75	22.154	8	.005	.692
Session 2	2.75				
Session 3	2.75				
Session 4	3.88				
Session 5	6.12				
Session 6	6.12				
Session 7	7.25				
Session 8	6.12				
Session 9	7.25				

The results indicated that there was a significant increase in participants perceived satisfaction from each session [χ^2 (8, N = 12) = 22.154, p = .005]. The Kendall's W coefficient of concordance of .692 indicated a strong difference among the sessions.

Verbal feedback of the Participants. There were few open box in the web page where participants expressed their views, questions, opinions and recommendations about the web page. Their feedback are shown according to the frequencies.

Recommendations. Participants reported the things they like in the web page in the feedback evaluation form. Overall they expressed a general feelings that "everything is okay" or "okay". However, there were few specifics positive evaluations given by the participants. The figure portrays a picture of their general positive feedback.

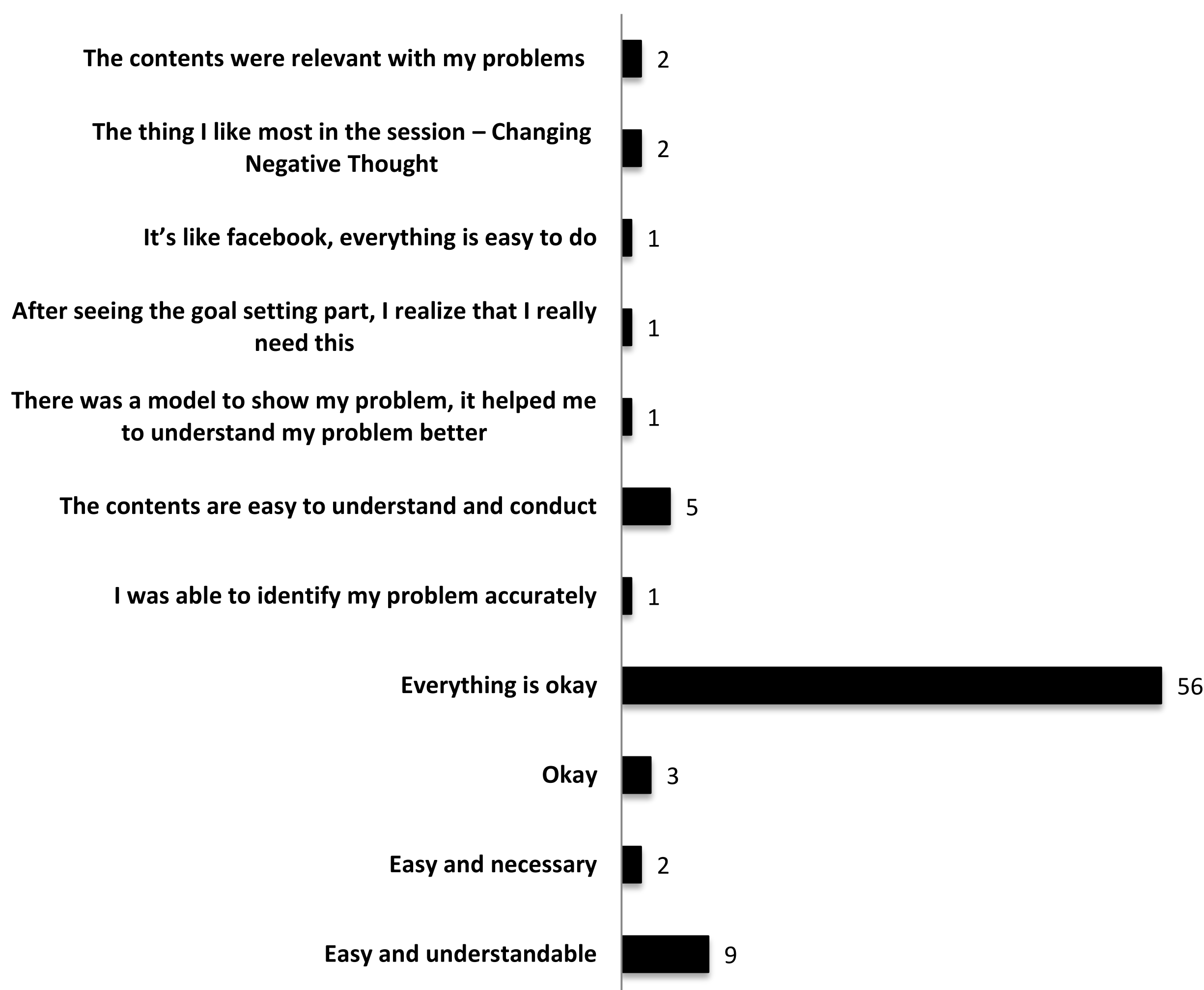

Figure 11. Recommendations given by participants

Table 21

Summary on participants' frequently asked questions (FAQ)

Frequently Asked Questions (FAQ)
Will it be always free? (এটা কি সবসময় ফ্রি থাকবে?)
I didn't access the account for few days, can I still continue it? (আমি বেশ কিছুদিন কাজ করতে পারি নি। এখন আবার শুরু করলে কি সমস্যা হবে?)
Will it be always available? (কিছুদিন পর বন্ধ হয়ে যাবে না তো?)
Can I invite some friends to use it? They are interested about this. (আমি কি আমার কিছু বন্ধুদেরকে এর কথা বলবো? ওরা এ ব্যপারে খুবই আগ্রহী।)
I am having some internet troubles, can I restart it few days later? (এ মুহূর্তে আমার নেট এক্সেস নাই। কিছুদিন পর আবার শুরু করি?)

In summary, participants' inquiries were mainly on the cost, availabilities and accesibilities of the package both on short and long term.

Chapter – 4

Discussion

Discussion

The rapid growth in IT-based interventions to deal with mental health problems is making the access to mental health services more easy and convenient. This research was conducted to develop computer assisted cognitive behavior therapy. Another purpose was to observe the impact of CCBT as well as the perception of participants toward this kind of service. An explorative-sequential mixed method design with adherence to pragmatism paradigm was adopted to achieve these objectives. The research had two phases.

The first phase was a **qualitative phase** with three sub-phases. The main purpose of this phase was to develop an intervention package for people with depression. The two specific objectives were to review the symptoms of depression and to summarize the current CBT practices. Secondary and archival reviews were the data collection methods in the first phase. The second phase was a **quantitative phase**. In this phase, one group pretest-posttest design was used to observe the impact of intervention package on people with depression.

Qualitative Phase

Portrayal of depressive symptoms. In the first sub-phase, a total of 35 participants' symptoms of depression were collected from the secondary data given by CBT practitioners. The data were analyzed using qualitative thematic content analysis. The most frequently reported and hence coded complaints were of emotional in nature (Table – 2). The sadness or low mood, guilt feelings and hopelessness were main emotional complaints reported by participants (Figure – 6). The loss of interest in activities was also one of the most common complaints found in this study. Both depressed mood or sadness and loss of interest were quoted as the primary symptoms of depression in WHO (2012) and NICE guidelines for depression (2009). Reduced activity level was the second major complaint reported by the participants in the present research. This finding was similar to numerous studies reporting

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relationship between reduced activity and depression (Farmer et al., 1988; Goodwin, 2003; Ross & Hayes, 1988; Stephens, 1988).

In the present study the participants also reported memory and concentration problems as well as a number of physiological distress and disturbance in physiological functioning, such as – sleep, sexual activities and appetite. Depression, as found in the research, is not limited to the manifestation of emotional disturbance, sufficient amount of impairment in cognitive, immune system and peripheral nervous systems accompany depression (Mark, 2011). The participants, in the present research, also reported complaints such as – forgetfulness, lack of attention and concentration. As both cognitive dysfunctions (memory, attention, concentration) and cognitive distortions are reported as symptoms of depression in many studies (Huberty, 2009; Gonda et al., 2015; Lawrence, Roy, Harikrishnan, & Dabbous, 2013), the findings of present study compliment the previous studies.

The result also showed both relationship difficulties and maladaptive relationship pattern in the participants with depression. It was found in several studies that problem in interpersonal relationship – either excessive reassurance seeking, negative feedback seeking or inducing negative reaction in others – are both predictor and maintaining factors in depression (Benazon, 2000; Coyen, 1976; Joiner & Metalsky, 1995; Pritchard, 2016). The present study, in consistent with previous studies, showed that the participants either had excessive level of dependency or difficulties in relationship which lead to the avoidance and social withdrawal which, in turns, were both the precipitating and maintaining factor for depression.

The most coded symptoms found were selected for the “Problem rating form”of the web page. The participants had to fill-up the rating scale at the beginning of each session. The items of the problem rating scale contains – low mood and sadness, lack of interest in

activities, low self-esteem and indecisiveness, attention and concentration problems, problems in relationships and problems in daily functioning. These items were in accordance with the symptoms of depression as selected by Diagnostic and Statistical Manual of Mental Disorder – V (DSM – V) (APA, 2013). The items also had similarities with the existing Depression Scale (DS; Uddin & Rahman, 2005) in Bangladesh.

