Is Modified Cognitive Behavior Therapy More Effective Than Traditional Cognitive Behavior Therapy? (A Review on Social Anxiety Disorder)

Cahyaning Suryaningrum
University of Muhammadiyah Malang
cahyaning@umm.ac.id
suryaningrumc@gmail.com

Abstract: In line with the increasing complexity of psychological problems today, Cognitive Behavior Therapy (CBT) has been developed from the original. This study aims to determine the effectiveness of traditional CBT and its modification to overcome social anxiety. The method used is a systematic literature review. From 41 journals about CBT and social anxiety disorders, 23 journals fit the purpose of the study, with several studies in it. The result shows that traditional CBT and its modification have the same effectiveness to deal with social anxiety.

Keywords: cognitive behavior therapy, modified, traditional, social anxiety

Objectives

Cognitive Behavior Therapy or CBT (hereafter in this paper will be called so) seen as a new approach that was born after previous therapies. CBT has two main foundations, namely behavioral therapy and cognitive therapy (Westbrook, Kennerly, & Kirk, 2008). It was originally developed to deal with depression cases but later expanded to deal with other psychological disorders such as pain (Ehde, Dillworth, & Turner, 2014), pain in children (Van der Veek, Derkx, Benninga, Boer, & de Haan, 2013), anorexia nervosa (Zipfel et al., 2014), schizophrenia (Wykes, Steel, Everitt, & Tarrier, 2008), obsessive-compulsive in adults with autistic disorder (Russell et al., 2013); all of which show their effectiveness. CBT continues to grow until today, although there are still many criticisms aimed at this therapy and research on its development is still needed (Westbrook et al., 2008).

Although has been widely recognized as an effective therapy for some cases of psychological disorders, some practitioners who use it find that for cases prevention of relapse, chronic and complex, CBT which has been used (some experts have called Traditional or Classic CBT) is less promising (Westbrook et al., 2008; Kocovski, Fleming, Hawley, Huta, & Antony, 2013). Traditional CBT is considered not able to cope with all the psychological problems and not always suitable for all clients. Therefore, in the 1990s years, traditional CBT began to be developed further for more complex problems, one of which was personality disorders. Forms of development are: 1) Adding another intervention as supporting the CBT to improve its effectiveness, 2) Elaborating on the cognitive therapy in ways that are more substantive to improve the usefulness of addressing the problems of chronic and complex – for examples, emphasizing interpersonal processes on cognitive therapy, the development of schema-focused cognitive therapy (SFCT), schema therapy, and MBCT (mindfulness-based cognitive therapy) which combines CBT with mindfulness training, 3) Shorten traditional CBT by only focusing on certain aspects of CBT, for example, Behavioral Activation (BA) which does not emphasize on the cognitive components but rather on behavioral techniques to deal with cases. Further, the development of traditional CBT in this paper is called modified CBT.

The focus of traditional CBT interventions and CBT modification is basically identical, namely on the cognitive-emotional-behavioral dimension, yet the modified CBT includes supporting techniques for the emotional dimension which are not emphasized on traditional CBT. Until now, the modified CBT is still growing and has been doing some research to see its effectiveness and the extent of its application in the population.

From a research result that studies about psychotherapy for major cases of depression, it was mentioned that traditional CBT and Interpersonal Therapy (IPT) were seen as the most effective ones, followed by Behavioral Activation (BA) and Acceptance and Commitment Therapy (ACT), while the last three approaches are modified CBT (Parikh et al., 2009). It seems that the expansion of applications and research on the effectiveness of modified CBT still needs to be done because it is still relatively new and controversial. Its use must be cautious; therefore for the time being traditional CBT should remain the first choice when clients can be subjected to CBT (Westbrook et al., 2008).

Referring to previous statements, although it is doubtful for chronic and complex problems, traditional CBT still be believed to be effective and is recommended for a number of problems, one of them is to overcome Social Anxiety Disorder (SAD).

Much research has been done to examine the effectiveness of CBT in dealing with a social anxiety disorder. This paper will present a review of some

research related to CBT to overcome social anxiety disorder. This review is expected to obtain an overview of the development of CBT researches for social anxiety disorder. Have the researches led to testing the modified CBT for social anxiety or is it still testing traditional CBT, and how effective?