Structure of CBT practices. In the second sub-phase, a total of 15 case reports and 20 case logs of the expert therapists were selected to have a comprehensive summary of the existing CBT practices. The data were analyzed using qualitative thematic content analysis. The analysis of case log showed two broader themes – a general structure of each session and specific session's tasks (Figure – 7). The first theme showed the pattern and content embedded in any particular session. As appeared in the code, each session started with greetings and reviewing of problem. The session then progressed with - setting agenda, reviewing previous session, scale or objective measurement, reviewing homework, specific session' tasks, session summary, feedback of the client, conclusion and next session assignment (Figure – 7). The session structure was similar to the Beck's proposed session structure for cognitive behavior therapy (Beck, 1995).

The second theme helped to develop a timeline (Figure – 7). The timeline generated an impression of how specific task or agenda from one session to another session were distributed throughout the therapy module. Result showed that during the primary phase of the therapy, therapists' agenda were on eliciting clients' expectation from the therapy, problem discussion, history taking and providing psycho-education. The subsequent session then progressed with introducing Beck's cognitive model and formulation. The treatment goals were generally introduced, according to the frequently coded data, at fourth and fifth session. Sequentially, the treatment techniques were introduced after that. The lengths of treatment phase varied from participant to participant depending on their problems. After the

treatment phase, the summaries of treatment techniques, termination plan and relapse prevention were carried out usually in the last two sessions before terminating. This timeline was helpful in the development of the structure of session in the webpage.

The results of case reports, on the other hand, helped in the development of sessions' content of the webpage. Specifically, the PPMP model, case descriptions, negative automatic thoughts (NATs), dysfunctional assumptions, core beliefs and treatment techniques, found from the themes and codes, provided basis for the content embedded in the web page. The codes found in the study were similar to Beck's Cognitive Behavior Therapy (1967) and Carr's Predisposing-Precipitating-Maintaining-Protective factors (Carr & Mcnultry, 2011). Once the content were selected and organized in a draft version of web page, the service was ready to be evaluated by the experts.

CCBT package: www.otikrom.com. Based on the previous findings, a draft version of static web page was created. The content, however, was finalized only after following a rigorous evaluation by 10 expert judges. This was carried out to ensure the face validity of the content as well as ensuring users' safety and satisfaction. The main themes appeared in the results of the judge evaluation included - adding new sentences, structural changes, changing words and adding materials. New suggestions were fewer, as did the overall feedback. In general, the judges found the content of the web page as acceptable for both face-to-face and web-based therapy. After the judge evaluation, the draft contents were transferred to business logic and subsequently uploaded to the server.

The web page contained a total of 10 sessions. Each session, with its own individual agenda, lead to the ultimate goal of alleviation from depression. The sessions were accessible after one-week intervals designed as such to ensure the practices of treatment techniques and completion of homework. The description of session and its structure and content were provided in the introduction, result and Appendix B.

Quantitative Phase

Outcome of the CCBT package. The second phase of the study was designed to evaluate the impacts of the CCBT package on depression. The analysis was done in two levels. First level focused on the improvement rates of the participants going through the service and the second focus was to find out participants' satisfaction, benefits, opinion and response toward the service. The data were analyzed using descriptive statistics, dependent t-test and ANOVA with the help of SPSS.

Engagement with the package. In the present study, all the initially recruited participants started using the service. So, uptake rate was 100% in the present study. A review of 36 studies revealed that only 38% of the participants start using the services after their recruitment to the program (Waller et al., 2009). There were no available data on the actual session completion rate, drop-out rate or the rate of usage of services after recruitment in the traditional or face-to-face therapy conducted by therapists in Bangladesh. As a result, the worldwide data was compared to draw any conclusion about the outcome of the present program.

The data on session completion and drop-out rates showed that the session completion rates and drop-out rates of the present program was found to be 46.7% and 40% respectively (Table – 7). A survey on 281 respondents participating in an online CBT for depression found 27% session completion rates and 48% drop-out rates (Richards et al., 2016). Session completion rates were higher in the present research.

CBT, in comparison have only 17% drop-out rates and 8.9% non-attendance or Did Not Attend (DNA) rates (Binnie & Boden, 2016). Psychotherapy, on the other hand, was found to have somewhat higher, that is - 35.26% drop-out rates in the meta-analytical review (Sharf, 2007). A meta-analytical review found CBT's pre-treatment dropout rate as 15.9% and during treatment drop-out rate as 26.2% (Fernandez, Salem, Swift, & Ramtahal, 2015).

Interestingly, the same meta-analytical review found e-based CBT as having more drop-out than normal (Fernandez et al., 2015). So, the drop-out rates of the present program was somewhat close to psychotherapy, considering the small sample size of the present research. However, in comparison to traditional CBT, drop-out rates were very high.

CCBT packages were found to have higher drop-out rates than normal traditional therapy and the drop-out rates varied in different studies as well as different CCBT services (Kaltenthaler et al., 2008). The drop-out rates for MoodGYM site and BluePages were found 25% and 15% (Christensen, Griffiths, & Jorm, 2004) and Beating the Blues were 35% (Proudfoot et al., 2004). In another research, the drop-out rates were found to be 38%, where 84 from 219 participants dropped-out after the first session (Cavanagh et al., 2006). The drop-out rates of the present program were found to be almost similar to Beating the Blues, in the sense that the sample size was small in the present research.

Interestingly, the rate of withdrawal decreased to 22% in the second phase of the Beating the Blues program (Proudfoot et al., 2004). In the present research, a total of 15 participants were selected for the service, where seven participants completed the entire program, two went through half of the program and six dropped-out at the beginning of the program (Table - 7). Similar to the research with the Beating the Blues, majority of the drop-out of the present program took place at the beginning of the program, only two participants dropped-out after going through half of the program (Table - 7).

The level of depression plays a significant role in the continuation of session in traditional CBT (Binnie et al., 2016). As found in the present research, session completion rate was higher for participants with moderate depression (66.7%), whereas only 33.3% of mildly and 33.3% of severely depressed participants completed the package (Table - 8). One of the reasons for higher drop-out rate of mildly depressed participants was spontaneous recovery. Mild depression has the highest spontaneous recovery rate (Whiteford et al., 2012).

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In the present study, two participants' level of depression went down from mild to no depression when they were going through the second session. The participants' percieved no need to continue the service and hence, they dropped-out.

Similarly, 16.7% of both mild and moderately depressed participants dropped-out at the middle of the program (Table - 8). As found in research that 23% of the untreated depression (especially mild-to-moderate level of depression) was found to decrease within three months (Whiteford et al., 2012). Another reason for the drop-out in the middle of the treatment package was the design of the program. The design of the current program included - thought challenges and behavior activation in fifth and sixth session respectively. The reconstructing of thoughts and increase in functioning were considered key elements in CBT (Hawley et al., 2016). The participants, thus, had completed important and significant portions of package. There were significant improvements in symptoms of the participants after the completion of fifth and sixth session. Therefore, these participants' percieved no need to continue the service.

However, among the three severely depressed participants, only one participant (33.3%) completed the entire program. The reason for 66.6% drop-out rate for severe depression may be that both the meta-analysis and NICE guideline stated CCBT to be only effective for mild-to-moderate level of depression (Kaltenthaler et al., 2008). The use of medication and intensive therapy were recommended modality for severely depressed patients (APA, 2010). The current CCBT package, in accordance to the fact, provided this message to the users all through the program.

Impact on depression. To observe the treatment's effectiveness, non-parametric tests were carried out to see whether treatment induced any significant changes in the participants' conditions. Both Friedman and Wilcoxon-signed rank test were used. Friedman test is the non-parametric equivalent of one-way ANOVA with related measures. It was used to analyze

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the overall changes before and after the treatment. Result showed that there was a significant decrease in the level of depression before and after the treatment [χ^2 (2, N = 9) = 15.80, p = .000] (Table – 10). To measure the effect size and the strength of the relationship, the Kendall's W coefficient of concordance was carried out. The result indicated a stronger relationship of the difference among the three phases (W =.878) (Table – 10). Reduction of severity level of depression indicated the effectiveness of the package.

In comparison to two NICE recommended CCBT packages for depression – Beating the Blues and MoodGYM, both were found to be effective in reducing symptoms of depression as found in both RCTs (Proudfoot et al., 2003; Gilbody et. al., 2015) and meta-analysis (Cavanagh et al., 2004; Twomey et al., 2016).

Wilcoxon-signed rank test was conducted as a Post hoc to determine the difference between the depression score in the last session with score in the baseline and fifth session separately. The result indicated a significant difference between the baseline and fifth session (z = -2.524, p = .012) as well as between the baseline and last session (z = -3.062, p = .002) (Table – 11). There was, therefore, a significant decline in symptoms of depression throughout three phases of intervention. The difference appeared to be more significant from the baseline to last session than from the baseline to fifth session.

Similarly, participants' subjective rating of problem showed significant reduction of symptoms' severity (Table – 12). The Friedman test, conducted to measure the reduction of symptoms' severity among three phases of treatment, indicated significant differences on the five items of problem rating scales – sadness (χ^2 = 16.545, p = .000), loss of interest in activities (χ^2 = 17.0, p = .000), forgetfulness (χ^2 = 14.22, p = .001), attention and concentration (χ^2 = 14.214, p = .001) and loss of confidence (χ^2 = 16.545, p = .000) (Table – 13).

Meta-review found some CCBT packages to have an impact on reducing depression level and improving condition (Foroushani et al., 2011). RCTs of effectiveness of CCBT package showed improvement following CCBT treatment (Kaltenthaler et al., 2008). Significant decrease in the level of depressive symptoms in the present study, therefore, is indicative of the program's effectiveness. So, similar to other CCBT packages worldwide, this program was able to decrease the level of depression.

The result of the "Feeling rating form" indicated that there was a decrease in the mean score of response to feeling words as the session progresses from first, fifth and final session (M = 13.67; SD =5.678), (M = 7.33; SD =4.849) and (M = 9.83; SD = 4.019) respectively (Table – 14). Similar result was found in the response to positive feeling words. However, response to negative feeling words increased from first (M = 9.42; SD = 3.476) to fifth session (M = 10.67; SD = 7.050) and then decreased in the final session (M = 5.75; SD = 3.019) (Table – 15). Friedman and Wilcoxon-signed rank test was done later to confirm whether the changes were significant and result indicated significant changes (Table 15-16).

This result provided an insight into the participants' overall response to feeling word during three phases of treatment. It was apparent from the result that while in depressed state, participants responded more to negative words. The higher sensitivity to feeling word during depressed state and slow decrease at the end of the treatment phase, therefore, confirmed that depressed people were more prone to feelings stimulus than the normal population. At the same time improvement led to less response to negative feeling words.

These findings were consistent with similar research where depressed people reported more distress while watching neutral materials than the non-clinical population (Rottenberg, Gross, & Gotlib, 2005). In the present research, there were less response to positive feeling words which also replicated the previous research. People with depression usually found to

have low response to positive emotional stimulus (Berenbaum & Oltmanns, 1992; Sloan, Strauss, Quirk, & Sajatovik, 1997).

Participants' attitudes toward the service. Table – 17 showed the mean and standard deviation scores of participants' session to session subjective ratings of perceived benefits from the web page. The mean score indicated a gradual increase in the participants' perceived benefits as the session progresses from first (M = 7.53; SD = .516) to ninth session (M = 9.00; SD = .000). As found in similar research, preference and acceptance toward the services usually change from poor-to-greater acceptance after using the services (Mitchell et al., 2007). The Friedman test conducted to determine whether the differences were significant found gradual increase in perceived benefits [χ^2 (8, N = 12) = 22.656, p = .004] (Table – 18).

In the present research, participants' satisfaction in using the services also yielded similar result. As shown in Table – 19, participants reported higher level of satisfaction as the session progressed from first to ninth session (M = 7.80; SD = .414) and (M = 9.00; SD = .000) respectively. The results of Friedman test also indicated that there was a significant difference in participants rated satisfaction from session to session [χ^2 (8, N = 12) = 22.154, p = .005] (Table – 21). The mean ranks of 1st, 5th and final sessions were 2.75, 6.12 and 7.25 respectively which indicated gradual increase in satisfaction level (Table – 20). The result was consistent with previous research that found participants' greater acceptances as well as their satisfaction in using the services (Joutsenniemi et al., 2011; Richards et al., 2016).

The verbal opinion that participant expressed in the evaluation form portrayed participants' recommendation and feedback as well as their inquiry about the web page. Figure – 12 showed the recommendation of participants. Majority of the participants reported everything as okay. There were, however, few positive appreciation communicated by the participants. They perceived the web page as easy, understandable and necessary and the content as easy to conduct and understand. Two of the participants found the content to be

relevant to their problems. One reported accurately identifying the problem through the use of web page. As found in previous research, participants found program to be informative, helpful without any difficulties and helpful in general (Richards et al., 2016).

Two participants found “challenging negative thought” as the most liked feature. The model to understand the problem was very helpful as reported by a participant. The goal setting feature helped a participant to comprehend the necessity of change. These positive feedback were another indicative of the effectiveness of this program. In comparison, the time-convenience, easy to understand and conduct, users friendliness were the most liked features found in previous research (Richards et al., 2016).

In terms of negative evaluation of the web page, it is apparent that the majority of the participants had no feedback. There was a request to put more boxes in the web page for making the service more interactive. In contrast, another participant requested fewer boxes and more close-ended questions. Two other feedback were suggested by participants, one concerning the “job-related item” in problem rating form and the other concerning the “parents’ factors” in PPMP model in the third session. These particular areas, therefore, needed further consideration before changes can be made.

There were few inquiries expressed by the participants as shown in Table – 21. In summary, the participants’ inquiries were mainly on the cost, availabilities and accesibilities of the package both on short and long term. These inquries also emphasizes the importance and necessity of such an online service.

Limitation

This research was the first of its kind done on the IT-based intervention in Bangladesh. Therefore, lack of available research data and available online services in Bangladesh was the first and foremost limitation. As a result, the research was primarily focused on developing an IT-based intervention in Bangladesh. Doing a huge amount of

groundwork, therefore, resulted in methodological compromise in the first phase – where interview or survey method would have been more ideal than secondary data collection method. Similarly, a case study method would have been more informative than archival review. However, it is imperative to note that both interview or survey and case study method would have made the lengths of the research comparatively longer than the method used.

In the second phase of the research, one group pre-posttest design was adopted. Presence of control group and randomization would have made the research richer. However, one group pre-posttest design, also called open clinical trial, is often considered an acceptable and ideal design for the first evaluation of any treatment module. Other important limitations of the present research were the small sample size and the sample being limited to Dhaka city.

A more rigorous effectiveness study may be an important first step to determine the program's effectiveness. This is an important step that should be taken immediately. As with any kinds of interventions, it is really imperative to follow and ensure evidence-based practices. The sample size should be large and representative of population. Use of randomization, should ensure the rigorousness. It is also imperative that the recommendations suggested by the participants in the first clinical trial should be included in the web page.

Concluding remarks

IT-based interventions are a relatively new endeavor. A lot of attempts are being made to make these kinds of services more accessible in Bangladesh. As noted earlier, mental health problems are raising rapidly but the numbers of CBT practitioners are limited. The services are also limited to major cities. Therefore, CCBT services can provide a desirable alternative. However, the implementations of such services need careful consideration on several levels.

Before developing these kinds of services, the proper protocols and guidelines should be reviewed and considered. The needs and preferences of the participants should be carefully assessed and included. Because participants' acceptance and satisfaction are an important factor that determine the continuation and success of the online packages. Any IT-based intervention should be subjected to extensive research to provide and ensure evidence-based practices. So, effectiveness studies should be carried out after the development of such a service. Therefore, only through considering all of these options, effective, fair, safe and friendly users' policy can be developed and implemented.

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APPENDICES

Appendix A:

Measurements

1. Consent Form
2. Demographic information
3. Depression scale (DS; Uddin & Rahman, 2005)
4. Problem ratings form
5. Feelings ratings form
6. Feedback form
7. Judge evaluation form

সম্মতিপত্র (Consent form)

এই গবেষণায় অংশগ্রহণ করার জন্য আপনাকে ধন্যবাদ। আমার নাম **শাহানা পারভীন**, আমি **চিকিৎসা মনোবিজ্ঞান বিভাগের** এম ফিলের একজন গবেষক। আমার এম ফিল গবেষণা পত্রের নাম হল **"Computer Assisted Cognitive Behavior Therapy (CCBT) for Bangladeshi Population"**। এই গবেষণায় আমি আমাদের প্রচলিত কথার মাধ্যমে থেরাপিকে কম্পিউটারের মাধ্যমে কিভাবে প্রদান করা যায় সেই উদ্দেশ্য নিয়ে কাজ করছি। এই উদ্দেশ্যকে সামনে রেখে আমি একটি ওয়েবপেজ তৈরি করেছি, যার নাম - **অতিক্রম**। এখন এটি কতটা সার্থক অর্থাৎ এর মাধ্যমে মানুষ কতটুকু উপকৃত হবে তা যাচাই করার জন্য আমি পরীক্ষামূলকভাবে কিছু অংশগ্রহণকারীর উপর প্রয়োগ করতে চাই।

এই ওয়েবপেজ মূলত মৃদু থেকে মাঝারি পর্যায়ের বিষণ্ণতার স্বচিকিৎসার একটি অংশ হিসেবে তৈরি করা হয়েছে। তবে উল্লেখ্য যে, এটি দীর্ঘস্থায়ী বিষণ্ণতার ক্ষেত্রে কাজ করবে না। এখানে সর্বমোট ১০টি সেশন আছে। প্রতি সপ্তাহে একটি করে ১০ সপ্তাহে আপনি ১০টি সেশনে কাজ করতে পারবেন। এখানে আপনি নিজেই নিজের চিকিৎসক হয়ে বিষণ্ণতা থেকে মুক্তির কাজ করতে পারবেন। এই থেরাপীর ফলে আপনার কোন রকম ক্ষতি হওয়ার সম্ভাবনা নেই।

আপনার দেওয়া যাবতীয় তথ্যের সবরকম গোপনীয়তা রক্ষা করা হবে। অ্যাডমিন প্যানেলের ৩ জন সদস্য ব্যতীত আপনার তথ্যগুলো আর কেউ জানবে না। আপনার নাম প্রকাশ না করে গবেষণার ফলাফল উপস্থাপনা করা হবে। আপনি যেকোনো মুহূর্তে এই গবেষণায় অংশগ্রহণ করা এবং থেরাপী নেওয়া বন্ধ করে দিতে পারেন।

আশা করি এই ওয়েবপেজ ব্যবহার করে আপনি উপকৃত হতে পারবেন। আপনার দেওয়া তথ্য আমাদের থেরাপির উন্নয়নে সাহায্য করবে। আপনাকে ধন্যবাদ।

অংশগ্রহণকারীর স্বাক্ষর

ব্যক্তিগত তথ্যাবলী (Demographic information)

নামঃ

লিঙ্গঃ

বয়সঃ

শিক্ষাগত যোগ্যতাঃ

পেশাঃ

বৈবাহিক অবস্থাঃ

আর্থ-সামাজিক অবস্থানঃ

পূর্বে বিষণ্ণতার কোন চিকিৎসা নিয়েছেন কি?