Social anxiety disorders

The terms social anxiety, social phobia, and social anxiety disorder are often interchangeable in their use (Sheperd, 2006). However, from a perspective proposed by McNeil (2010), it is stated that social anxiety is a continuum from not experiencing social anxiety (no anxiety), moving toward "normal" anxiety to the extreme psychopathology level. "Normal" social anxiety is classified as experiencing mild and moderate social anxiety. While people showed severe social anxiety called social phobia (DSM-IV) or social anxiety disorder (DSM-V), which describes the level that has been pathologically social anxiety. Rudy, Davis, and Matthews (2012) said that some researchers mentioned the position of social anxiety in the form of a continuum, where social phobia (social anxiety disorder) is social anxiety at an extreme and meaningful level.

Social anxiety disorder is defined as a tendency to be anxious (nervous) or uncomfortable in social situations caused by fear of doing something that looks embarrassing, gives a bad impression, or because of being judged negatively by others (Antony & Swinson, 2008; Henderson & Zimbardo, 2010). The social situation that is worried by people who experience social anxiety disorder is divided into two, a performance situation (a person is in a situation where he will be the center of attention, assessed or evaluated by others) and a situation of social interaction (a situation where a person must make social contact with new or unfamiliar person).

For some people, anxious situations are limited to certain social situations. For example, some people are very uncomfortable in performance situations (such as presentations or meetings) but look very comfortable in situations of social interaction (such as parties or hanging out with friends), or vice versa. People who experience social anxiety in certain situations fall into a specific category (specified social anxiety). In contrast, those who experience anxiety in all social situations are categorized as generalized social anxiety.

The diagnosis of social anxiety disorder is given to those who have social anxiety in broad social situations, with frequency and intense levels of anxiety and avoidance that make it distress and disrupt the functioning of daily life (American Psychiatric Association [APA], 2013; Handerson & Zimbardo, 2010).

Signs of social anxiety disorder begin in childhood, develop slowly until adulthood, but social anxiety disorder can also occur immediately in adolescence or adulthood without any history in childhood (APA, 2013). However, everyone must feel uncomfortable

with the anxiety they experience even on a mild level. That it is necessary to note is that when social anxiety develops into more severe, it becomes a problem and eventually became a social anxiety disorder. Someone who experiences social anxiety disorder will have an impact on the inhibition of the progress in education or employment, impaired social life (e.g. rarely interact with others), and feeling stressed and frustrated because of the anxiety he suffered (Antony & Swinson, 2008).

The prevalence of social phobia (clinical diagnosis for people with severe social anxiety) in the general population ranges from 9.6% - 16%, 3rd place after substance abuse disorders and depression. It indicates that severe social anxiety or social anxiety disorder is quite common in the community (Antony & Swinson, 2008). In general, social anxiety disorder is more common in women than men. This gender difference is more visible in cases in adolescents and young adults. But in clinical samples, it was found that more men experienced a social anxiety disorder, as explained in *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5; APA, 2013), the possibility that gender roles and social expectations play an important role why men experience a more social anxiety disorder.

There are four main symptoms of social anxiety disorder, namely thought, behavior, physical, and emotional. Nobody has the same symptoms, yet generally, people will have symptoms from each category. In practice, the symptoms will be interconnected and affect each other (Antony & Swinson, 2008). General description of people who experience social anxiety disorder based on *DSM-5* (APA, 2013) are: 1) Experiencing marked fear or anxiety towards one or more social situations where he will feel exposed or observed by others, 2) The individual is worried that he will act or take action that will make him embarrassed, humiliated, or cause rejection or offend others, 3) Social situations almost always give rise to fear or anxiety, 4) Social situations usually be avoided, or when forced to confront they will lead to intense anxiety, and 5) Fear or anxiety is not proportional compared to the real situation.

Cognitive Behavior Therapy for overcoming social anxiety disorders

Cognitive Behavior Therapy includes a number of cognitive-behavioral techniques that are generally used together as a package. Many studies have shown that CBT is a therapy that is effective for overcoming anxiety (Carighead, Craighead, Kazdin, & Mahoney, 1994), including social anxiety (Antony & Swinson, 2008).

As noted earlier, the main foundation of CBT is cognitive therapy and behavioral therapy. Martin and Pear (2003) stated that many studies have shown that the successful application of cognitive therapy will be greater if accompanied by the assignment of home tasks (which is a behavior modification procedure)

rather than just doing the technique of "attacking" irrational thought solely (which is cognitive therapy procedures). In many cases of anxiety, cognitive therapy is usually accompanied by behavioral therapy procedures such as the application of relaxation and exposure (Emery & Oltmanns, 2000).

In terms of therapy behavioral/modification of behavior, the modifier of behavior agrees that things are internal and behavior-behavior that covert (such as thoughts, feelings, and perceptions) can directly affect the behavior. For example, some behavior modifiers believe that what people say to themselves ("I can't do it," or "I'm incompetent") will affect performance. The effect of these self-statements can be empirically tested by changing what is said about themselves and evaluating whether this will influence overt behavior (Carighead et al., 1994).

There are certain similarities between the cognitive approach and the behavioral therapy approach in terms of goals and procedures. For example, cognitive therapists and behavioral modifiers agree that the criteria for assessing the effectiveness of treatments are based on the number of measurable changes that occur in client behavior (Martin & Pear, 2003). Although in some ways, the cognitive approach and the behavioral approach do not agree, they learn from each other.

According to Antony and Swinson (2008), some features of CBT are as follows: 1) CBT is directive therapy, the therapist is actively involved in therapy and makes very specific suggestions, 2) CBT's focus is on changing specific problems. Some other therapies focus on helping individuals develop insight into the underlying roots that cause problems but do not provide specific strategies to overcome those problems, 3) CBT has a relatively short duration. For social anxiety disorder, generally, 10-20 sessions (Barlow & Durand, 2001), 4) CBT focuses on beliefs and current behaviors that are considered responsible for causing problems. Some traditional therapies focus more on early experiences in childhood, 5) In CBT, therapists and clients are "partners" and work together during the treatment, 6) In CBT, the client chooses therapeutic goals with input from the therapist, 7) CBT usually includes strategies for measuring client progress so that treatment techniques can be changed to achieve maximum effectiveness, 8) CBT emphasizes changing beliefs and behavior so that the client is able to better manage his anxiety and control situations that cause anxiety.

Martin and Pear (2003) in his book involve cognitive restructuring methods, self-instructional coping methods, and problem-solving as three large groups of methods in CBT. Craighead et al. (1994) in his book involve cognitive restructuring techniques, relaxation, and exposure exercises (in vivo, imaginal, and graduated exposure) as a method for dealing with anxiety disorders, especially panic disorders. Antony and Swinson (2008) used cognitive therapy (changing negative thinking to be more positive/realistic), exposure to situations that worried clients, and

exercising social skills to overcome social anxiety disorder while Butler (1999) uses four main methods namely changing thinking patterns, doing things differently, reducing self-consciousness, and building up confidence in overcoming social anxiety disorder.

Cognitive restructuring apparently is the method most commonly used for social anxiety disorder. While exposure, relaxation and social skills training, which are methods of behavioral therapy, are commonly used to deal with social anxiety disorders. But it seems that the methods most often suggested for dealing with a social anxiety disorder are cognitive restructuring and exposure (especially in vivo exposure). Some studies conclude that if the two methods are applied together will be more effective than provide a method of restructuring cognitive or exposure alone (Wells & Clerk, 1997). Antony and Swinson (2008) also recommend cognitive therapy (which means cognitive restructuring) and exposure as psychological treatments to overcome social anxiety disorder.

An important thing about CBT is to teach and encourage clients to practice various techniques/methods of CBT between sessions. In other words, although CBT is done jointly with a therapist, it often includes a component of self-help when compared to other forms of professional therapy (Antony & Swinson, 2008). In addition, the effects of CBT tend to be long-term even though individuals in certain situations sometimes still experience anxiety.

Methods

This study is a systematic literature review. The steps are: 1) formulate the review's research questions, 2) identify the relevant literature, 3) perform a selection of primary studies, 4) perform data extraction, and 5) conduct synthesis of evidence. There are 41 journals collected on CBT; however, journals that appropriate to the theme of the study are 23 journals, starting from 2008 until 2015. The details are journal in 2008 (4 journals), 2009 (3 journals), 2012 (2 journals), 2013 (7 journals), 2014 (5 journals), and 2015 (2 journals).