১। হ্যাঁ

২। না

হ্যাঁ হলে, কোন ধরনের চিকিৎসা নিয়েছেন সেই সম্পর্কে লিখুনঃ

বিষণ্ণতা ব্যতীত অন্য কোন মানসিক রোগের জন্য চিকিৎসা নিয়েছেন কি?

১। হ্যাঁ

২। না

হ্যাঁ হলে, কোন ধরনের মানসিক রোগ ছিল বা চিকিৎসা কেমন ছিল সেই সম্পর্কে লিখুনঃ

বিশেষ কোন শারীরিক রোগ আছে কি?

Dhaka University Institutional Repository

১। হ্যাঁ

২। না

হ্যাঁ হলে, কোন ধরনের রোগ বা কি ধরনের চিকিৎসা নিচ্ছেন সেই সম্পর্কে লিখুনঃ

Dhaka University Institutional Repository

বিষন্নতা পরিমাপক (Depression Scale)

নিচের বিবৃতি গুলো পড়ে গত এক সপ্তাহের মধ্যে এই বিবৃতি গুলো আপনার ক্ষেত্রে কতটা প্রযোজ্য তা বিবৃতির পার্শ্বের সম্ভাব্য পাঁচটি উত্তরের যেটি প্রযোজ্য সেটির ঘরে টিক(√) চিহ্ন দিয়ে নির্দেশ করুন। আপনাকে সম্ভাব্য এই পাঁচটি উত্তর থেকে যে কোন একটিকে বেছে নিতে হবে এবং সবগুলো প্রশ্নের উত্তর দিতে হবে। অনুগ্রহ করে লক্ষ্য করুন সবগুলো বিবৃতির উত্তর দিয়েছেন কি না।

বিবৃতিসমূহ	একেবারেই প্রযোজ্য নয়	প্রযোজ্য নয়	মাঝামাঝি	কিছুটা প্রযোজ্য	পুরোপুরি প্রযোজ্য
১. আমার অশান্তি লাগে।					
২. ইদানিং আমি মনমরা থাকি।					
৩. আমার ভবিষ্যত অন্ধকার।					
৪. ভবিষ্যতে আমার অবস্থা দিন দিন আরো খারাপ হবে।					
৫. আমার সব শেষ হয়ে গেছে।					
৬. আমি মনে করি যে, জীবনটা বর্তমানে খুব বেশী কষ্টকর।					
৭. বর্তমানে আমি অনুভব করি যে মানুষ হিসাবে আমি সম্পূর্ণ ব্যর্থ					
৮. আমি কোথাও আনন্দ-ফুর্তি পাই না।					
৯. নিজেকে খুব ছোট মনে হয়।					
১০.সবকিছুতে আমার আত্নবিশ্বাস কমে গেছে।					
১১.আমার মনে হয় মানুষ আমাকে করুণা করে।					
১২.জীবনটা অর্থহীন।					
১৩.প্রায়ই আমার কান্না পায়।					
১৪.আমি প্রায়ই বিরক্ত বোধ করি।					
১৫.আমি কোন কিছুতেই আগ্রহ পাই না।					
১৬.আমি ইদানিং চিন্তা করতে ও সিদ্ধান্ত নিতে পারি না।					
১৭.আমি আজকাল অনেক কিছুতেই মনোযোগ দিতে পারি না।					
১৮.আমি আগের মতো মনে রাখতে পারি না।					
১৯.আমি দূর্বল বোধ করি এবং অল্পতেই ক্লান্ত হয়ে পড়ি।					
২০.আমি এখন কম ঘুমাই।					
২১.আমি এখন বেশী ঘুমাই।					
২২.আমার মেজাজ খিঁটখিঁটে হয়ে গেছে।					
২৩.আমার ক্ষুধা কমে গেছে।					
২৪.আমার ক্ষুধা বেড়ে গেছে।					
২৫.আমার ওজন কমে গেছে (ইচ্ছাকৃতভাবে ওজন নিয়ন্ত্রণের চেষ্টা করার ফলে নয়)।					
২৬.আমার মনে হয় যে আমার কাজকর্মের গতি কমে গেছে।					
২৭.হাসির কোন ঘটনা ঘটলেও আমি আর হাসতে পারি না।					
২৮.যৌন বিষয়ে আমার আগ্রহ কমে গেছে।					
২৯.সামাজিক কাজকর্মে আগের মতো অংশগ্রহণ করতে পারি না।					
৩০.শিক্ষা বা পেশাগত কাজকর্ম আগের মতো করতে পারি না।					

Total:

Developed by:

Zahir Uddin and Dr. Mahmudur Rahman, Department of Clinical Psychology, D.U

Problem Rating Form

সমস্যা	রেটিং (১ - ১০%)
মন খারাপ থাকে	
কাজ করতে ইচ্ছা করে না	
কিছু মনে থাকে না	
কোনও কাজে বা পড়ায় মনোযোগ দিতে পারি না	
শিক্ষা জীবনে আশাহীনতা	
চাকরীতে ব্যর্থতা	
সম্পর্কে ভাঙ্গন	
আত্মবিশ্বাসের অভাব	
কোন অসুস্থতা বা শারীরিক অক্ষমতা	
প্রিয় কারো মৃত্যু	
অন্যান্য	

Screenshots of Problem rating form:

Depression

otikrom.com/index.php/session3/show_first_session_exercise4

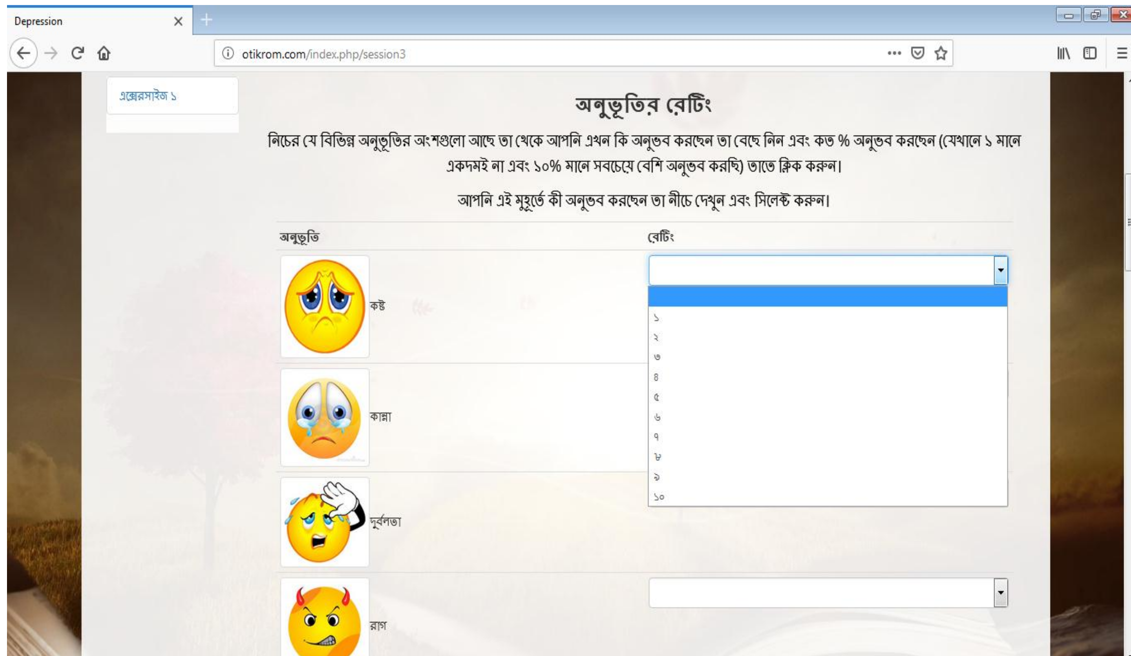
এক্সেরসাইজ ২

সমস্যা	রেটিং
মন খারাপ থাকে	
কাজ করতে ইচ্ছা করে না	
কিছু মনে থাকে না	
কোনও কাজে বা পড়ায় মনোযোগ দিতে পারি না	
শিক্ষা জীবনে আশাহীনতা	
চাকরীতে ব্যর্থতা	
স্বম্পর্কে ভাঙ্গন	
আত্মবিশ্বাসের অভাব	
কোন অসুস্থতা বা শারীরিক অক্ষমতা	
প্রিয় কারো মৃত্যু	
অন্যান্য	

Feeling Rating Form

অনুভূতি	রেটিং (১ - ১০%)
কষ্ট	
কান্না	
দুর্বলতা	
রাগ	
মন খারাপ	
লজ্জা	
ঘৃণা	
শূন্যতা	
বিরক্ত	
শান্ত	
স্বাভাবিক	
আনন্দিত	
অস্বস্তি	
উদ্বিগ্ন	
উদ্যমী	
হতাশ	
বিস্মিত	
ব্যথিত	
ভাগ্যবান	
গর্বিত	