From 23 journals reviewed, five journals are meta-analysis studies, three journals are review studies, 1 case study, and the rest are experimental studies. Of the 23 journals, there are a few studies in it. In accordance with the purpose of this study, it will describe how the development of CBT for social anxiety disorder based on many studies that have been collected.

Results and Discussion

Based on the analysis of 23 journals from 2008-2015, all research consisted of experimental designs, case studies, and meta-analysis showed that CBT was effective in dealing with a social anxiety disorder. Ost (2008) has conducted studies to see the consistency of CBT for anxiety disorders (including social anxiety disorders) from 1970 through a meta-analysis study. The results showed that there were no significant changes in *effect size* in the period under study. It indicates that from the beginning of its development in

the 1970s until the 2000s, CBT showed its effectiveness so that it could be scientifically accounted for handling cases of social anxiety disorder. Additional support also came from a meta-analysis study conducted by Hofmann and Smits (2008) which compared CBT with the placebo group. The results show that CBT is effective for social anxiety disorder in adults with an *effect size of* 2.55 (95% CI = 1.05 - 6.21).

When CBT was compared with psychodynamic therapy in a German study, the results show that both equally effective therapy to overcome social anxiety. However, CBT is more effective in terms of remission by reducing symptoms to a score of < 30 by using the *Liebowitz Social Anxiety Scale* (Leichsenring et al., 2013). Besides, a review of several studies that tried to compare CBT with pharmacotherapy showed that CBT and pharmacotherapy produced the same effect. Pharmacotherapy decreases symptoms faster while CBT is superior in terms of the persistent effects of therapy for client development (Singh & Hope, 2009).

In addition to studies conducted through controlled research, CBT has also been studied for its effectiveness in actual clinical practices (uncontrolled studies) for handling cases of anxiety (including social anxiety disorder) through meta-analysis studies. This study was conducted by Stewart and Chambles (2009), whose results showed an *effect size* of 0.13 (95% CI = 0.79-1.29) for social anxiety disorder. This result can be interpreted that CBT still shows its effectiveness when applied in clinical practices in the field (not in research settings).

The findings are in the context of traditional CBT, with methods commonly used in CBT to interfere with social anxiety. Research on the development of CBT or modified CBT for social anxiety disorder, there are two studies that research from Arch et al. (2013) and Kacovski et al. (2013).

Arch et al. (2013) compared Mindfulness-based Stress Reduction (MBSR) with CBT in a group format to deal with anxiety disorders, including social anxiety disorders. The purpose of this research is to test whether MBSR can be an alternative to overcome anxiety disorders besides traditional CBT, which has been widely recognized for its effectiveness. After three months, the results showed that MBSR and CBT are as effective for overcoming anxiety disorder. However, CBT has more advantages than MBSR in reducing symptoms, whereas MBSR is superior to CBT in reducing symptoms of comorbid disorders such as depression and emotional disorders.

Based on the results above, it can be said that while MBSR as a modified CBT can be an alternative to overcome social anxiety disorders, but traditional CBT is still superior to reduce symptoms. By taking attention to the results of this study, it is possible that the merging of traditional CBT with MBSR to overcome social anxiety disorder will increase its effectiveness. CBT is focused on reducing symptoms, while MBSR is focused on addressing comorbid symptoms such as depression and emotional disorder that usually accompanies anxiety disorders.

Other studies from Kacovski et al. (2013) aims to test the effectiveness of Mindfulness Acceptance-based Group Therapy (MAGT) and CBT in a group format to overcome social anxiety disorder. The purpose of this research is similar to the research conducted by Arch et al. (2013) to test whether MAGT can be used as an alternative to overcoming social anxiety disorder compared to traditional CBT. The underlying background is that although traditional CBT has broad support as a therapy for dealing with social anxiety disorders, in recent years, it has begun to be criticized because it is seen as lacking in improving aspects of quality of life.

The results show that MAGT can be used as an alternative to overcome social anxiety disorder (when compared to the control group), and there is no difference in effectiveness when compared to traditional CBT. However, the hypothesis proposed that MAGT can improve the quality of life that is more meaningful is not supported. From this research, CBT gives a more meaningful improvement in life (from 3-month follow-up data) than MAGT.

The results above are also in line with the research conducted by Arch et al. (2012), who tried to compare Acceptance Commitment Therapy (ACT) with CBT. From this study, it can be concluded that traditional CBT still shows its effectiveness compared to modified CBT itself in terms of improving quality of life.

From the existing studies, it seems that CBT has been much developed to be applied via the Internet, known as Internet-based Cognitive Behavior Therapy (I-CBT). The rationale for CBT has been developed through the internet is that the still low (roughly one-a quarter or one-third) people who experience social anxiety disorder come for therapy. It is because the characteristic of this disorder is his fear of what other people think of him in social situations. Therefore avoidance to meet directly with the therapist is a common thing for them to do. I-CBT seeks to provide solutions to overcome this avoidance where clients do not have to meet or be confronted directly with the therapist (Boettcher, Andersson, & Carlbring, 2013).

Five journals in this paper examine the effectiveness of I-CBT; two were meta-analysis studies, two were experimental studies and one was a review study of 12 studies. From the results of the meta-analysis conducted by Anderson, Cuijpers, Carlbring, Riper, and Hedman (2014) concluded that the I-CBT is as effective as CBT face-to-face either applied individually or in groups with an effect size of 20.01 (95% CI = 20.01 - 0.12). While research conducted by Mewton, Smith, Rossouw, and Andrews (2014) with the same intention, produce effect sizes of 0.30 - 2.53 (moderate to large).

A review of 12 studies (number of subjects: 3888) conducted by Andersson and Hedman (2013) also indicate that I-CBT is effective for clinical cases (including social anxiety disorder) with the effect

sustained from medium to large. When the I-CBT was developed by adding attention training, the effect is even more increased for the development of the client (Boettcher et al., 2013).

The background to the additional attention training (with cognitive bias modification (CBM)) techniques in this research is because CBT used as the basis for I-CBT manuals is seen as less emphasis on information process biases. Therefore if attention training is added to I-CBT, it would further enhance the effects on client change. This research seems to be categorized as a modified CBT as well, both in terms of developing its application model and adding an intervention technique into I-CBT to increase its effectiveness.

Another development of CBT research is that research has begun to pay attention to neuro aspects. One of them is a study conducted by Mansson et al. (2015) in Sweden, who examined which parts of neuro play a role in the long-term therapeutic effects of I-CBT. The results show that the dorsal anterior cingulate cortex (dACC) with the amygdala is the part of the brain that plays a role. The review of CBT research that focuses on neuro in this paper is still very limited which is still sourced from just one research.

The reviews that have been presented above relate to the extent of the effectiveness of CBT to overcome social anxiety disorder and research on the modified CBT itself. It is also necessary to pay attention to methods or techniques of CBT that are used in the research, duration of therapy, and also the research's subjects.

In terms of the CBT method used, cognitive restructuring, exposure, and relaxation are the most widely used techniques to overcome social anxiety disorder, either in an individual, group or I-CBT format. The application in I-CBT is arranged in a module that must be studied and implemented by the participants themselves with feedback from the therapist.

The frequency of cognitive restructuring, exposure, and relaxation is certainly not separated from the typical symptoms of social anxiety disorder itself. Typical characteristics of people suffering from a social anxiety disorder is a distortion of thought about the social situation that generates feelings of anxiety and safety behavior or avoidance. This cognitive restructuring will be used to overcome cognitive distortions from people experiencing a social anxiety disorder. Relaxation and exposure used to reduce anxiety and train the client to no longer perform safety behavior or avoidance behavior.

Regarding the duration of therapy, the results of the review note that the implementation of CBT ranges from 10 to 16 weeks. A therapy that does not take long but can provide significant results.

CBT, in general, is intended for adults. However, from a review conducted by James, James, Cowdrey, Soler, and Choke (2015) of the 26 studies (1350 participants were children and adolescents over 4 years old but less than 19 years old), it showed that CBT is also effective for children and adolescents with social anxiety disorders with an odds ratio (OR) 7.85 (95% CI = 5:31 - 11.60). It indicates that CBT can be applied to children and adolescents with some adjustments, for example, in the play format and involving parents as co-therapists.