Screenshots of Feeling rating form:



Feedback Form

সেশন সম্পর্কে আপনার মূল্যবান মতামত এবং পরামর্শঃ

	একেবারেই ঠিক না	সামান্য	মোটামুটি	সঠিক	পুরোপুরি সঠিক
ভাষা খুব সহজ এবং সাবলীল ছিল					
উপাদান গুলো সহজ এবং বোধগম্য ছিল।					
উপাদান গুলো আপনার সমস্যার সাথে সম্পর্কযুক্ত ছিল।					
এক্সেরসাইজ গুলো সহজ এবং বোধগম্য ছিল।					
এক্সেরসাইজ গুলো আপনার সমস্যার সাথে সম্পর্কযুক্ত ছিল।					
বাড়ির কাজ গুলো সহজ এবং বোধগম্য ছিল।					
বাড়ির কাজ গুলো আপনার সমস্যার সাথে সম্পর্কযুক্ত ছিল।					
উদ্দেশ্যঃ সেশন - ১	একেবারেই সফল হয় নি	সামান্য	মোটামুটি	সফল	পুরোপুরি সফল
মনখুলে আপনার সমস্যাগুলো নিয়ে কথা বলা					
বিষণ্ণতা কি সে সম্পর্কে ধারণা					
নিজের সমস্যাগুলো শনাক্ত করা					
সমস্যার ধরণগুলো (অনুভূতি, চিন্তা, আচরণগত, শারীরিক) জানতে পারা					
উদ্দেশ্যঃ সেশন - ২	একেবারেই সফল হয় নি	সামান্য	মোটামুটি	সফল	পুরোপুরি সফল
নিজের সমস্যাগুলো শনাক্ত করা					
ঘটনা, চিন্তা, অনুভূতি, আচরণ, শারীরিক					

প্রতিক্রিয়ার মধ্যে সম্পর্কগুলো জানা					
চিন্তার ডাইরি এবং তা কিভাবে পূরণ করতে হয় সেটা শিখা					
কাজের পরিমাণের তালিকা পূরণ করা					
উদ্দেশ্যঃ সেশন - ৩	একেবারেই সফল হয় নি	সামান্য	মোটামুটি	সফল	পুরোপুরি সফল
অতীতের অর্থাৎ আপনার বোঝার বয়স থেকে বর্তমান সময় পর্যন্ত কোন কোন ঘটনা কিভাবে বিষণ্ণতাকে প্রভাবিত বা তৈরি করতে ভূমিকা রেখেছে তা জানা					
কিভাবে এবং কি কি কারণে বিষণ্ণতার শুরু হতে পারে তা জানা					
বর্তমান জীবনের ঘটনাগুলো কিভাবে মনকে প্রভাবিত করছে তা জানা					
চিন্তার গভীরে যাত্রা শুরু করা					
নিজের অবস্থান শনাক্ত করা					
উদ্দেশ্যঃ সেশন - ৪	একেবারেই সফল হয় নি	সামান্য	মোটামুটি	সফল	পুরোপুরি সফল
সমস্যার গভীরে যে মূল ভাবনা রয়েছে সে সম্পর্কে ধারণা পাওয়া					
মূল ভাবনা থেকে রক্ষা পাওয়ার জন্য যে অকার্যকর নিয়ম মানুষ তৈরি করে সে সম্পর্কে জানা					
কিভাবে এই ভাবনা গুলো বিষণ্ণতাকে জিইয়ে রাখে তা জানা					
নিজের অবস্থান শনাক্ত করা					
লক্ষ্য নির্ধারণ করে, কোন ধাপে কি কি কাজ করবেন তার তালিকা তৈরি করা					

উদ্দেশ্যঃ সেশন - ৫	একেবারেই সফল হয় নি	সামান্য	মোটামুটি	সফল	পুরোপুরি সফল
আপনার সমস্যার মূল্যায়ন করা					
আপনার মন কেমন আছে তা নির্ণয় এবং রেটিং করা					
নেতিবাচক চিন্তার পরিবর্তন করার পদ্ধতি শিখা					
আপনি বর্তমানে কতটুকু কর্মক্ষম তা নির্ণয় করা					
চিন্তার পরিবর্তন এবং পুরো সপ্তাহের কাজের পরিমাণ নির্ণয়					
উদ্দেশ্যঃ সেশন - ৬	একেবারেই সফল হয় নি	সামান্য	মোটামুটি	সফল	পুরোপুরি সফল
কাজ ও অনুভূতির সম্পর্ক নিয়ে কিছু চর্চা করা					
গত সপ্তাহে ঘটে যাওয়া ইতিবাচক ঘটনা নিয়ে কাজ করা					
আপনার প্রিয় কাজের একটা তালিকা তৈরি করা					
আগামী এক সপ্তাহে কোন কোন কাজ করতে চান এবং কখন করবেন তা নির্ধারণ করা					
চিন্তা পরিবর্তনের কাজ করা					
উদ্দেশ্যঃ সেশন - ৭	একেবারেই সফল হয় নি	সামান্য	মোটামুটি	সফল	পুরোপুরি সফল
মূল ভাবনা ও অকার্যকর নিয়ম পরিবর্তন করার পদ্ধতি শিখা					
অকার্যকর চিন্তার পরিবর্তন শিখা					
নিজের সম্পর্কে সুস্পষ্ট ধারণা তৈরি করার জন্য -আমি- নামক একটি বাড়ির কাজ করা					
আপনার বর্তমান কাজের পরিমাণ নির্ণয় করা ও					

বাড়ানো					
উদ্দেশ্যঃ সেশন - ৮	একেবারেই সফল হয় নি	সামান্য	মোটামুটি	সফল	পুরোপুরি সফল
অন্যান্য যে সমস্যাগুলো বলেছেন তার মধ্যে কিছু নিয়ে কাজ					
অকার্যকর চিন্তার পরিবর্তন শিখা					
আপনার বর্তমান কাজের পরিমাণ নির্ণয় করা ও বাড়ানো					
উদ্দেশ্যঃ সেশন - ৯	একেবারেই সফল হয় নি	সামান্য	মোটামুটি	সফল	পুরোপুরি সফল
সমস্যা সমাধান বা মেনে নেওয়ার পদ্ধতিগুলো শেখা					
পদ্ধতিগুলোর চর্চা					
এই সেশন থেকে আপনি কতটা উপকৃত হয়েছেন	(ড্রপ ডাউন লিস্ট - ১ থেকে ১০)				
এই সেশনে আপনি কতটা সন্তুষ্ট	(ডপ ডাউন লিস্ট - ১ থেকে ১০)				
এই সেশনের যে বিষয়টি আপনার সবচেয়ে ভালো লেগেছে					
এই সেশনের যে বিষয়টি পরিবর্তন হলে ভালো হবে বলে আপনি মনে করেন					

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Judge Evaluation Form

নির্দেশাবলীঃ

অতিক্রম - বিষণ্ণতা চিকিৎসার একটি ওয়েবসাইট। যেখানে নিজেই নিজের চিকিৎসক হয়ে বিষণ্ণতার কারণগুলো শনাক্ত করা এবং এই মানসিক কষ্টগুলো থেকে বের হয়ে আসার পথ গুলো শিখে বের হয়ে আসতে ক্লায়েন্টদের সাহায্য করা হবে। এটি একটি আত্মনির্ভর সেবা। এখানে মূলত ৯ টি সেশন আছে। প্রতিটি সেশনে একটি করে স্লাইড থাকবে, কিছু অনুশীলন এবং বাড়ির কাজ থাকবে।

এর উপাদানগুলোর ড্রাফট করার জন্য প্রথমে ভাষাগত বৈচিত্র এবং বাংলায় বিষণ্ণতার লক্ষণগুলো কিভাবে ক্লায়েন্টরা সাধারণত প্রকাশ করে তা দেখার জন্য একটি ছোট গবেষণা করা হয়। এর উপর ভিত্তি করে লক্ষণগুলো নির্বাচন করা হয়। এরপর এই ওয়েবপেজের যাবতীয় উপাদানগুলো তৈরি করা হয় **Cognitive Behavior Therapy (CBT)** এর মডেল ও পদ্ধতিগুলো অনুসরণ করে। প্রথমে একটি ড্রাফট করা হয় এম এস ওয়ার্ডে, পরবর্তীতে একটি ড্রাফট ওয়েবপেজ করা হয়। এটি আবার ২ বার পরিবর্তন ও পরিমার্জন করা হয়।

এখন এই ড্রাফটে ব্যবহৃত উপাদানগুলো **CBT** এর মডেল ও পদ্ধতি অনুসরণ ঠিকভাবে করছে কিনা, এর ধারাবাহিকতা যথাযথ কিনা, সমস্যার প্রশমনের ক্ষেত্রে উপাদানগুলো প্রাসঙ্গিক ও যথোপযোগী কিনা, ব্যবহিত ভাষা, পদ্ধতি এবং উপস্থাপনার ধরন ঠিক আছে কিনা বা কোনও কিছু পরিবর্তন করতে হবে কি না সে বিষয়ে আপনার মূল্যবান মতামত আশা করছি। আপনার মূল্যবান সময়ের জন্য ধন্যবাদ।