Conclusion

From a review of some journals above, research on the development of CBT or modified CBT has actually been done even though it may not have been as many as the traditional CBT that has appeared previously. This modified CBT can be used as an alternative to overcome social anxiety disorder because it shows its effectiveness.

The results of the studies reviewed in this paper show that traditional CBT remains effective in dealing with a social anxiety disorder. Even traditional CBT still shows its superiority compared to modified CBT, which is being developed in terms of decreasing symptoms and in improving quality of life. Thus the criticism that the effects of traditional CBT cannot last long needs to be proven through more research. Its effectiveness is further enhanced when CBT is paired with other interventions such as pharmacotherapy or attention training.

I-CBT can be a promising alternative to overcome social anxiety disorder. Besides being as effective as face-to-face CBT, I-CBT can be used as an alternative solution to deal with social anxiety disorder cases. The reason is only the small number of people who experience this disorder want to go to a therapist due to fear of being negatively evaluated by others and often making avoidance behavior.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Association

Andersson, G., & Hedman, E. (2013). Effectiveness of guided internet-based cognitive behavior therapy in regular clinical settings. Verhaltenstherapie online publiziert, 23, 140 - 148.

Andersson, G., Cuijpers, P., Carlbring, P., Riper, H., & Hedman, E. (2014). Guided internet-based vs. face-to-face cognitive behavior therapy for psychiatric and somatic disorders: a systematic review and meta-analysis. World Psychiatry, 13, 288 - 295.

Antony, MM, & Swinson, RP (2008). Shyness & social anxiety workbook. Second edition. Canada: New Harbinger Publications, Inc

Arch, JJ, Ayers, CR, Baker, A., Almkov, E., Dean, DJ, & Craske, MG (2013). Randomized clinical trial of adapted mindfulness-based stress reduction versus group cognitive behavior therapy for heterogeneous anxiety disorders. Behavior Research and Therapy, 51, 185 - 196.

Barlow, DH, & Durand, VM (2001). Abnormal Psychology. An integrative approach. Second

Edition. Canada: Wadsworth, a division of Thomson Learning.

Boettcher, J., Andersson, G., & Carlbring, P. (2013). Combining attention training with cognitive-behavior therapy in Internet-based self-help for social anxiety: study protocol for a randomized controlled trial. Trials Open Access Journal, 14 (68), 1 - 8.

Butler, G. (1999). Overcoming social anxiety and shyness. London: Constable & Robinson Ltd.

Craighead, LW, Craighead, WE, Kazdin, AE, & Mahoney, MJ (1994). Cognitive and Behavioral Interventions. Boston: Allyn and Bacon.

Ehde, DM, Dillworth, TM, & Turner, JA (2014). Cognitive-behavioral therapy for individuals with chronic pain. American Psychological Association, 69 (2), 153-166.

Emery, RE, & Oltmanns, TF (2000). Essentials of abnormal psychology. New Jersey: Prentice-Hall, Inc.

Hedman, E., Strom, P., Stunkel, A., & Mortberg, E. (2013). Plus One, 8 (4), 1- 8.

Henderson, L., & Zimbardo, P. (2010). Shyness, social anxiety, and social anxiety disorder. In Hofman, SG, & DiBartolo, PM (Eds), Social Anxiety. Clinical, Development, and Social Perspectives (2nd ed.) (Respect .65 - 87). USA: Elsevier Inc.

Hofmann, SG, & Smith, JAJ (2008). Cognitive-behavioral therapy for adult anxiety disorder: A Meta-Analysis of randomized placebo-controlled trials. Journal of Clinical Psychiatry, 69 (4), 621 - 632.

James, AC, James, G., Cowdrey, FA, Soler, A., & Choke, A. (2015). Cognitive behavior therapy for anxiety disorders in children and adolescents (Review). The Cochrane Collaboration: John Willey and Sons, Ltd.

Kocovski, NL, Fleming, JE, Hawley, LL, Huta, V., Antony, MM (2013). Mindfulness and acceptance-based group therapy versus traditional cognitive behavior group therapy for social anxiety disorder: A randomized controlled trial. Behavior Research and Therapy (51), 889 - 898.

Mansson, KNT, Frick, A., Boraxbekk, CJ, Marquand, AF, Williams, SCR, Carlbring, P., Andersson, G., & Furmark, T. (2015). Predicting long-term outcomes of Internet-delivered cognitive behavior therapy for social anxiety disorder using fMRI and support vector machine learning. Translational Psychiatry, 5, 1 - 7.

Martin, G., & Pear, J. (2003). Behavior modification. What it is and How to do it. Seventh Edition. New Jersey: Prentice Hall, Inc.

McNeil, DW (2010). Evolution of terminology and construction in social anxiety and its disorders. In Hofman, SG, & DiBartolo, PM (Eds), Social Anxiety. Clinical, Development, and Social Perspectives (2nd ed.) (Pp. 3-17). USA: Elsevier Inc.

Mewton, L., Smith, J., Rossouw, P., & Andrews, G. (2014). Current perspectives on Internet-delivered cognitive behavioral therapy for adults with anxiety and related disorders. Psychological Research and Behavior Management, 7, 37 - 46.

Ost, LG. (2008). Cognitive-behavior therapy for anxiety disorders: 40 years of progress. Nord J. Psychiatry, 62 (47), 5 - 10.

Parikh, SV, Segal, ZV, Grigoriadis, S., Ravindran, AV, Kennedy, SH, Lam, RW, & Patten, SB (2009). Canadian network for mood and anxiety treatments (CANMAT) clinical guidelines for management of major depressive disorders in adults. Psychopathic alone or in combination with antidepressant medication. Journal of Affective Disorder, 117, 15-25.

Priyamvada, R., Kumari, S., Prakash, J., & Chaudury, S. (2012). Cognitive-behavioral therapy in the treatment of social phobias. Industrial Psychiatry Journal, 18 (1) , 60 - 63.

Rudy, BM, Davis, TE, & Matthews, RA (2012). The relationships between self-efficacy, negative self-referent cognitions, and social anxiety in children: a multiple mediator models. Behavior Therapy, 43, 619 - 628.

Russel, AJ, Jassi, A., Fullana, MA, Mack, H., Johnston, K., Heyman, I., Murphy, DG, & Mataix-Cols, D. (2013). Cognitive behavior therapy for co-morbid Obsessive-Compulsive Disorder in high-functioning Autism Spectrum Disorders: A randomized controlled trial. Opus: University of Bath Online Publication store.

Sheperd, RM (2006). Volitional strategies and social anxiety among college students. College Quarterly, 9, Retrieved May 20, 2014, from http://www.colegequarterly.ca/2006-vol09-num04-fall/sheperd/html.

Singh, JS, & Hope, DA (2009). Cognitive-behavioral approaches to the treatment of social anxiety disorder. Isr J Psychiatry Relat Sci, 46 (1), 62-69.

Stewart, RE, & Chambless, DL (2009). Cognitive-behavioral therapy for adult anxiety disorders in clinical practice: A meta-analysis of effectiveness studies. Journal of Consulting and Clinical Psychology, 77 (4), 595 - 606.

Van der Veek, SM, Derkx, BHF, Benninga, MA, Boer, F., & de Haan, E. (2013). Cognitive behavior therapy for pediatric functional abdominal pain: A randomized controlled trial. Pediatrics, 132 (5), 1163 - 1172.

Wells, A., & Clark, DM (1997). Social Phobia: a Cognitive Approach. In Davey, GCL (eds), Phobias. A handbook of theory, research and treatment (hlm3 - 23). England: John Willey & Sons, Ltd.

Westbrook, D., Kennerley, H., & Kirk, J. (2008). An introduction to cognitive behavior therapy. Skills and applications. London: SAGE publications Ltd.

Wykes, T., Steel, C., Everitt, B., & Tarrier, N. (2008). Cognitive behavior therapy for schizophrenia:

Effect sizes, clinical models, and methodological rigor. Schizophrenia Bulletin, 34 (3) , 523 - 537.

Zipfel, S., Wild, B., Gros, G., Friederich, HC., Teufel, M., Schellberg, T., ...Herzog, W. (2014). Focal psychodynamic therapy, cognitive behavior therapy, and optimized treatment as usual in outpatients with anorexia nervosa (ANTOP study): randomized controlled trial. Lancet, 383, 127 - 137.