উপাদান	একমত	একমত নই	মতামত
প্রথম পাতা			
১। পুরো ওয়েবপেজের লক্ষ্য ও উদ্দেশ্য সম্পর্কে ধারণা দিচ্ছে।			
২। তথ্যগুলো ভূমিকা হিসেবে সামঞ্জস্যপূর্ণ।			
সেশন ১			
১। বিষণ্ণতা কি সে সম্পর্কে ধারণা দিচ্ছে।			
২। ক্লায়েন্ট নিজের সমস্যাগুলো শনাক্ত করতে পারবে।			
৩। ক্লায়েন্ট সমস্যার ধরণগুলো (অনুভূতি, চিন্তা, আচরণগত, শারীরিক) জানতে পারবে।			
৪। বাড়ির কাজ হিসেবে যে অনুভূতির ছক দেওয়া হয়েছে তা সমস্যার সাথে সঙ্গতিপূর্ণ।			
৫। বাড়ির কাজটি ক্লায়েন্টদের জন্য বোধগম্য এবং চর্চা করা সহজ হবে।			

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সেশন ২			
১। ক্লায়েন্ট ঘটনা, চিন্তা, অনুভূতি, আচরণ, শারীরিক প্রতিক্রিয়ার মধ্যে সম্পর্কগুলো (Five-part model) জানতে পারবে।			
২। চিন্তার ডাইরি এবং তা কিভাবে পূরণ করতে হয় সেটা শিখতে পারবে।			
৩। বাড়ির কাজ হিসেবে যে কাজের পরিমাণের ছক দেওয়া হয়েছে তা সমস্যার সাথে সঙ্গতিপূর্ণ।			
৪। বাড়ির কাজটি ক্লায়েন্টদের জন্য বোধগম্য এবং চর্চা করা সহজ হবে।			
সেশন ৩			
১। যে পি পি এম মডেল দেওয়া হয়েছে তা ক্লায়েন্ট বুঝতে পারবে।			
২। কিভাবে এবং কি কি কারণে বিষণ্ণতার শুরু হতে পারে সে সম্পর্কে ক্লায়েন্ট ধারণা পাবে।			
৩। বর্তমান জীবনের ঘটনাগুলো কিভাবে মনকে প্রভাবিত করছে সে সম্পর্কে ক্লায়েন্ট ধারণা পাবে।			
৪। বাড়ির কাজ হিসেবে যে চিন্তার লিস্ট দেওয়া হয়েছে তা সমস্যার সাথে সঙ্গতিপূর্ণ।			
৫। বাড়ির কাজটি ক্লায়েন্টদের জন্য বোধগম্য এবং চর্চা করা সহজ হবে।			
সেশন ৪			
১। মূল ভাবনা ও অকার্যকর নিয়ম এবং এর সাথে বিষণ্ণতার সম্পর্ক নিয়ে যথাযথ ধারণা পাবে।			
২। লক্ষ্য নির্ধারণ, কোন সেশনে কি কাজ করা হবে সেই সম্পর্কে ক্লায়েন্ট যথাযথ ধারণা পাবে।			
৩। বাড়ির কাজ হিসেবে যে চিন্তার ছক দেওয়া হয়েছে তা সমস্যার সাথে সঙ্গতিপূর্ণ।			
৪। বাড়ির কাজটি ক্লায়েন্টদের জন্য বোধগম্য এবং চর্চা করা সহজ হবে।			
সেশন ৫			
১। নেতিবাচক চিন্তার পরিবর্তন করার পদ্ধতিটি সহজ ও সাবলীল।			

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২। বাড়ির কাজ হিসেবে যে চিন্তার ছক ও কাজের পরিমাণের ছক দেওয়া হয়েছে তা সমস্যার সাথে সঙ্গতিপূর্ণ।			
৩। বাড়ির কাজগুলো ক্লায়েন্টদের জন্য বোধগম্য এবং চর্চা করা সহজ হবে।			
সেশন ৬			
১। কাজ ও অনুভূতির সম্পর্ক নিয়ে চর্চাগুলো যথাযথ ছিল।			
২। গত সপ্তাহে ঘটে যাওয়া ইতিবাচক ঘটনা, প্রিয় কাজের তালিকা তৈরি করা এবং আগামী সপ্তাহের কাজের তালিকা তৈরি করা এগুলো যথাযথ ও সমস্যার সাথে সঙ্গতিপূর্ণ।			
৩। বাড়ির কাজগুলো সমস্যার সাথে সঙ্গতিপূর্ণ।			
৪। বাড়ির কাজ ক্লায়েন্টদের জন্য বোধগম্য এবং চর্চা করা সহজ হবে।			
সেশন ৭			
১। মূল ভাবনা ও অকার্যকর নিয়ম পরিবর্তন করার পদ্ধতি ক্লায়েন্ট শিখতে পারবে।			
২। বর্তমান কাজের পরিমাণ বাড়ানোর পদ্ধতিগুলো যথাযথ ও সামঞ্জস্যপূর্ণ।			
৩। বাড়ির কাজগুলো সমস্যার সাথে সঙ্গতিপূর্ণ।			
৪। বাড়ির কাজ ক্লায়েন্টদের জন্য বোধগম্য এবং চর্চা করা সহজ হবে।			
সেশন ৮			
১। মূল ভাবনা ও অকার্যকর নিয়ম পরিবর্তন করার পদ্ধতি ক্লায়েন্ট শিখতে পারবে।			
২। ক্লায়েন্ট অন্যান্য যে সমস্যার কথা বলেছে সেগুলো নিয়ে কাজগুলো যথাযথ হয়েছে।			
৩। বাড়ির কাজগুলো সমস্যার সাথে সঙ্গতিপূর্ণ।			
৪। বাড়ির কাজ ক্লায়েন্টদের জন্য বোধগম্য এবং চর্চা করা সহজ হবে।			
সেশন ৯			

১। সমস্যার সমাধান বা মেনে নিয়ে চাপ মোকাবেলার যে পদ্ধতি দেওয়া হয়েছে তা যথাযথ ও সামঞ্জস্যপূর্ণ।			
২। পদ্ধতি গুলোর চর্চাগুলো সহজ ও বোধগম্য।			
৩। বাড়ির কাজগুলো সমস্যার সাথে সঙ্গতিপূর্ণ।			
সামগ্রিক মতামত			
১। সব মিলিয়ে ওয়েবসাইটটি বিষণ্ণতা সম্পর্কে ধারণা দিবে এবং এ থেকে পরিত্রাণের ক্ষেত্রে সাহায্য করবে।			
২। উপাদানগুলো (স্লাইড, এক্সেরসাইজ) সহজ ও বোধগম্য।			
৩। উপাদানগুলো (স্লাইড, এক্সেরসাইজ) সমস্যার সাথে সামঞ্জস্যপূর্ণ।			
৪। ভাষা সহজ, বোধগম্য এবং সামঞ্জস্যপূর্ণ।			
৫। ব্যবহার বিধি জটিল নয়।			
৬। যে ধাপ অনুযায়ী সেশন গুলো সাজানো হয়েছে সেই ধারাবাহিকতা যথাযথ।			
৭। ক্লায়েন্ট উপকৃত হবে।			

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Appendix B:

Description of webpage

1. A brief description of webpage
2. Content of the webpage
3. Session-to-sessions' structure
4. Screenshots of the webpage

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ওয়েবপেজ সম্পর্কে সংক্ষিপ্ত বর্ণনা

"অতিক্রম" বিষণ্ণতার মনোবৈজ্ঞানিক চিকিৎসার একটি ওয়েবসাইট। যেখানে নিজেই নিজের চিকিৎসক হয়ে আপনি বিষণ্ণতার কঠিন পথ পারি দিতে পারবেন। এই পথ অতিক্রম করতে আপনাকে সাহায্য করা এই ওয়েবসাইটের মূল লক্ষ্য। এখানে আপনি আপনার বিষণ্ণতার কারণগুলো শণাক্ত করতে পারবেন। একই সাথে এই মানসিক কষ্টগুলো থেকে বের হয়ে আসার পথগুলো শিখবেন।

কম্পিউটারের মাধ্যমে মনোবৈজ্ঞানিক চিকিৎসা কি?

কম্পিউটারের মাধ্যমে মনোবৈজ্ঞানিক চিকিৎসা হল মূলত কথার মাধ্যমে মনোবৈজ্ঞানিক চিকিৎসা প্রদানের একটি বিকল্প ব্যবস্থা, যেখানে ব্যক্তিকে তার মানসিক অবস্থা সম্পর্কে ধারণা দেওয়া হয় এবং কিছু কৌশল বা উপায় শেখানো হয়। এটি ব্যক্তির মানসিক সমস্যার লক্ষণগুলো প্রশমিত করে ব্যক্তিকে কার্যকরী ও সুস্থভাবে জীবন চালাতে সাহায্য করবে।

Cognitive Behavior Therapy (CBT) হল এ ধরনের একটি কথার মাধ্যমে চিকিৎসা পদ্ধতি। এ চিকিৎসায় দুটো উপাদান আছে। একটি হল Cognitive Therapy বা চিন্তা-ভাবনা পরিবর্তনের চিকিৎসা এবং অন্যটি হল Behavior Therapy বা আচরণ পরিবর্তনের চিকিৎসা। এই চিন্তা ভাবনা এবং আচরণ পরিবর্তনের মাধ্যমে ব্যক্তির বিষণ্ণতা ও অন্যান্য মানসিক সমস্যা দূরীকরণে বিজ্ঞানসম্মত পদ্ধতি অবলম্বন করাই হল এর উদ্দেশ্য। ৬০ এর দশক থেকে CBT মানুষের সমস্যা সমাধানে কার্যকরী ভূমিকা রেখে আসছে। CBT এর আরো একটি বৈশিষ্ট্য হল কম্পিউটার সফটওয়্যার ব্যবহার করার মাধ্যমে ব্যক্তি নিজেই নিজেকে সাহায্য করতে সক্ষম। এই বিষয়টি মাথায় রেখেই বাংলায় কম্পিউটারাইজড CBT মনোবৈজ্ঞানিক এই চিকিৎসা প্রক্রিয়াটি তৈরি করার এই উদ্যোগ নেওয়া হয়েছে।

চিন্তা-ভাবনা পরিবর্তনের চিকিৎসাঃ

- ব্যক্তির নিজস্ব চিন্তা ও বিশ্বাসগুলো চিহ্নিত করে অর্থাৎ ব্যক্তি কিভাবে নিজেকে, আশেপাশের মানুষ এবং পরিবেশ দেখছে তা চিহ্নিত করে
- চিন্তা ভাবনার সাথে কি করে অনুভূতি ও কাজ সম্পর্কিত তার ব্যাখ্যা দেয়
- অকার্যকরী চিন্তা ভাবনা পরিবর্তনের মাধ্যমে ব্যক্তির জীবনের সুস্থতা নিশ্চিত করে

আচরণ পরিবর্তনের চিকিৎসাঃ

- ব্যক্তির ইতিবাচক আচরণের মাত্রা বৃদ্ধিতে সাহায্য করে
- একইভাবে নেতিবাচক আচরণের পরিমাণ কমাতে ভূমিকা রাখে
- সর্বোপরি অকার্যকরী আচরণ পরিবর্তনের মাধ্যমে ব্যক্তির জীবনের সুস্থতা নিশ্চিত করে

কম্পিউটারের মাধ্যমে মনোবৈজ্ঞানিক চিকিৎসা পদ্ধতিতে এই চিন্তা ও আচরণ পরিবর্তনের চিকিৎসা উপাদানগুলো কম্পিউটারের মাধ্যমে প্রয়োগ করা হয়।

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এটা থেকে আমি কি পাবো?

“অতিক্রম” **এটা কি?**

মানসিক সমস্যাগুলো থেকে পরিত্রাণ পাওয়ার জন্য একটি ওয়েবসাইট। যেখানে নিজেই নিজের চিকিৎসক হয়ে আপনি সমস্যাগুলো শনাক্ত করতে পারবেন। সমস্যার পিছনের কারণগুলো জানতে পারবেন এবং এগুলো থেকে বের হয়ে আসার উপায়গুলো শিখতে পারবেন। এখানে মূলত ১০ সপ্তাহের সেশনের মধ্য দিয়ে আপনি কাজ করবেন। একটা সেশন শেষ করার পর পরবর্তী সেশনে যাওয়ার সুযোগ পাবেন। প্রতিটি সেশনে আপনার জন্য কিছু বাড়ির কাজ ও অনুশীলন দেওয়া থাকবে।

“অতিক্রম” **এর লক্ষ্য**

- নিজের সমস্যাগুলো নিজে কিভাবে শনাক্ত করবেন তা শেখানো
- কিভাবে সমস্যাগুলো থেকে বের হয়ে আসতে পারবেন তার কৌশল শেখানো
- সুস্থ মানসিক স্বাস্থ্য নিশ্চিত করা।
- সবার জন্য এই সেবা সহজ ও সহজলভ্য করা।

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Content of the Webpage

Name	Agenda	Homework
Session – 1	Identification of Problems	Mood Chart
Session – 2	Five-Part Model	Thought diary
Session – 3	Formulation (PPMP)	Thought Listing
Session – 4	Formulation (Core Belief and Dysfunctional Assumptions)	Thought Identification
Session – 5	Thought Challenges	Thought Challenge Activity Listing
Session – 6	Behavioral Activation	Thought Challenge Activity Reschedule Positive Event Recollection
Session – 7	Thought Challenges (Core Belief and Dysfunctional Assumptions)	Thought Challenge Activity Reschedule “ME”
Session – 8	Working with additional Problems	Same
Session – 9	Real Life Crisis	Same
Session – 10	Final Session	Summary

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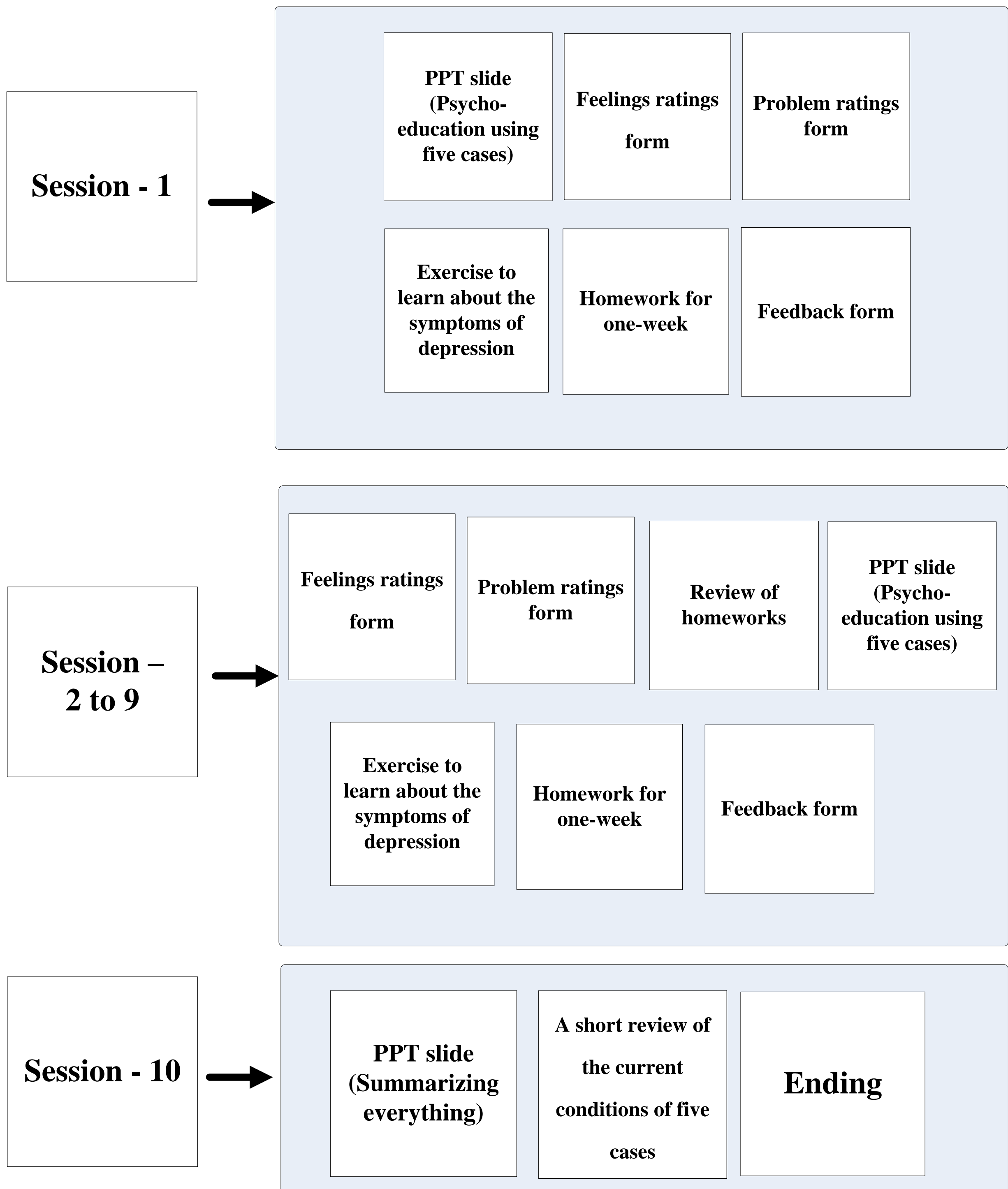
Session-to-sessions' structure



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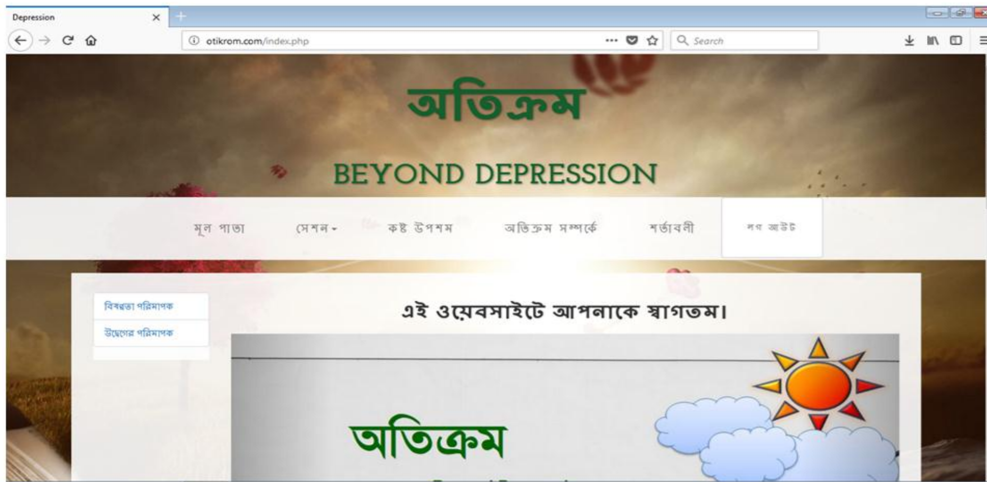
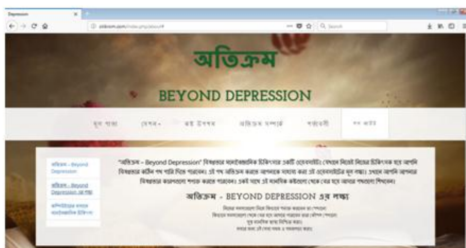
Screenshots of webpage

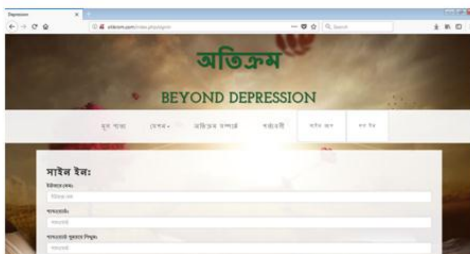


www.otikrom.Com

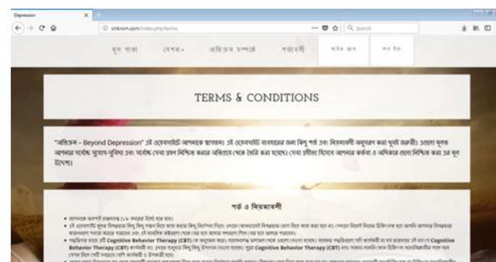


About Otikrom

10 sessions in 10 weeks



Sign up - log in



Terms and Conditions

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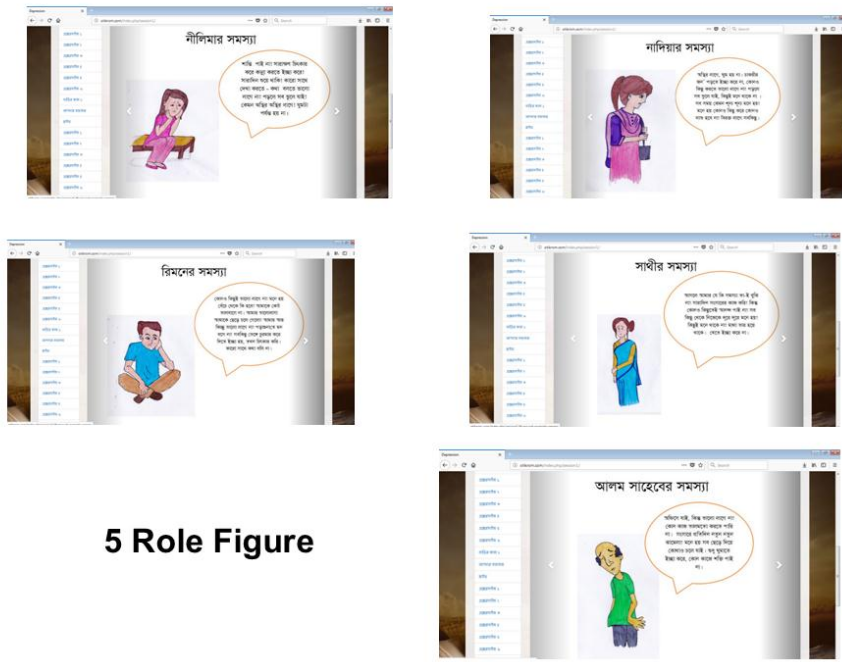
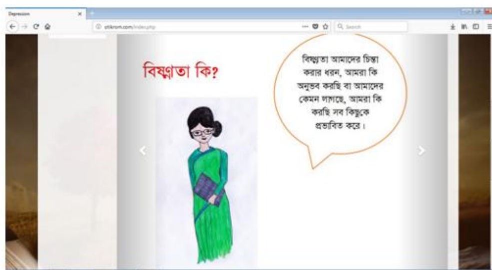


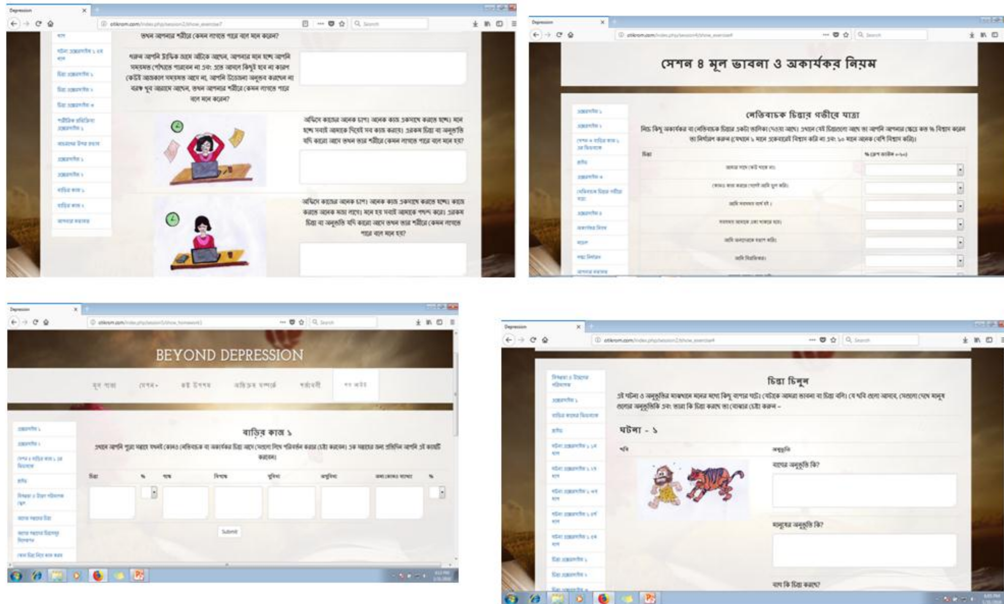
5 Role Figure



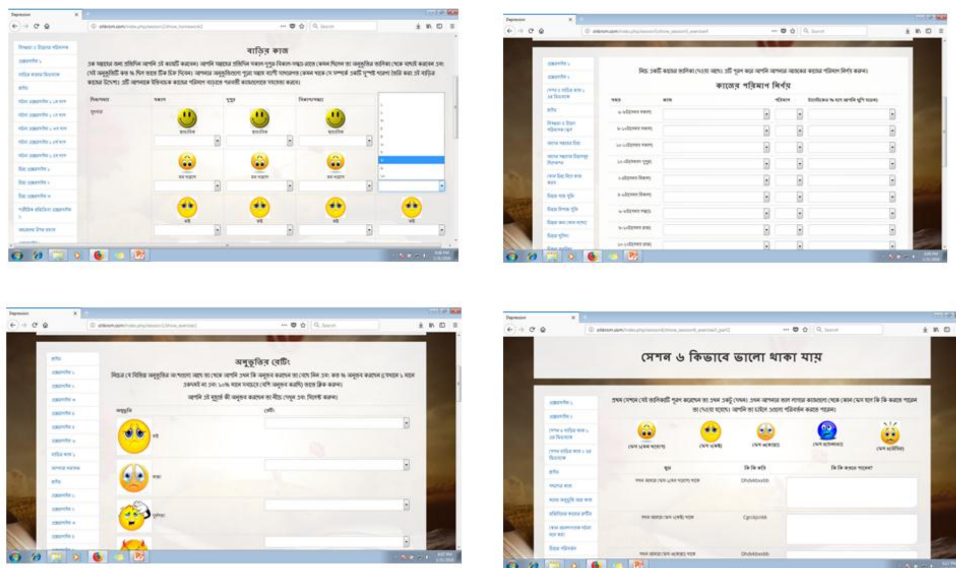
A Therapist

Working with a client

Identifying thought, thought monitoring and challenging



Monitoring Mood and behavior, Behavior Activation



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Appendix C:

Descriptions of Judges

Sl. No.	Name	Designation
1.	Mosammat Nazma Khatun	Chairperson and Associate professor, Department of Clinical Psychology, University of Dhaka
2.	Dr. Muhammad Kamruzzaman Mozumder	Associate professor, Department of Clinical Psychology, University of Dhaka
3.	Kamal Uddin Ahmed Chowdhury	Associate Professor, Department of Clinical Psychology, University of Dhaka
4.	Tarun Kanti Gayen	Clinical Psychologist
5.	Sabiha Jahan	Clinical Psychologist
6.	Saidul Islam	Assistant Clinical Psychologist
7.	Raihana Sharmin	M. Phil Scholar
8.	Ibrahim Chowdhury	Web-designer
9.	Sabrina Sultana	M.S. in English Literature
10.	Ronjit Kumar	Student

THANK YOU